

# **2005 Physical Fitness Report of Macao SAR Citizens**

Macao Sport Development Board, Macao SAR

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## **Preface**

Among the comprehensive qualities in life, the quality of health is the foundation of all the other qualities. How to strengthen the physical fitness of the citizens is, therefore, a main concern of the Macao SAR Government.

Regularly monitoring the physical fitness of the citizens can effectively collect data regarding their physical fitness condition and can provide scientific reference as basis for setting up sports and public health policy. This can, in turn, speed up processes of how to popularize sports exercise and enhance the life quality of the citizens.

With collaboration across different departments, the research study in monitoring Macao citizens' physical fitness was accomplished in 2005. The publishing of the "2005 Physical Fitness Report of Macao SAR Citizens" marks the entry of physical fitness research into a new developed stage which possesses profound and practical meaning. The publishing of the report promotes the maturity of the research area, steps up the interflow of research work with Mainland China, encourages the development of research in physical fitness comparison and also acts as basis to provide effective sports and exercise guidance to the public.

Here, I sincerely hope that under the joint effort from different parties, the society's understanding and attention to the physical fitness research and the significant meaning of health development will be heaved. This can help to promote exercise and sports for the entire population, and contribute to the physical fitness strengthening of the citizens.

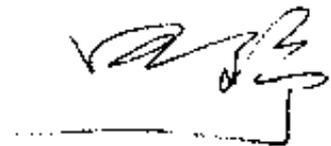
March, 2006

**Dr. Tian Ye, Director of Research Institute of Sports  
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**Preface**

As a society becomes more civilized with rapid growth of technology, people become more and more conscious about their physical fitness and health. Regular physical fitness check-up and monitoring allow the government to grasp their citizens' physical fitness status, strengthen physical fitness and improve health standards, an important foundation for work. In undergoing the 2005 scientific research on Macao citizens' physical fitness, the Macao Sport Development Board organized and implemented the physical fitness monitoring study and proceeded at the same pace as that of the Mainland China. This is by far the largest physical fitness monitoring study in the history of Macao, proving that the Macao SAR Government is greatly concerned with the health and physical fitness of the Macao citizens. This fitness report accurately represents the current physical fitness status of the citizens in Macao, and will be able to positively influence the physical fitness of the Macao citizens.

During the physical fitness monitoring of the Macao citizens, the Research Institute of Sports Science and Macao Sport Development Board worked together on the technical parts of the physical fitness work etc. Cooperation was a great success and was able to achieve noticeable results. I believe that this kind of cooperation will continue to strengthen and develop, and will become a bigger contribution to improve the health and physical fitness of the entire Chinese race.



March, 2006

## Prologue

Physical fitness is the basic foundation for activities in human life. Physical fitness of the people in a country or region is a crucial component of social productivity. With the advancement of the society and the development of sports, using scientific ways to collect information regarding physical fitness of the citizens has drawn increasing attention of the governments. This information can act as reference for establishing sports policy, which ultimately enhance the overall health of their citizens.

To date, physical fitness monitoring uses scientific ways to collect information regarding anthropometric measurements, physiological functions and physique indexes of the people, which can be used as an effective mean to guide the general public in doing sports. Since 2000, China has implemented a nation-wide physical fitness monitoring study once every 5 years. This helps to build a sports service system for the general public and plays an active role in strengthening the physical fitness of the citizens.

Following the 2001 report on the physical fitness of the Macao adults and the 2002 report on the physical fitness of the Macao young children, the physical fitness of four different age groups (3-69 years old, i.e. young children, children and adolescents (students), adults and seniors) was studied all at the same time in 2005. The purposes of this study are to fully grasp the physical fitness status of the Macao citizens, refine the Macau physical fitness database, set standards for monitoring the physical fitness of the people, facilitate the dynamic observation and research on the change of the physical fitness of the Macao citizens, set a foundation for physical fitness comparison with other neighboring regions or countries and act as reference basis for promoting sports activities and related policies. This study completely responded to the National Physical Fitness study, advocated by the General Administration of Sport and symbolize, that research on physical fitness in Macao is on the same pace as that in Mainland China.

This monitoring work was predominately led by Macao Sport Development Board, supported by Research Institute of Sports Science under General Administration of Sport and coordinated by Department of Health, Education and Youth Affairs Bureau, Social Welfare Institute, Tertiary Education Services Office and Macao Polytechnic Institute, and lasted from January to April 2005. Subjects of this study included young children, students, adults and seniors, from 14 primary schools and secondary schools, 5 higher education institutes, 11 government organizations, 19 private institutes and clubs as well as 23 senior centers. The study had 10,477 valid samples altogether. This report was written after analyzing the data from these samples.

We sincerely hope that the publishing of this report will draw the attention of the Macao citizens and that they will benefit from communicating and sharing of the study results, ultimately improving the physical health of the Macao citizens.

Here, we gratefully acknowledge the generous support and cooperation from Research Institute of Sports Science under General Administration of Sport, Department of Health, Education and Youth Affairs Bureau, Social Welfare Institute, Tertiary Education Services Office and Macao Polytechnic Institute as well as all the people and institutes who participated in this study.

**Vong Iao Lek**

Acting President of the Macao Sport Development Board

March, 2006

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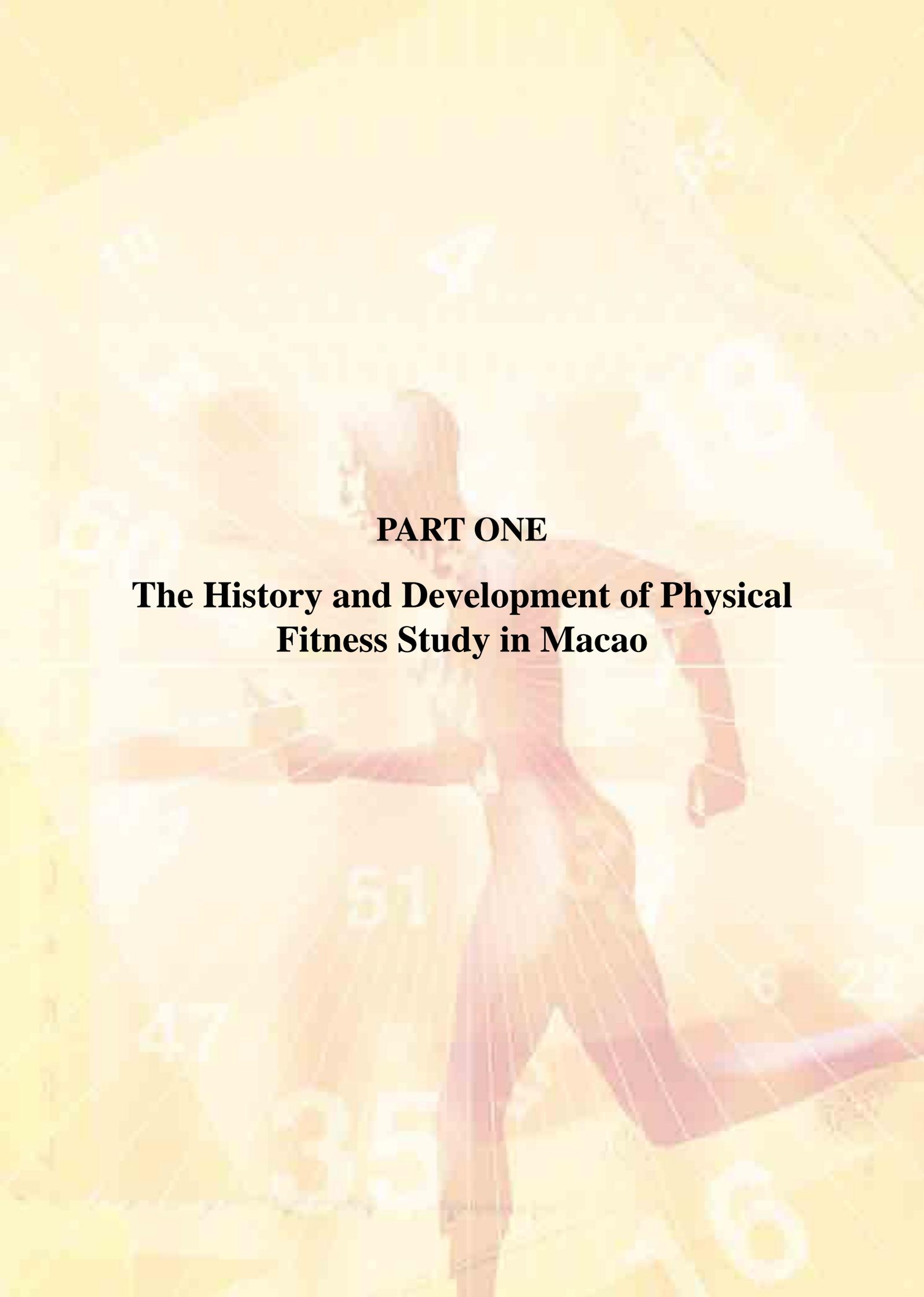
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A person in a red athletic suit is running on a track. The background is a large, faint number '4'. The overall image has a warm, yellowish tint.

**PART ONE**

**The History and Development of Physical  
Fitness Study in Macao**

### PART ONE

## The History and Development of Physical Fitness Study in Macao

### 1.1 History and Significance

For a long period of time, the government of Macao Special Administrative Region, SAR has been developing the field of sports with increasing investment and actively driving the interflow and cooperation with Mainland and foreign countries so as to elevate the standards of the sports field multi-dimensionally. Physical fitness monitoring is an important tool used to understand the physique status of the Macao citizens. It has also become one of the government's main focuses. Thus, finding ways to perfect the physical fitness monitoring system and to strengthen the physical fitness of the Macao citizens is a major task of the Macao government.

Upon entering the 21st century, both good physical and psychological health of the citizens are needed in order to meet the challenges of intense competition and to survive the fast-paced lifestyle. Some studies showed that the main purpose of the Macao citizens in doing sports is to improve physical fitness. This indicated that with the rapid progress of economy and the rise in standards of living, more and more people have acknowledged the importance of health and hope to improve health and extend life expectancy by doing sports. However, studies also showed that many people still lack knowledge about exercising, and ways of doing sports. Therefore, the scientific evidence of such guidance will inevitably be affected without understanding the big picture of the physical fitness status of the citizens, and without an appropriate evaluation tool for individual physical fitness. As the society advances, it can be seen that the sense for citizens to achieve a healthy physique increase, hence forcing an in-depth knowledge about the physical fitness status of the Macao citizens is a must.

On top of that, there is an increase in specialization of jobs due to the advancement of the society. More and more departments urgently require a grasp on the citizen's physical fitness status in order to appropriately formulate a system and plan for the department. By doing so, they can fully satisfy the demands of the citizens and to rapidly acquire the market share at the same time.

It is necessary to understand the fitness status of the Macao citizens, in order to apply scientific evidence to guide the people to exercise and satisfy their exercise needs. Sports policies can be formulated using these data, to strengthen the physical fitness of the Macao citizens. Monitoring the physical fitness of the Macao citizens will result in a progression of the development of the society. Firstly, through periodic monitoring of citizen's health, scientific testing, evaluation and feedback, the government can increase and accelerate the citizen's awareness and enthusiasm of physical training and exercise. This will lead to an improvement of physical fitness and social productivity, causing the society to continue to offspring high quality human resources. In addition, physical fitness monitoring provides scientific basis for government departments for policy-making. Moreover, the results of the study are important references for future research on the citizen's physical fitness and other related fields.

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As can be seen, holding such a periodic physical fitness monitoring study will not only help citizens learn about their own physical fitness status, it will also provide a goal when formulating a scientific plan for physical training. At the same time, the government will also understand the fitness status of their citizens and formulate policies according to scientific evidence.

## **1.2 A Retrospect of the Physical Fitness Studies in Macao**

The government of Macao has spent quite a long time in studying its citizens' physical fitness. So far, a systematic mechanism to study physical fitness has been outlined. Recalling the history of monitoring physical fitness in Macao and according to the special historical time period, physical fitness studies in Macao can be divided into two phases. The first phase is before the handover of Macao, which included studies of children and adolescents from 1993 - 1995 and 1999- 2000, respectively, as well as a study of the elderly from 1998 - 1999. The second phase is after the handover of Macao, which included the study of adults in 2001, the study of young children in 2002 and the study of all age groups in 2005.

### **The first phase: Studies before the handover of Macao**

This phase started from the study of children and adolescents, "Report on Physical Fitness Study of Children and Adolescents in Macao", conducted by the School of Physical Education and Sports, Macao Polytechnic Institute. In 1993, when the School of Physical Education and Sports, Macao Polytechnic Institute was just established, the Education and Youth Affairs Bureau proposed the Macao Polytechnic Institute and the Shanghai Sports Institute to carry a physical fitness study. The study took place during 1994-1995 and included 1547 students ranging from 5th grade primary school to the 6th grade secondary school (10-17 years old). This first study including a large quantity of subjects was the milestone of studying physical fitness in Macao.

The results of the study were compared with those of Shanghai. The comparison showed that children and adolescents in Shanghai had a smaller frame, wider shoulders and narrower pelvis compared to those in Macao. Girls in Macao tended to have a larger chest circumference. In addition, the questionnaire showed that Macao girls in their puberty years tended to reduce their time spent on sports activities because of the change in body shape.

The second large scale study in the first phase was conducted by the Education and Youth Affairs Bureau and the Macao Polytechnic Institute. Preparation work started in 1998 and questionnaires and tests were carried out from November, 1999 to February, 2000. The study included the participation of 2617 students ranging from 7 to 18 years old and compiled "Report of Physical Fitness of Students in Primary and Middle School in Macao" (March, 2001).

The study showed that compared with the participants in Beijing, Shanghai and Guangzhou, students in Macao were shorter, had poorer cardiorespiratory function, higher heart rates, smaller vital capacity, and lower physical fitness indexes (strength, speed and endurance). Questionnaire also showed that 42.7 % of students in Macao spent less than 2 hours exercising per week and 70 % boys spent less than 5 hours in total. From a physical training standpoint, the reason for

the poor physical fitness of students in Macao could be clearly seen.

The third study in the first phase was coordinated by several community organizations which were led by the School of Physical Education and Sports, the Macao Polytechnic Institute and the Macao Social Welfare Institute. This was the first study examining the physical and mental health of 688 elderly people in Macao. After this study, a book called “Guidance for the Physical and Mental Health of the Elderly in Macao” was published.

The study showed that in terms of anthropometric indexes, the Quitelet index of the elderly men in Macao tended to be lower than those in Beijing and Shanghai, and percent body fat was lower than that of those in Beijing and Guangzhou; percent body fat of the elderly women in Macao was higher than those in Shanghai and Guangzhou. In terms of physiological function, the elderly in Macao had a low vital capacity. They were weaker in strength, slower in response, had poorer balance but better flexibility, compared with their counterparts in Beijing, Shanghai and Guangzhou.

### **The second phase: Studies after the handover of Macao**

After the handover of Macao to China, the increasing exchange and cooperation with Mainland has accelerated the study of physical fitness to become more and more standardized and systematic, which gradually refined the system of physical fitness monitoring in Macao.

The second phase started from studying the adults’ physical fitness, which was conducted by the Macao Sport Development Board, together with the National Physical Fitness Monitor Center, the Department of Health and the Macao Polytechnic Institute in 2001 and 2002. The subjects came from 25 governmental organizations and enterprises and were between 20 to 59 years old. The valid sample size was 3961 with 1952 male subjects (1158 labor workers and 794 non labor workers) and 2009 female subjects (893 labor workers and 1116 non labor workers). This was the first study to examine the physical fitness of adults in Macao, and started the beginning of a new era in physical fitness study in Macao.

The second large scale study in the second phase was the study of 3-6 years old young children in 2002 - 2003, conducted together by the Macao Sport Development Board, Department of Health, Education and Youth Affairs Bureau, Social Welfare Institute and Macao Polytechnic Institute. Nine hundred and two valid subjects were randomly chosen from all eligible young children at the age of 3 to 6. This study not only helped to learn the status of physical fitness of young children in Macao but also made a comparison between that of Macao and those in Beijing, Shanghai and Guangzhou. The comparison showed that although the body shape and physiological functions of young children in Macao developed normally, the percentage of girls with malnutrition tended to be high and the percentage of overweight and underweight boys was also high. This indicated problems of malnutrition and obesity. In addition, young children in Macao were weaker in strength, slower in speed and response, and poorer in flexibility.

### **1.3 The Significance of Synchronizing the Study of Physical Fitness in Macao with Mainland**

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The national physical fitness study which is conducted once every 5 years includes a wider coverage after the handover of Macao. As the interflow between Macao and Mainland rises, there is a gradual integration between the two different cultures, education systems and social ideology. Thus, the connection between the physical fitness monitoring of Macao citizens and Mainland citizens has led to the possibility of creating a history. In 2005, with combined efforts from both Macao and Mainland, the physical fitness study of citizens (from 3 to 69 years old) in Macao was organized at the same time as Mainland. This synchronization has accelerated the progression of the physical fitness monitoring of Macao citizens and possess significant historical meaning.

In June 1995, it was formulated in the “Guideline of Mass Sports Plan” approved by the State Council that our country will ‘establish the national physical fitness monitoring system’ and ‘implement the physical fitness monitoring system, set standard for physical fitness monitoring and announce the citizens’ physical fitness status regularly’. As can be seen, the main goals and duties of the Mainland physical fitness monitoring are to set the physical fitness standards across the nation. Macao, as an integral part of China after the handover, its physical fitness report will inevitably be integrated into the national physical fitness monitoring system. Having Macao’s physical fitness monitoring report will assist Mainland into perfecting their physical fitness network.

A sound system needs the accumulation of experience as time goes by. The handover of Macao undoubtedly sped the pace of its physical fitness monitoring system, shortening the path for the buildup of experience.

Studies before the handover had laid down a solid foundation for the research of physical fitness, however, those researches were not quite systematically or scientifically done. Firstly, studies were only done on children, adolescents and elderly, but not on young children and adults, thus they were not representative of the population. Secondly, testing indexes used were different. For example, in the study of children and adolescents in 1999, the indexes first used were vital capacity, eyesight and color vision. Thirdly, the frequent change in monitoring team resulted in failing to form a relatively stable monitoring network. Fourthly, the categorization of age groups in the studies was conflicting and lacked theoretical support. For example, the first study of children and adolescents was from 10-17 years old, while the second was from 7- 18 years old, and in the study of elderly people, males were from 60-77 years old, whereas females were 55 to 70 years old. Lastly, compared to the Mainland physical fitness monitoring study, Macao physical fitness monitoring lacked the experience of studying a large scale of participants.

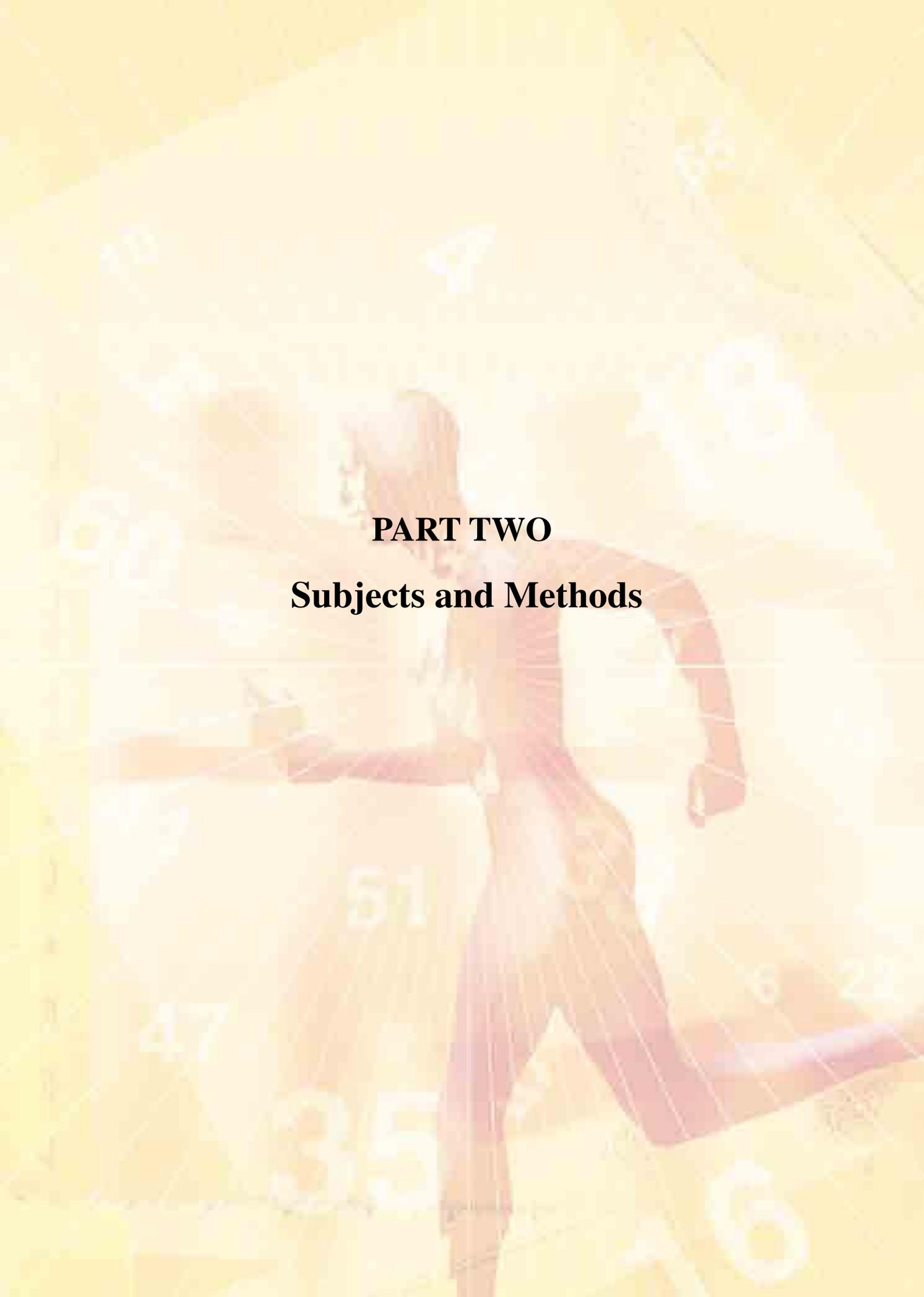
After the handover, physical fitness studies in Macao have made magnificent progresses. For instance, on September 23rd, 2002, the Macau Sport Development Board established the Physical Fitness Monitor Center for Macao Citizens, an organization specialized to conduct monitoring studies on physical fitness. This center enables Macao to have a stable foundation in the field of physical fitness. In 2002 - 2003, the study of 3-6 years old young children was also included, filling in the gap of age group categories.

The physical fitness monitoring in Macao experienced a gradual progression of development

## 2005 Physical Fitness Report of Macao SAR Citizens

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and maturity. After the handover, guidance from Mainland and integration with Mainland's physical fitness monitoring system sped up Macao's physical fitness monitoring work. Not only does this benefit the citizens of Macao, but also will strengthen the physical fitness of all citizens in China, intensifying the historical meaning of such work.

A woman in a red athletic outfit is running on a track. The background is a bright, hazy yellow with large, faint numbers scattered across it, including a prominent '4' at the top center. The overall scene is energetic and focused on physical activity.

**PART TWO**  
**Subjects and Methods**

# PART TWO

## Subjects and Methods

### 2.1 Subjects

Subjects were Macao citizens aged 3-69 and were categorized into four age groups: young children (aged 3-6), children and adolescents (students, aged 6-22), adults (aged 20-59) and seniors (aged 60-69).

#### 2.1.1 Basic criteria for the subjects

Qualified subjects should meet the following criteria: healthy and free from congenital heart disease, brain paralysis, deaf-mutism, dementia, mental disorder, dysplasia and other acute and chronic diseases, such as rheumatic heart disease, hypertension and so on. Subjects must be Macao citizens endowed with self-caring ability, acceptable verbal skills, thinking and reception ability, as well as ability to perform basic physical activities. In addition, the young children subjects should have lived in Macao for at least 3 years, whereas the rest of the subjects should have lived in Macao for at least 5 years.

#### 2.1.2 Sampling

##### 2.1.2.1 Sampling principle

Subjects were selected randomly from different age groups. Macao SAR citizens acted as the sampling pool and subjects were randomly selected according to their age, gender and profession (adults).

##### 2.1.2.2 Sampling method

###### (1) Division of testing areas

The seven communities in Macao were divided into the following three areas: (1) Nossa Senhora de Fátima (north), (2) Santo António and S. Lázaro (central) and (3) S.Lourenço, Sé Catedral, Nossa Senhora do Carmo and São Francisco Xavier (south).

###### (2) Determination of the sampling sites and the number of subjects

###### a. Young children, students and seniors

From each area, two sites of each type of institutes (i.e. kindergartens, schools, senior centers etc.) were selected randomly. Young children and students of the same class were grouped as a unit, and seniors from the same senior center were also grouped as a unit. Everyone in the selected sites was in the sample pool as long as they met the basic criteria as subjects.

All subjects were grouped according to age and gender. For young children, each age group differed by half a year, with 16 groups ( $n = 55/\text{group}$ ) and a total of 880 subjects in the

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young children category. For the primary and secondary school students, each age group differed by one year, with 26 groups (n = 165/group) altogether 4290 subjects. The age group of the university students also differed by one year, with 8 groups (n = 105/group) and a total of 840 subjects. As for the seniors, their age group differed by five years, with 4 groups (n = 105/group) altogether 420 subjects. If the two selected sites did not provide enough valid subjects, subjects would be randomly picked from the third randomly selected site.

b. Adults

Adult subjects were randomly selected from different government organizations and private institutes, which were chosen as sampling sites. One-third of the adult subjects were from governmental organizations and two-thirds of the subjects were from private institutes. The adult subjects were divided into two groups: labor intensive and non-labor intensive workers. They were also classified according to gender and age. Each age group differed by five years, with 32 groups (n = 105/group), altogether 3360 subjects in the adult category.

(3) Calculation of subjects' age

In this study, subjects' age should be calculated as follows:

3-6 years old (young children)

Birthday has passed for more than 6 months during the study:

$$\text{Age} = 2005 - \text{birth year} + 0.5$$

Birthday has passed but less than 6 month during the study:

$$\text{Age} = 2005 - \text{birth year}$$

Birthday will be coming in less than 6 months after the study:

$$\text{Age} = 2005 - \text{birth year} - 0.5$$

Birthday will be coming in more than 6 months after the study:

$$\text{Age} = 2005 - \text{birth year} - 1$$

6-69 years old

Birthday has passed during the study:

$$\text{Age} = 2005 - \text{birth year}$$

Birthday has not passed during the study:

$$\text{Age} = 2005 - \text{birth year} - 1$$

(4) Principle of selecting samples

Principle of equality

Ensure that equal portion of the subjects from different groups (gender, age and profession) was selected during sampling.

Principle of even distribution

When selecting samples for the adult and seniors groups, even distribution of the samples at different ages was guaranteed. For example, in the age group of 20-24 with 105 subjects, number of subjects aged 20, 21, 22, 23 or 24 should be about 20.

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### 2.2 Examined variables

In this study, physique of the subjects was examined and questionnaires were given. Physique examination included measurements of anthropometric, functional and physical fitness indexes. For young children, dental decay was determined. Dental decay, eyesight, color vision and hearing ability of children and adolescents (students) were also examined. As for adults, hearing ability was also determined. Information about the characteristics and lifestyle of the subjects were obtained from the questionnaires (table 2-1).

Methods for measuring the physique indexes and quality control of the measurements were elaborated in Appendix 1 & 2.

Questionnaires were listed in Appendix 3 & 4.

Table 2-1 Indexes examined in Macao citizens

| Types                  | Indexes examined                                                                                                                                                                                                                                                                                                                                                                                                                                     | Young children | Children and adolescents (students) |                 |                 | Adults          |                 | Seniors         |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 3~6 years old  | 6~12 years old                      | 13~18 years old | 19~22 years old | 20~39 years old | 40~59 years old | 60~69 years old |
| Anthropometric         | Height<br>Sitting height<br>Weight<br>Chest circumference<br>Waist circumference<br>Hip circumference<br>Skinfold thickness<br>Shoulder width<br>Pelvis width<br>Foot length                                                                                                                                                                                                                                                                         |                |                                     |                 |                 |                 |                 |                 |
| Physiological function | Heart rate/ pulse<br>Blood pressure<br>Vital capacity<br>Step test                                                                                                                                                                                                                                                                                                                                                                                   |                |                                     |                 |                 |                 |                 |                 |
| Physical fitness       | 10 m shuttle run<br>50 m run<br>50 m x 8 shuttle run<br>800 m run (female)<br>1000 m run (male)<br>Standing long jump<br>Walking on balance beam<br>Successive jumps with both feet<br>Pull-ups with body inclined (male)<br>Pull-ups (male)<br>Vertical jump<br>Grip strength<br>Back strength<br>Tennis ball distance throw<br>Sit and reach<br>One foot stands with eyes closed<br>Respond time<br>Push-ups (male)<br>One-minute sit-ups (female) |                |                                     |                 |                 |                 |                 |                 |
| Health                 | Dental decay<br>Eyesight<br>Color vision<br>Hearing                                                                                                                                                                                                                                                                                                                                                                                                  |                |                                     |                 |                 |                 |                 |                 |

Note: “ ” indicated that the index was measured in that age group

## 2.3 Testing Apparatus

Testing apparatus utilized in this study were purchased from Beijing Xindonghua Sports Apparatus Co., Ltd. and are shown in pictures 2-1 to 2-27.

| No. | Products                                                | No. | Products                          |
|-----|---------------------------------------------------------|-----|-----------------------------------|
| 1   | (Adults) Stadiometer                                    | 21  | Bare L-square                     |
| 2   | Electronic digital scale                                | 22  | Sphygmomanometer                  |
| 3   | Electronic spirometer                                   | 23  | Visual chart                      |
| 4   | Heart rate monitor, stopwatch (stand-by)                | 24  | Color vision examination pictures |
| 5   | WCS-1000 Grip dynamometer                               | 25  | Pitchfork (512Hz)                 |
| 6   | Back dynamometer                                        | 26  | Tennis ball                       |
| 7   | Electronic sit-and-reach measuring apparatus            | 27  | Stopwatch                         |
| 8   | Vertical jump test mat                                  | 28  | Starting flag, whistle            |
| 9   | Electronic selective respond time measuring apparatus   | 29  | Single bar                        |
| 10  | Balance monitor                                         |     |                                   |
| 11  | Skinfold caliper                                        |     |                                   |
| 12  | (Children) Stadiometer                                  |     |                                   |
| 13  | (Children) Electronic sit-and-reach measuring apparatus |     |                                   |
| 14  | Electronic push-up counter                              |     |                                   |
| 15  | Electronic sit-up counter                               |     |                                   |
| 16  | IC Card                                                 |     |                                   |
| 17  | Hand card writer and hand card reader                   |     |                                   |
| 18  | Balance beam                                            |     |                                   |
| 19  | Soft packs                                              |     |                                   |
| 20  | Electronic standing long jump mat                       |     |                                   |



Picture 2-1 Stadiometer



Picture 2-2 Electronic digital scale



Picture 2-3 Bare L-square

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Picture 2-4 Measuring tape



Picture 2-5 Skinfold caliper



Picture 2-6 Foot length ruler



Picture 2-7  
Stethoscope and stopwatch



Picture 2-8  
Sphygmomanometer



Picture 2-9  
Electronic spirometer



Picture 2-10  
Heart rate monitor



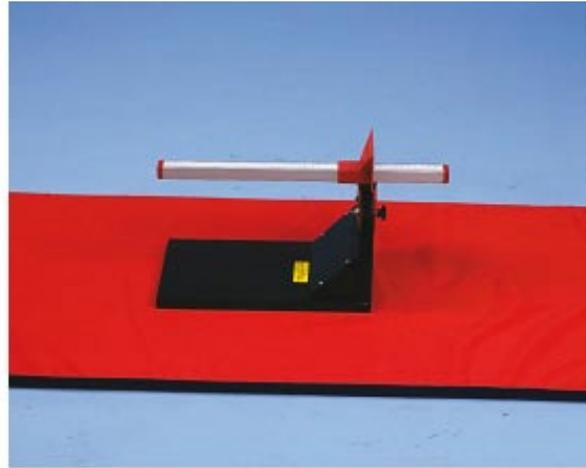
Picture 2-11 Grip dynamometer



Picture 2-12  
Back dynamometer



Picture 2-13 Electronic sit and reach



Picture 2-14 Mechanical component of apparatus sit and reach apparatus



Picture 2-15 Vertical jump mat



Picture 2-16 Electronic selective respond time apparatus



Picture 2-17 Balance monitor



Picture 2-18 Electronic push-ups counter



Picture 2-19 Electronic sit-up counter

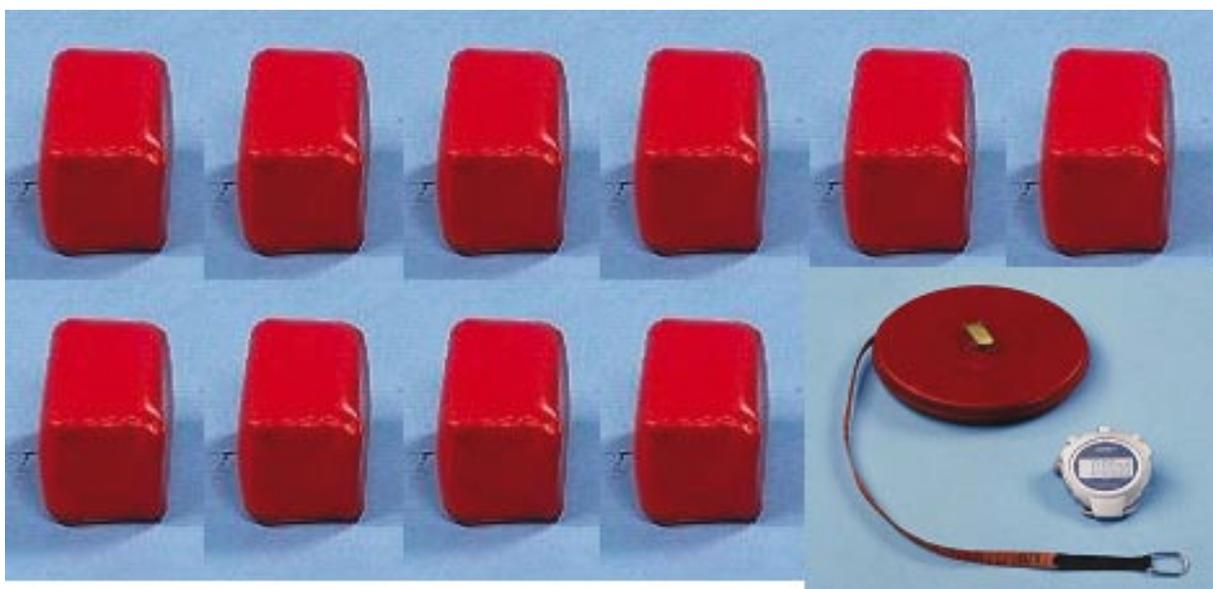
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Picture 2-20 IC Card and hand card writer



Picture 2-21 Balance beam



Picture 2-22 Soft packs and measuring tape



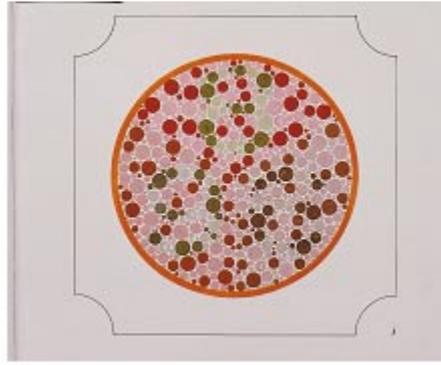
Picture 2-23 Electronic standing long jump mat



Picture 2-24 Tennis balls and measuring tape



Picture 2-25  
Starting flag, whistle and stopwatch



Picture 2-26  
Color vision examination picture



Picture 2-27  
Visual chart

## 2.4 Study Workflow

To guarantee smooth operation of the study, the Macao Sport Development Board and the Research Institute of Sports Science, which works under the General Administration of Sport, started the preparatory work in 2004. In accordance with the characteristics of physical fitness study and the reality of Macao, the study was set into three phases which included the preparatory phase in 2004, the implementing phase in the first half year of 2005, and the results analysis phase in the second half of the year of 2005 and 2006 (figure 2-28).

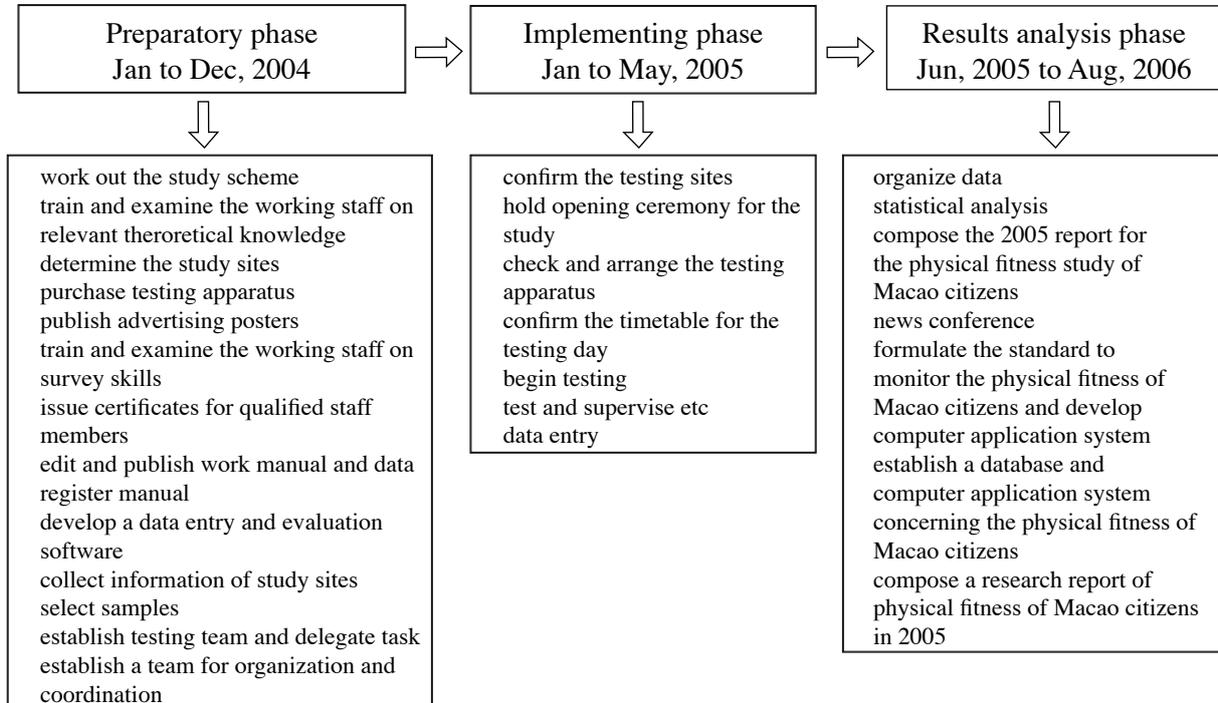


Figure 2-28 Phases of the study

### 2.5 Data Handling

The original data of this study came from the questionnaires and the examined physique indexes. To ensure the quality of the data and reduce the discrepancy in analysis, data analysis was handled in two steps: firstly the data was organized and checked. Secondly, data was analyzed statistically.

#### 2.5.1 Data organizing and checking

##### 2.5.1.1 Logic screening

Using the established Access database, we screened the logic between various indexes with the SQL editor or SPSS. Indexes mentioned in the report of the National Physical Health Survey in 2000 and the report of the Scientific and Technological Achievements were used as reference-value in the screening process.

##### 2.5.1.2 Auditing and correcting

Data was checked whether it was correctly registered in the data pamphlet when the data was beyond the reference-value range (table 2-2-table 2-7). If the data was not correctly registered, phone calls to the subjects were made for confirmation and correction. If it was correctly registered, data would be remained as it was (figure 2-29)

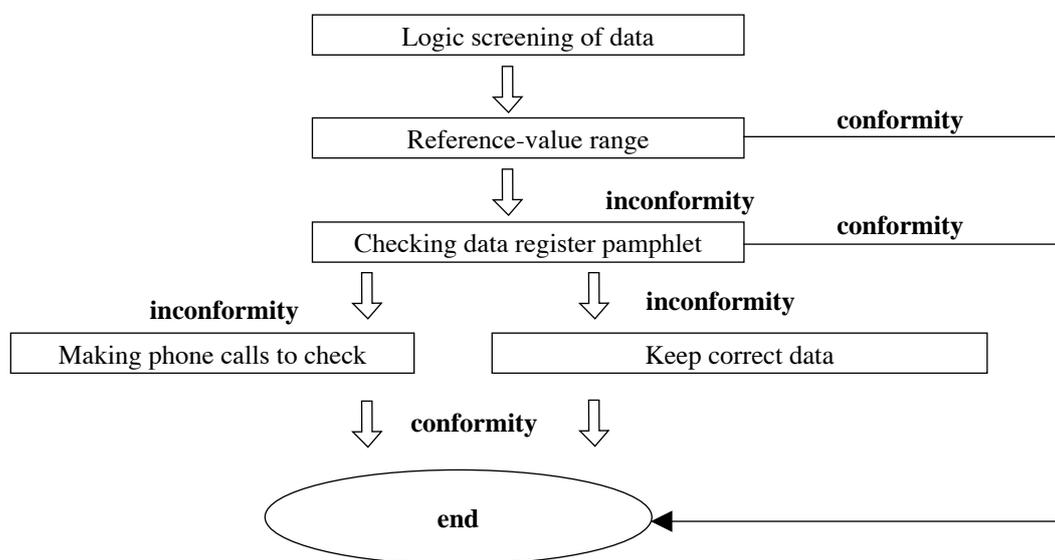


Figure 2-29 Data organizing and checking workflow

Table 2-2 Reference-value range for children aged 3-6 years old (boys)

| Index                                 | 3 years old | 4 years old | 5 years old | 6 years old |
|---------------------------------------|-------------|-------------|-------------|-------------|
| Height (cm)                           | 89.0~110.0  | 95.0~115.7  | 100.2~122.3 | 104.5~127.0 |
| Weight (kg)                           | 12.1~19.8   | 13.4~22.4   | 14.6~25.8   | 15.8~28.0   |
| Quitelet index                        | 130.7~189.9 | 135.4~200.0 | 140.7~219.0 | 145.8~229.8 |
| Sitting height (cm)                   | 50.5~63.0   | 54.0~66.0   | 56.5~68.9   | 58.0~70.5   |
| Sitting height index                  | 52.7~61.1   | 53.0~60.1   | 53.1~59.4   | 52.3~58.7   |
| Chest circumference (cm)              | 46.6~58.0   | 48.0~59.2   | 50.0~62.0   | 50.0~64.0   |
| Chest circumference index             | 46.5~58.3   | 45.4~56.3   | 44.5~55.2   | 43.7~54.4   |
| Upper arm skinfold thickness (mm)     | 4.0~16.0    | 4.0~16.0    | 4.0~16.5    | 4.0~17.0    |
| Subscapular skinfold thickness (mm)   | 3.5~12.0    | 3.5~12.0    | 3.5~13.0    | 3.5~12.5    |
| Abdominal skinfold thickness (mm)     | 3.0~13.4    | 3.0~15.0    | 3.0~16.5    | 3.0~16.0    |
| Sum of skinfold thickness (mm)        | 12.5~39.5   | 12.5~41.0   | 12.0~44.5   | 11.5~43.3   |
| Resting heart rate (bpm)              | 75~120      | 75~120      | 75~120      | 75~120      |
| Standing long jump (cm)               | 24~95       | 38~110      | 52~127      | 61~140      |
| Tennis ball distance throw (m)        | 1.5~7.3     | 2.0~9.6     | 3.0~12.0    | 3.8~15.0    |
| Sit and reach (cm)                    | 2.6~17.0    | 2.0~17.0    | 1.0~17.0    | 1.0~17.0    |
| 10 m shuttle run (sec)                | 7.0~15.0    | 6.3~12.1    | 6.0~10.2    | 5.6~9.4     |
| Moving forward on balance beam (sec)  | 4.7~45.0    | 3.5~31.2    | 2.8~21.2    | 2.3~14.8    |
| Moving sidelong on balance beam (sec) | 11.0~62.0   | 8.6~57.8    | 4.6~47.1    | 3.6~30.1    |
| Successive jumps with both feet (sec) | 5.4~24.0    | 4.7~15.9    | 4.4~12.1    | 4.1~10.4    |

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Table 2-3 Reference-value range for children aged 3~6 (girls)

| Index                                 | 3 years old | 4 years old | 5 years old | 6 years old |
|---------------------------------------|-------------|-------------|-------------|-------------|
| Height (cm)                           | 88.0~108.3  | 94.1~114.5  | 99.4~121.0  | 103.4~125.3 |
| Weight (kg)                           | 11.6~19.1   | 12.9~21.6   | 14.1~24.1   | 15.1~26.0   |
| Quetelet Index                        | 126.5~184.7 | 131.8~197.2 | 136.8~205.6 | 140.1~215.6 |
| Sitting height (cm)                   | 50.0~62.1   | 53.0~65.0   | 56.0~67.8   | 57.7~69.6   |
| Sitting height index                  | 52.7~61.0   | 52.8~60.0   | 53.0~59.1   | 52.4~58.8   |
| Chest circumference (cm)              | 45.0~57.0   | 46.5~58.0   | 48.0~60.0   | 49.0~62.0   |
| Chest circumference index             | 45.7~57.8   | 44.6~55.6   | 43.4~54.2   | 42.6~53.6   |
| Upper arm skinfold thickness (mm)     | 4.0~17.5    | 4.0~17.0    | 4.0~17.0    | 4.0~17.0    |
| Subscapular skinfold thickness (mm)   | 3.5~13.0    | 4.0~13.0    | 4.0~14.0    | 3.8~13.5    |
| Abdominal skinfold thickness (mm)     | 3.5~15.0    | 3.5~16.0    | 3.0~16.5    | 3.5~17.0    |
| Sum of skinfold thickness (mm)        | 12.5~42.5   | 13.5~44.0   | 13.0~45.5   | 12.5~44.5   |
| Resting heart rate (bpm)              | 75~120      | 75~120      | 75~120      | 75~120      |
| Standing long jump (cm)               | 23~90       | 35~103      | 50~117      | 60~127      |
| Tennis ball distance throw (m)        | 1.5~6.0     | 2.0~7.5     | 2.5~9.0     | 3.0~10.5    |
| Sit and reach (cm)                    | 3.0~18.0    | 3.2~18.0    | 2.9~18.8    | 3.0~19.0    |
| 10 m shuttle run (sec)                | 7.2~15.8    | 6.5~12.9    | 6.1~11.0    | 5.9~10.2    |
| Moving forward on balance beam (sec)  | 4.9~45.9    | 4.0~32.1    | 3.0~20.5    | 2.6~16.0    |
| Moving sidelong on balance beam (sec) | 10.0~80.3   | 8.3~59.0    | 6.4~55.2    | 4.6~52.9    |
| Successive jumps with both feet (sec) | 5.5~24.2    | 5.0~16.2    | 4.5~12.1    | 4.3~10.5    |

Table 2-4 Reference-value range for students aged 6~22 (physiological functions)

| Gender | Age (year) | Pulse (times/min) | Systolic pressure (mmHg) | Diastolic pressure (mmHg) | Vital capacity (ml) |           |
|--------|------------|-------------------|--------------------------|---------------------------|---------------------|-----------|
| Male   | 6          | 72~116            | 70~110                   | 42~70                     | 781~1684            |           |
|        | 7          | 72~115            | 74~110                   | 43~71                     | 857~1940            |           |
|        | 8          | 69~116            | 72~110                   | 40~72                     | 1058~2136           |           |
|        | 9          | 70~115            | 76~118                   | 46~76                     | 1144~2392           |           |
|        | 10         | 70~107            | 80~123                   | 46~79                     | 1314~2707           |           |
|        | 11         | 64~112            | 84~124                   | 50~80                     | 1560~3005           |           |
|        | 12         | 70~118            | 84~127                   | 49~80                     | 1700~3709           |           |
|        | 13         | 67~108            | 90~136                   | 50~82                     | 1944~4332           |           |
|        | 14         | 67~102            | 90~140                   | 50~80                     | 2047~4737           |           |
|        | 15         | 64~114            | 92~140                   | 52~89                     | 2601~5174           |           |
|        | 16         | 64~110            | 94~140                   | 54~84                     | 2717~5479           |           |
|        | 17         | 60~108            | 92~140                   | 58~84                     | 2871~5345           |           |
|        | 18         | 63~103            | 93~140                   | 57~86                     | 2774~5263           |           |
|        | 19         | 60~104            | 96~138                   | 54~86                     | 2870~6005           |           |
|        | 20         | 60~104            | 96~141                   | 60~84                     | 3122~5886           |           |
|        | 21         | 60~99             | 98~130                   | 54~85                     | 3150~5820           |           |
|        | 22         | 61~90             | 100~130                  | 60~83                     | 3222~5449           |           |
|        | Female     | 6                 | 70~115                   | 69~104                    | 42~67               | 637~1515  |
|        |            | 7                 | 68~120                   | 72~104                    | 44~70               | 875~1614  |
|        |            | 8                 | 69~117                   | 72~114                    | 40~68               | 924~1944  |
|        |            | 9                 | 70~117                   | 80~114                    | 42~76               | 1130~2210 |
|        |            | 10                | 69~120                   | 79~124                    | 48~80               | 1069~2582 |
| 11     |            | 68~116            | 81~124                   | 47~81                     | 1376~2862           |           |
| 12     |            | 68~116            | 86~126                   | 51~81                     | 1467~3019           |           |
| 13     |            | 70~110            | 88~132                   | 52~82                     | 1680~3350           |           |
| 14     |            | 70~112            | 90~128                   | 52~81                     | 1701~3229           |           |
| 15     |            | 68~110            | 90~128                   | 55~84                     | 1940~3708           |           |
| 16     |            | 64~110            | 90~130                   | 54~82                     | 1908~3795           |           |
| 17     |            | 68~110            | 88~126                   | 55~84                     | 2021~3637           |           |
| 18     |            | 64~102            | 87~124                   | 53~83                     | 2098~3675           |           |
| 19     |            | 64~105            | 89~124                   | 54~84                     | 1845~4165           |           |
| 20     |            | 64~110            | 80~130                   | 50~85                     | 1810~3980           |           |
| 21     |            | 62~100            | 80~120                   | 50~84                     | 2012~4054           |           |
| 22     |            | 63~97             | 75~123                   | 50~87                     | 1993~4126           |           |

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Table 2-5-1 Reference-value range for students aged 6~22 (anthropometrics)

| Gender | Age (year) | Height (cm) | Sitting height (cm) | Weight (kg) | Chest circumference (cm) | Waist circumference (cm) | Hip circumference (cm) |           |
|--------|------------|-------------|---------------------|-------------|--------------------------|--------------------------|------------------------|-----------|
| Male   | 6          | 110.7~126.8 | 60.2~69.9           | 16.7~31.3   | 51.9~68.4                | 46.4~67.2                | 52.8~72.4              |           |
|        | 7          | 113.4~135.3 | 61.5~72.4           | 17.6~38.7   | 53.0~74.1                | 47.1~73.6                | 54.6~79.3              |           |
|        | 8          | 118.3~139.9 | 63.8~75.0           | 19.3~44.2   | 55.2~77.3                | 48.0~77.0                | 57.0~81.4              |           |
|        | 9          | 123.8~145.8 | 66.3~76.9           | 22.9~50.3   | 57.3~83.9                | 50.4~83.4                | 60.7~86.1              |           |
|        | 10         | 128.5~152.9 | 67.9~79.7           | 23.9~52.6   | 58.2~84.5                | 51.0~83.2                | 61.9~87.0              |           |
|        | 11         | 131.2~159.8 | 68.9~83.8           | 26.5~61.5   | 61.5~88.1                | 54.0~89.2                | 64.7~92.6              |           |
|        | 12         | 136.8~168.8 | 71.9~88.5           | 29.6~69.6   | 62.8~93.9                | 54.5~93.4                | 65.7~98.4              |           |
|        | 13         | 145.4~175.3 | 74.5~93.0           | 32.5~74.7   | 63.7~94.8                | 54.5~93.9                | 67.6~101.0             |           |
|        | 14         | 152.9~179.4 | 79.8~94.2           | 39.1~83.6   | 67.1~97.5                | 56.7~96.0                | 73.6~105.7             |           |
|        | 15         | 157.5~180.9 | 82.6~95.6           | 41.9~82.2   | 70.9~98.3                | 59.9~92.1                | 76.6~101.0             |           |
|        | 16         | 160.4~184.6 | 85.9~96.2           | 43.4~83.1   | 72.7~98.4                | 59.6~92.4                | 78.1~102.8             |           |
|        | 17         | 160.6~182.4 | 85.3~98.2           | 44.4~88.6   | 73.2~102.9               | 60.7~101.7               | 78.6~107.0             |           |
|        | 18         | 160.2~182.5 | 86.0~97.0           | 45.6~82.1   | 74.9~99.1                | 61.7~93.7                | 78.5~104.2             |           |
|        | 19         | 159.3~181.5 | 86.3~97.4           | 46.9~86.5   | 77.5~98.5                | 63.2~94.7                | 79.2~105.6             |           |
|        | 20         | 158.5~183.4 | 86.4~98.1           | 46.6~82.8   | 74.8~101.7               | 59.7~90.3                | 80.7~101.6             |           |
|        | 21         | 162.8~182.9 | 85.7~97.5           | 47.4~83.9   | 76.0~98.9                | 62.3~91.8                | 79.2~99.8              |           |
|        | 22         | 160.1~179.0 | 85.9~96.3           | 49.1~82.3   | 77.6~100.9               | 64.0~93.1                | 81.6~98.8              |           |
|        | Female     | 6           | 108.5~127.6         | 59.4~70.4   | 16.7~28.2                | 51.4~66.7                | 45.6~62.5              | 53.3~69.6 |
|        |            | 7           | 113.3~132.7         | 62.6~71.8   | 18.3~37.2                | 52.0~76.9                | 46.5~71.2              | 56.1~76.9 |
|        |            | 8           | 114.4~139.0         | 63.2~74.0   | 18.3~39.2                | 53.3~74.9                | 46.9~73.9              | 55.9~79.7 |
|        |            | 9           | 124.5~148.9         | 65.9~79.6   | 21.4~49.0                | 55.0~82.3                | 48.0~75.8              | 60.2~85.5 |
|        |            | 10          | 129.4~153.9         | 68.3~82.7   | 23.8~55.5                | 57.5~85.0                | 50.0~80.4              | 60.8~89.7 |
| 11     |            | 137.5~159.8 | 71.6~84.4           | 26.6~56.5   | 58.8~87.4                | 52.0~84.4                | 66.3~93.7              |           |
| 12     |            | 141.6~162.9 | 73.6~87.7           | 30.9~60.8   | 64.3~91.5                | 55.0~81.9                | 70.6~96.6              |           |
| 13     |            | 144.5~167.1 | 76.2~88.7           | 34.3~72.4   | 66.0~94.7                | 54.8~87.0                | 72.9~103.4             |           |
| 14     |            | 144.4~167.4 | 77.3~88.9           | 35.1~65.0   | 68.0~92.5                | 55.8~85.6                | 74.5~104.3             |           |
| 15     |            | 147.8~167.9 | 79.8~90.7           | 36.9~67.6   | 69.4~92.3                | 56.8~82.4                | 78.0~99.5              |           |
| 16     |            | 147~169.7   | 79.3~91.7           | 39.9~71.4   | 71.7~94.8                | 57.7~81.6                | 79.5~104.2             |           |
| 17     |            | 148.4~166.5 | 80.2~90.4           | 37.2~69.1   | 71.0~94.9                | 57.5~85.2                | 79.2~103.0             |           |
| 18     |            | 147.6~168.3 | 80.5~90.9           | 37.5~63.1   | 71.2~89.0                | 57.2~79.8                | 79.4~99.3              |           |
| 19     |            | 148.4~168.3 | 79.8~90.5           | 39.0~71.0   | 70.8~92.5                | 56.7~84.6                | 80.0~99.8              |           |
| 20     |            | 146.3~169.2 | 80.5~91.2           | 38.7~64.9   | 72.3~92.3                | 57.3~80.0                | 79.3~98.5              |           |
| 21     |            | 147.0~169.6 | 80.9~90.6           | 40.0~60.4   | 71.3~87.8                | 57.0~78.8                | 79.9~96.7              |           |
| 22     |            | 148.9~166.1 | 81.3~90.9           | 36.5~64.6   | 70.8~90.0                | 56.1~80.5                | 78.2~97.2              |           |

Table 2-5-2 Reference-value range for students aged 6~22 (anthropometrics)

| Gender | Age<br>(year) | Skinfold thickness (mm) |             |           | Shoulder<br>width<br>(cm) | Pelvis width<br>(cm) | Foot length<br>(cm) |           |
|--------|---------------|-------------------------|-------------|-----------|---------------------------|----------------------|---------------------|-----------|
|        |               | Upper arm               | Subscapular | Abdominal |                           |                      |                     |           |
| Male   | 6             | 4.5~19.8                | 3.5~17.0    | 3.0~24.6  | 23.5~28.5                 | 17.0~20.6            | 16.5~20.2           |           |
|        | 7             | 5.0~23.0                | 4.0~26.0    | 3.4~28.9  | 24.3~30.1                 | 17.3~22.3            | 17.0~21.1           |           |
|        | 8             | 5.0~27.5                | 4.0~27.0    | 3.5~33.1  | 25.4~30.5                 | 17.6~22.3            | 17.5~21.8           |           |
|        | 9             | 5.0~29.0                | 4.0~29.3    | 4.0~33.7  | 26.5~32.6                 | 18.2~24.1            | 18.9~23.0           |           |
|        | 10            | 5.5~29.7                | 4.5~30.7    | 4.0~37.0  | 27.0~34.0                 | 18.9~24.9            | 19.3~23.9           |           |
|        | 11            | 5.7~30.0                | 5.0~33.0    | 4.5~38.7  | 28.3~35.7                 | 20.0~26.4            | 20.1~25.3           |           |
|        | 12            | 5.5~31.3                | 5.0~38.0    | 4.0~44.8  | 29.1~37.3                 | 20.6~27.3            | 20.7~26.4           |           |
|        | 13            | 5.0~30.5                | 5.0~33.5    | 4.2~44.0  | 30.6~40.0                 | 21.4~28.7            | 21.8~26.6           |           |
|        | 14            | 5.0~28.5                | 5.5~28.7    | 5.0~41.2  | 32.3~40.0                 | 22.5~29.7            | 22.8~27.3           |           |
|        | 15            | 4.7~27.9                | 5.5~29.3    | 4.7~37.5  | 34.4~41.1                 | 23.5~29.5            | 22.9~27.7           |           |
|        | 16            | 5.0~24.6                | 6.1~28.0    | 4.6~40.5  | 33.6~41.7                 | 23.8~29.5            | 23.0~27.3           |           |
|        | 17            | 5.0~24.4                | 5.5~31.0    | 5.0~39.0  | 33.6~41.9                 | 23.8~30.0            | 22.7~27.3           |           |
|        | 18            | 4.5~25.0                | 6.5~27.1    | 5.0~40.6  | 34.7~42.1                 | 24.0~30.2            | 22.6~26.7           |           |
|        | 19            | 4.5~24.7                | 6.5~35.7    | 5.0~39.3  | 35.4~42.6                 | 24.3~30.5            | 22.6~27.9           |           |
|        | 20            | 4.5~24.0                | 6.0~32.6    | 5.0~42.6  | 35.8~41.8                 | 24.8~30.4            | 22.7~27.2           |           |
|        | 21            | 4.5~23.0                | 6.5~26.0    | 5.0~41.0  | 36.5~42.8                 | 25.0~30.2            | 23.7~27.9           |           |
|        | 22            | 4.5~28.3                | 7.0~28.5    | 4.5~46.6  | 36.8~41.7                 | 25.9~30.3            | 23.3~26.1           |           |
|        | Female        | 6                       | 5.6~18.4    | 4.4~18.7  | 3.9~21.3                  | 22.6~27.5            | 15.9~23.0           | 16.3~20.0 |
|        |               | 7                       | 5.5~21.6    | 4.3~23.4  | 4.2~28.0                  | 23.5~29.7            | 16.5~22.7           | 17.1~21.1 |
|        |               | 8                       | 6.2~23.1    | 4.7~24.7  | 4.5~28.7                  | 23.9~29.9            | 16.7~22.2           | 17.2~21.7 |
|        |               | 9                       | 6.3~26.4    | 5.1~30.9  | 5.0~32.5                  | 25.3~32.0            | 18.0~24.4           | 18.5~23.3 |
|        |               | 10                      | 7.0~24.8    | 5.1~30.2  | 5.2~33.1                  | 26.5~33.7            | 18.7~25.9           | 19.4~23.8 |
| 11     |               | 6.4~25.5                | 6.0~34.2    | 6.4~33.6  | 28.0~34.8                 | 19.6~26.4            | 20.4~24.3           |           |
| 12     |               | 6.9~26.4                | 6.5~28.2    | 7.1~36.6  | 29.0~36.3                 | 21.0~26.9            | 20.7~24.4           |           |
| 13     |               | 7.5~32.0                | 7.5~35.5    | 9.5~41.0  | 30.5~36.7                 | 22.2~28.0            | 20.6~24.8           |           |
| 14     |               | 8.4~29.5                | 8.0~32.2    | 10.8~38.7 | 30.2~36.6                 | 22.0~28.0            | 20.7~24.6           |           |
| 15     |               | 10.0~27.5               | 8.4~32.0    | 12.5~42.0 | 31.0~37.2                 | 22.7~28.2            | 21.0~25.2           |           |
| 16     |               | 8.4~26.6                | 8.8~33.5    | 10.4~42.6 | 31.1~37.3                 | 23.2~28.6            | 21.0~24.5           |           |
| 17     |               | 8.2~28.5                | 8.7~35.9    | 10.1~41.1 | 31.6~37.2                 | 23.2~28.5            | 21.1~24.5           |           |
| 18     |               | 9.3~28.0                | 8.5~35.1    | 11.2~37.0 | 31.2~37.3                 | 22.7~29.1            | 20.7~24.7           |           |
| 19     |               | 9.9~27.2                | 9.1~37.0    | 9.9~33.3  | 30.6~37.6                 | 23.1~28.6            | 21.0~24.6           |           |
| 20     |               | 8.5~31.2                | 8.8~37.0    | 9.0~39.0  | 31.1~37.2                 | 22.5~28.4            | 20.5~24.7           |           |
| 21     |               | 9.5~26.4                | 9.5~36.0    | 8.6~31.4  | 31.8~38.1                 | 22.9~28.9            | 21.1~24.2           |           |
| 22     |               | 8.6~26.6                | 9.5~8.0     | 8.3~32.8  | 31.7~38.0                 | 23.2~28.9            | 20.8~24.2           |           |

## 2005 Physical Fitness Report of Macao SAR Citizens

Table 2-6-1 Reference-value range for students aged 6~22 (physical fitness)

| Gender | Age (year) | Standing long jump (cm) | Vertical jump (cm) | Grip strength (kg) | Back strength (kg) | Sit and reach (cm) |           |
|--------|------------|-------------------------|--------------------|--------------------|--------------------|--------------------|-----------|
| Male   | 6          | 71.0~129.8              | 13.2~27.8          | 4.4~11.8           | 16.3~41.8          | -6.9~13.7          |           |
|        | 7          | 80.0~145.3              | 13.7~29.5          | 5.5~15.5           | 15.0~47.3          | -9.1~13.2          |           |
|        | 8          | 90.9~155.0              | 15.2~29.7          | 6.8~15.0           | 18.9~55.1          | -6.5~12.3          |           |
|        | 9          | 92.0~169.2              | 16.8~35.3          | 8.6~19.2           | 24.0~63.2          | -8.7~12.8          |           |
|        | 10         | 87.6~168.0              | 15.3~34.1          | 9.2~21.5           | 21.6~68.0          | -12.0~11.7         |           |
|        | 11         | 104.3~183.4             | 18.2~37.8          | 10.8~25.9          | 28.3~84.7          | -14.0~11.5         |           |
|        | 12         | 110.0~195.0             | 17.8~39.1          | 13.5~32.9          | 35.0~99.0          | -12.2~11.8         |           |
|        | 13         | 127.5~216.0             | 21.6~43.9          | 15.8~37.6          | 43.0~107.1         | -11.8~15.4         |           |
|        | 14         | 133.6~221.0             | 21.9~49.4          | 18.2~45.5          | 51.0~120.9         | -15.3~17.8         |           |
|        | 15         | 139.6~254.4             | 25.7~56.0          | 24.1~45.3          | 59.0~132.2         | -13.7~22.8         |           |
|        | 16         | 140.8~247.5             | 26.5~53.4          | 24.3~49.3          | 67.8~145.8         | -11.3~21.9         |           |
|        | 17         | 146.3~253.0             | 26.1~56.1          | 24.4~51.7          | 65.1~149.8         | -11.7~23.9         |           |
|        | 18         | 137.8~260.0             | 26.7~57.8          | 26.5~54.2          | 72.0~156.2         | -14.3~24.8         |           |
|        | 19         | 144.6~265.0             | 25.4~56.8          | 27.1~54.6          | 77.0~155.7         | -10.8~24.1         |           |
|        | 20         | 142.5~250.0             | 29.3~54.2          | 29.7~54.6          | 70.1~160.8         | -10.3~23.9         |           |
|        | 21         | 148.0~256.0             | 31.7~54.2          | 28.3~54.3          | 75.0~176.0         | -13.4~22.6         |           |
|        | 22         | 160.0~252.5             | 29.4~54.6          | 30.0~49.7          | 65.8~146.6         | -8.6~12.7          |           |
|        | Female     | 6                       | 64.0~122.3         | 12.6~24.9          | 3.1~12             | 11.0~40.3          | -4.3~17.6 |
|        |            | 7                       | 74.2~131.9         | 13.1~26.3          | 4~12.7             | 12.1~42.9          | -5.9~16.5 |
|        |            | 8                       | 86.0~141.4         | 14.3~29.1          | 6~15.1             | 16.6~49.0          | -2.1~18.4 |
|        |            | 9                       | 88.1~147.8         | 14.1~28.7          | 7.3~18.2           | 20.0~58.0          | -8.9~16.0 |
|        |            | 10                      | 96.9~153.2         | 16.8~29.6          | 8.7~20.4           | 20.0~60.1          | -6.7~16.1 |
| 11     |            | 100.0~172.0             | 18.5~32.2          | 11.5~24.1          | 20.0~70.4          | -8.7~18.4          |           |
| 12     |            | 96.0~170.0              | 16.8~35.2          | 13.5~26.7          | 27.3~72.5          | -7.7~18.6          |           |
| 13     |            | 99.0~177.0              | 14.5~33.7          | 14.8~29.2          | 31.0~77.0          | -11.7~23.3         |           |
| 14     |            | 102.6~171.4             | 17.0~31.5          | 13.0~30.0          | 30.6~78.9          | -8.6~22.4          |           |
| 15     |            | 106.0~181.0             | 17.2~34.5          | 15.7~32.9          | 34.0~93.0          | -9.4~24.1          |           |
| 16     |            | 103.6~179.1             | 17.3~33.4          | 16.3~31.4          | 34.0~88.0          | -6.9~19.5          |           |
| 17     |            | 106.1~190.3             | 17.1~36.1          | 16.0~32.5          | 34.2~92.8          | -9.8~22.1          |           |
| 18     |            | 108.8~185.5             | 17.3~34.3          | 17.2~31.2          | 37.8~90.2          | -9.0~22.7          |           |
| 19     |            | 111.7~186.1             | 17.0~35.4          | 16.2~34.3          | 33.8~94.0          | -14.2~24.6         |           |
| 20     |            | 107.0~182.0             | 17.8~34.6          | 15.8~31.9          | 37.0~91.0          | -11.0~22.1         |           |
| 21     |            | 118.1~179.0             | 18.5~35.5          | 14.8~33.5          | 34.4~92.5          | -10.0~26.1         |           |
| 22     |            | 114.9~182.5             | 18.3~35.4          | 15.5~34.7          | 39.5~97.5          | -9.1~19.7          |           |

Table 2-6-2 Reference-value range for students aged 6~22 (physical fitness)

| Gender | Age (year) | One foot stands with eyes closed (sec) | Pull-ups /sit-ups (times) | 50 m run (sec) | Endurance running (sec) |
|--------|------------|----------------------------------------|---------------------------|----------------|-------------------------|
| Male   | 6          | 3.0~36.8                               | 1~30                      | 10.1~15.4      | 127.0~184.9             |
|        | 7          | 3.0~60.3                               | 2~30                      | 9.9~13.9       | 117.3~181.0             |
|        | 8          | 3.0~78.0                               | 1~31                      | 9.2~12.5       | 111.9~175.0             |
|        | 9          | 3.0~77.0                               | 1~41                      | 8.8~12.9       | 108.0~175.0             |
|        | 10         | 3.0~87.6                               | 2~41                      | 8.5~11.8       | 101.4~165.0             |
|        | 11         | 3.0~62.8                               | 1~35                      | 8.3~11.7       | 99.2~171.8              |
|        | 12         | 3.0~127.0                              | 1~37                      | 7.9~11.2       | 92.5~166.9              |
|        | 13         | 4.0~152.0                              | 1~10                      | 7.3~10.0       | 211.3~414.9             |
|        | 14         | 3.0~142.3                              | 1~10                      | 7.2~9.9        | 228.0~402.6             |
|        | 15         | 3.0~160.6                              | 1~10                      | 6.8~9.8        | 211.9~370.7             |
|        | 16         | 4.3~149.0                              | 1~10                      | 6.9~10.1       | 213.0~339.9             |
|        | 17         | 3.0~167.7                              | 1~10                      | 6.9~10.0       | 208.0~351.2             |
|        | 18         | 3.0~163.8                              | 1~10                      | 6.8~10.4       | 210.3~355.7             |
|        | 19         | 4.0~215.7                              | 1~12                      | 6.8~9.6        | 207.2~352.9             |
|        | 20         | 3.0~147.3                              | 1~10                      | 6.9~10.7       | 209.6~379.0             |
|        | 21         | 4.0~174.0                              | 1~11                      | 6.7~8.8        | 219.6~376.4             |
|        | 22         | 6.0~105.1                              | 1~10                      | 6.8~9.4        | 208.4~373.4             |
| Female | 6          | 3.0~55.3                               | 1~26                      | 11.1~14.8      | 129.4~187.7             |
|        | 7          | 3.0~73.5                               | 3~28                      | 10.2~13.8      | 123.6~173.6             |
|        | 8          | 3.6~106.0                              | 2~30                      | 9.5~13.5       | 115.7~172.0             |
|        | 9          | 3.0~74.4                               | 3~35                      | 9.2~12.8       | 107.9~166.0             |
|        | 10         | 3.0~133.4                              | 3~35                      | 9.0~11.9       | 108.0~163.9             |
|        | 11         | 3.0~150.0                              | 10~39                     | 8.7~11.4       | 98.0~146.0              |
|        | 12         | 3.0~149.0                              | 9~40                      | 8.5~12.0       | 103.0~279.8             |
|        | 13         | 3.0~152.0                              | 5~41                      | 8.5~11.9       | 207.6~357.1             |
|        | 14         | 3.0~150.0                              | 7~38                      | 8.5~12.1       | 227.4~356.0             |
|        | 15         | 5.0~147.8                              | 10~41                     | 8.2~11.9       | 219.0~339.7             |
|        | 16         | 4.0~156.0                              | 9~40                      | 8.5~11.6       | 216.0~329.8             |
|        | 17         | 5.0~196.2                              | 9~46                      | 8.2~11.7       | 224.2~346.6             |
|        | 18         | 4.0~159.5                              | 6~43                      | 8.3~12.7       | 229.0~351.5             |
|        | 19         | 4.8~192.6                              | 7~41                      | 8.0~12.8       | 235.5~394.1             |
|        | 20         | 4.0~156.0                              | 6~38                      | 8.4~12.4       | 227.9~350.2             |
| 21     | 4.0~160.7  | 7~40                                   | 8.3~12.6                  | 222.3~354.2    |                         |
| 22     | 3.7~145.1  | 9~34                                   | 8.3~11.9                  | 232.2~359.4    |                         |

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Table 2-7 Reference-value range for subjects aged 20~69

| Indexes                                        | 20~59 years old |             | 60~69 years old |             |
|------------------------------------------------|-----------------|-------------|-----------------|-------------|
|                                                | Male            | Female      | Male            | Female      |
| Height (cm)                                    | 157.0~181.0     | 148.0~169.6 | 152.6~176.5     | 142.5~164.9 |
| Weight (kg)                                    | 47.9~88.3       | 41.2~74.5   | 45.1~85.0       | 39.6~76.8   |
| Quitelet index                                 | 291.7~507.6     | 267.6~460.1 | 283.5~499.7     | 266.8~488.5 |
| Sitting height index                           | 52.0~56.3       | 52.0~56.6   | 52.0~56.3       | 52.0~56.6   |
| Chest circumference (cm)                       | 74.0~103.0      | 72.0~99.3   | 76.0~103.0      | 71.5~104.0  |
| Chest circumference index                      | 43.8~60.7       | 45.2~63.1   | 46.4~62.4       | 47.1~67.3   |
| Waist circumference (cm)                       | 62.0~100.0      | 58.0~91.0   | 65.0~102.5      | 63.0~101    |
| WHR (%)                                        | 73.7~99.0       | 68.6~94.5   | 77.3~102.4      | 75.3~101.1  |
| Hip circumference (cm)                         | 79.0~106.0      | 78.0~104.2  | 79.0~108.0      | 78.0~109.1  |
| Hip circumference index                        | 46.8~62.4       | 46.8~65.9   | 48.6~65.0       | 51.8~71.3   |
| Upper arm skinfold thickness (mm)              | 3.8~27.0        | 6.0~33.0    | 3.7~27.0        | 5.5~35.0    |
| Subscapular skinfold thickness (mm)            | 6.0~34.5        | 7.5~38.0    | 6.0~35.0        | 6.5~42.0    |
| Abdominal skinfold thickness (mm)              | 5.5~44.0        | 8.0~45.0    | 5.0~44.7        | 6.5~54.0    |
| Sum of skinfold thickness (mm)                 | 17.0~98.5       | 24.2~110.0  | 16.5~99.5       | 21.5~122.0  |
| Resting pulse (times/minute)                   | 62~98           | 62~98       | 60~100          | 60~100      |
| Systolic pressure (mmHg)                       | 90~148          | 90~140      | 100~172         | 95~175      |
| Diastolic pressure (mmHg)                      | 60~100          | 55~90       | 60~100          | 60~100      |
| Pressure difference (mmHg)                     | 20~50           | 20~50       | 20~70           | 20~70       |
| Vital capacity (ml)                            | 2135~5105       | 1295~3655   | 1206~3915       | 1090~2900   |
| Vital capacity/weight (ml/kg)                  | 31.4~81.6       | 22.7~69.1   |                 |             |
| Grip strength (kg)                             | 29.6~63         | 18.6~40.8   | 20.2~52.5       | 13.4~34.7   |
| Back strength (kg)                             | 76~189          | 38~115      |                 |             |
| Vertical jump (cm)                             | 17.8~51.4       | 11.5~35     |                 |             |
| Sit-ups/push-ups (times)                       | 3~50            | 0~41        |                 |             |
| Sit and reach (cm)                             | -8.7~23.9       | -4.8~24.0   | -14.0~18.4      | -8.2~21.7   |
| One foot stands with eyes closed (OFSEC) (sec) | 2.0~150.0       | 2.0~150.0   | 2.0~46.0        | 1.0~36.0    |
| Selective respond time (sec)                   | 0.34~0.78       | 0.36~0.86   | 0.4~1.4         | 0.5~1.6     |

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## 2.5.2 Statistical Analysis

### 2.5.2.1 Grouping

(1) Young children were classified according to gender and age (1 year difference between each age group), giving rise to 8 groups in total.

(2) Students aged 6 to 22 were classified according to gender and age (1 year difference between each age group), giving rise to 34 age groups. In addition, students were also grouped into three groups: ages 6-12, 13-18 and 19-22, with 6 age groups altogether.

(3) Adults were classified into 8 groups according to age, gender and labor or non-labor intensive workers. Each age group had a five year difference.

(4) Seniors were classified into 4 groups according to gender and age. Each age group had a five year difference.

(5) The seven communities in Macao were divided into three areas: Paróquia de Nossa Senhora de Fátima (north), Paróquia de Santo António and Paróquia de S. Lázaro (central) and Paróquia de S.Lourenço, Paróquia da Sé Catedral, Paróquia de Nossa Senhora do Carmo and Paróquia de São Francisco Xavier (south).

### 2.5.2.2 Indexes

(1) Items inquired in the questionnaire

**a.** Young children: 18 items including general information (birth place, residence place, kindergarten, etc.), feeding pattern at birth, living habits, sports activities and the occurrence of diseases.

**b.** Students: 21 items including basic information (birth place, residence place and schooling, etc.), living habits, sports curriculum, extracurricular sports activities and the occurrence of diseases.

**c.** Adults: 31 items including general information (birth place, residence place, education level, profession, working environment, etc.), living habits, sports activities, occurrence of diseases, understanding of physical fitness examination.

**d.** Seniors: 31 items including general information (birth place, residence place, education level, profession and working environment before retirement), living habits, sport activities, occurrence of diseases and understanding of physical fitness examination.

(2) Indexes examined

**a.** Anthropometric indexes: height, sitting height, weight, chest circumference, waist circumference, hip circumference, skinfold thickness, shoulder width, pelvis width and foot length.

**b.** Physiological function indexes: resting pulse (heart rate), blood pressure, vital capacity, step test (adults).

**c.** Physical fitness indexes:

Young children

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3-6 years old: 6 items including 10 m shuttle run, standing long jump, walking on balance beam, successive jumps with both feet, tennis ball distance throw and sit and reach.

Children and adolescents:

6 -12 years old: 11 items including 50 m run, 50 m x 8 shuttle run, standing long jump, pull-ups with body inclined (male), one-minute sit-ups (female), vertical jump, grip strength, back strength, sit and reach, one foot stands with eyes closed (OFSEC) and selective respond time.

13-18 years old: 11 items including 50 m run, 800 m run (female) or 1000 m run (male), standing long jump, pull-ups (male), one-minute sit-ups (female), vertical jump, grip strength, back strength, sit and reach, one foot stands with eyes closed (OFSEC) and selective respond time.

19 to 22 years old: 11 items including 50 m run, 800 m run (female) or 1000 m run (male), standing long jump, pull-ups (male), one-minute sit-ups (female), vertical jump, grip strength, back strength, sit and reach, one foot stands with eyes closed (OFSEC) and selective respond time.

Adults

20-39 years old: 8 items including vertical jumps, grip strength, back strength, push-ups (male), one-minute sit-ups (female), sit and reach, one foot stands with eyes closed (OFSEC) and selective respond time.

40-59 years old: 4 items including grip strength, sit and reach, one foot stands with eyes closed (OFSEC) and selective respond time.

Seniors

60-69 years old: 4 items including grip strength, sit and reach, one foot stands with eyes closed (OFSEC) and selective respond time.

### (3) Derivative indexes

Derivative indexes included BMI, Quitelet Index, WHR (waist-hip ratio), percent body fat, lean body mass, pressure difference and vital capacity/weight.

The derivative indexes are calculated as follows:

BMI = weight/height<sup>2</sup> (kg/<sup>2</sup>)

Quitelet Index = weight/height x 1000(kg/cm)

WHR = waist circumference/hip circumference x 100%

Percent body fat (%) = (4.570 ÷ Db - 4.142) × 100

9~11 years old : Db = 1.0879 – 0.00151X (male),  
Db = 1.0794 – 0.00142X (female)

12~14 years old : Db = 1.0868 – 0.00131X (male),  
Db = 1.0888 – 0.00153X (female)

15~18 years old : Db = 1.0977 – 0.00146X (male),  
Db = 1.0931 – 0.00160X (female)

Above 19 years old : Db = 1.0913 – 0.00116X (male),  
Db = 1.0897 – 0.00133X (female)

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$X = \text{upper arm skinfold thickness} + \text{subscapular skinfold thickness (mm)}$

$\text{Lean body mass} = \text{weight} - \text{weight} \times \text{percent body fat}$

$\text{Pressure difference} = \text{systolic pressure} - \text{diastolic pressure}$

#### (4) Health indexes

The occurrence of dental decay, vision defect (mild, moderate and severe), nearsightedness, color vision deficiency and hearing disorder were examined. Dental decay was indicated by the percentage of decay (%). The occurrence of primary tooth decay (dmf) included primary tooth decay (d), tooth loss (m) and tooth filling (f) ( $\text{dmf} = \text{d} + \text{m} + \text{f}$ ). The occurrence of permanent tooth decay (DMF) included permanent tooth decay (D), tooth loss (M) and tooth filling (F) ( $\text{DMF} = \text{D} + \text{M} + \text{F}$ ).

Vision defect was indicated by the proportion of poor vision detected, nearsightedness and the degree of poor vision. A visual activity of less than 5 is considered as poor vision, a 4.9 visual activity is considered as mildly poor vision, a 4.6-4.8 visual activity indicates moderately poor vision, and  $\leq 4.5$  is considered as severely poor vision. Using string mirror can further assess the refractive error. Subjects were considered to be “nearsighted” when positive vision decreased and negative vision increased.

#### 2.5.2.3 Content of Calculation

(1) The valid sample size of each population group was calculated according to age groups.

(2) The actual valid sample size of different age groups was calculated according to the groupings in section 2.5.2.1

(3) The origin of the subjects, sampling sites and some general information (birth place, residential areas, kindergarten and schooling, education level, occupation and work environment, etc.) of the subjects in each age group were calculated according to the groupings in section 2.5.2.1, i.e. frequency and cumulative frequency.

(4) The frequency, population percentage and full sampling cumulative frequency and population percentage of the questionnaire items in each age group were calculated according to the groupings in section 2.5.2.1.

**a.** Young Children: number of samples, mean, standard deviation and percentile of the subjects' birth weight and birth length were calculated. Habits including average daily accumulated sleeping hours, hours of outdoor activity, hours of watching TV, video and playing computer games were determined. Information regarding involvement in extracurricular activities, type of sports participated and occurrence of disease was also examined.

**b.** Students: living habits including daily accumulated walking time and transportation means to and from home and school, hours of outdoor activities, hours of watching TV, video and playing computer games, hours of doing daily homework at home, average daily sleeping hours (included nap time) and involvement of extracurricular activities (hobby classes) were examined. Information on physical education in school, such as the number of physical education class per week and the self-claimed exercise intensity, was investigated. The frequency, duration, intensity and the type of sports participated during extracurricular physical exercise were examined.

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The occurrence of disease within the last 5 years was also examined.

c. Adults and Seniors: daily sleeping hours and sleeping quality, accumulated hours of walking and sitting, types of activities during leisure time, smoking and alcohol drinking; frequency, duration and persistence of exercising, purpose of exercising, types of sports, locations for exercise, feeling and major obstacles from exercising, the occurrence of any disease for the last 5 years and the understanding of “physical fitness monitoring”.

(5) The number and the percentage of the subjects who were ‘frequent exerciser’, “occasional exerciser” or “non-exerciser” were calculated according to the groupings in section 2.5.2.1. “Frequent exerciser” was defined as people who exercised 3 times or more per week, each time exercised for longer than 30 minutes with moderate exercise intensity. People who achieved one or two of the above exercise conditions but not all three conditions at the same time was defined as “occasional exerciser”. And people who did not meet any of the above exercise condition were termed “non-exerciser”.

(6) Number of samples, mean, standard deviation and percentile of all the examined variables of each age group were calculated according to the groupings in section 2.5.2.1.

(7) Number of samples, mean, standard deviation and percentile of the derivative indexes of each age group were calculated according to the groupings in section 2.5.2.1.

(8) Number of samples and proportion of dental decay (%) including primary and permanent tooth decay of each age group in Group (1) were calculated (section 2.5.2.1).

(9) Number of samples, occurrence of dental decay (%), vision defect, nearsightedness, color vision deficiency and hearing disorder of each age group in Group (2) were calculated (section 2.5.2.1).

(10) Number of samples and the proportion of hearing disorder (%) of each age group in Group (3) were calculated (section 2.5.2.1).

(11) Individual sampling difference test and single factor variance analysis were used to examine the difference of all examined variables, derivative indexes and health indexes among different age groups and genders.

### 2.5.2.4 Elaboration on Calculation Methods

#### (1) Mean

Mean indicates the average level or intensified trend of a group of observed values, and calculated with the following formula:

$$Mean = \frac{\sum x}{n}$$

$x$  indicates the observed value and  $n$  indicates the sample size.

#### (2) Standard deviation

Standard deviation indicates the variation of a group of observed values, where the smaller the standard deviation, the smaller the variation. Standard deviation is indicated by  $Sd$  and

calculated with the following formula:

$$Sd = \sqrt{\frac{\sum x^2 - \frac{(\sum x)^2}{n}}{n-1}}$$

### (3) Percentile

Percentile is commonly used when the frequency distribution of the variables is not normal. If all the observed values are arranged in sequence from small to large, the values at the positions of 1~100 percent of all the observed values may be called 1~100 percentile respectively. It is indicated by Px and calculated with the following formula:

$$Px = X\% \times (n+1)$$

### (4) t - Test

Calculated with the following formula:

$$t = \frac{|M_1 - M_2|}{\sqrt{S_{m1}^2 + S_{m2}^2}}$$

$M_1$  represents the mean of index 1 and  $M_2$  represents the mean of index 2;  $S_{m1}$  is the standard error of measurements (SEM) of index 1 and  $S_{m2}$  is the standard error of measurements of index 2.  $S_m$  (standard error) is calculated with the following formula:

$$S_m = \frac{Sd}{\sqrt{n}}$$

Table 2-8 Degree of freedom ( $n^{\circ}$ ) =  $n_1 + n_2 - 2$ . Significance of the difference is determined by the t-value as follows:

| t                         | P           | Significance of difference           |
|---------------------------|-------------|--------------------------------------|
| $< t (n^{\circ}) 0.05$    | $> 0.05$    | No significant difference            |
| $\geq t (n^{\circ}) 0.05$ | $\leq 0.05$ | Of significant difference (*)        |
| $\geq t (n^{\circ}) 0.01$ | $\leq 0.01$ | Of large significant difference (**) |

Note: “\*\*\*”  $P < 0.01$ , “\*”  $P < 0.05$ .

When sample size  $n \geq 1000$ ,

if  $t < 1.96$ ,  $P > 0.05$  indicates no significant difference between the two tested average.

if  $2.58 > t \geq 1.96$ ,  $P \leq 0.05$  indicates significant differences found between the two tested average.

if  $t \geq 2.58$ ,  $P \leq 0.01$  indicates large significant differences found between the two tested average.

### (5) Proportion

$$\text{Proportion} = \frac{\text{Number of Positive Samples}}{\text{Total number of sample examined}} \times 100\% \text{ (or } 1000\text{‰)}$$

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### (6) Significance test for proportion

#### a. Significance test for the difference between sampling proportion and total proportion

When the observed samples are of fairly large number, the frequency distribution of the sampling proportion appears to be close to normal distribution. The difference significance of regularity test proportion of normal distribution may be applied and it is not necessary to check the t-value table. The standard error of proportion may be obtained from calculation according to total proportion, and then calculate how many times the difference between sampling proportion and total proportion are to the standard error, which is called  $u$  and its formula is:

$$u = \frac{|P - \pi|}{S_p} = \frac{|P - \pi|}{\sqrt{\frac{\pi(1-\pi)}{n}}}$$

in which:  $P$  — sample proportion  
 $\pi$  — proportion tested against  
 $S_p$  — standard error

#### b. Significance test for the difference between two proportions

The calculation formula is:

$$u = \frac{|P_1 - P_2|}{S(P_1 - P_2)} = \frac{|P_1 - P_2|}{\sqrt{P(1-P)(\frac{1}{n_1} + \frac{1}{n_2})}}$$

in which:  $P_1, P_2$  — respective positive proportion of both samples  
 $S(P_1 - P_2)$  — the difference in standard error of the two proportions  
 $P$  — sum of the positive proportion of the two groups  
 $n_1, n_2$  — two sample sizes

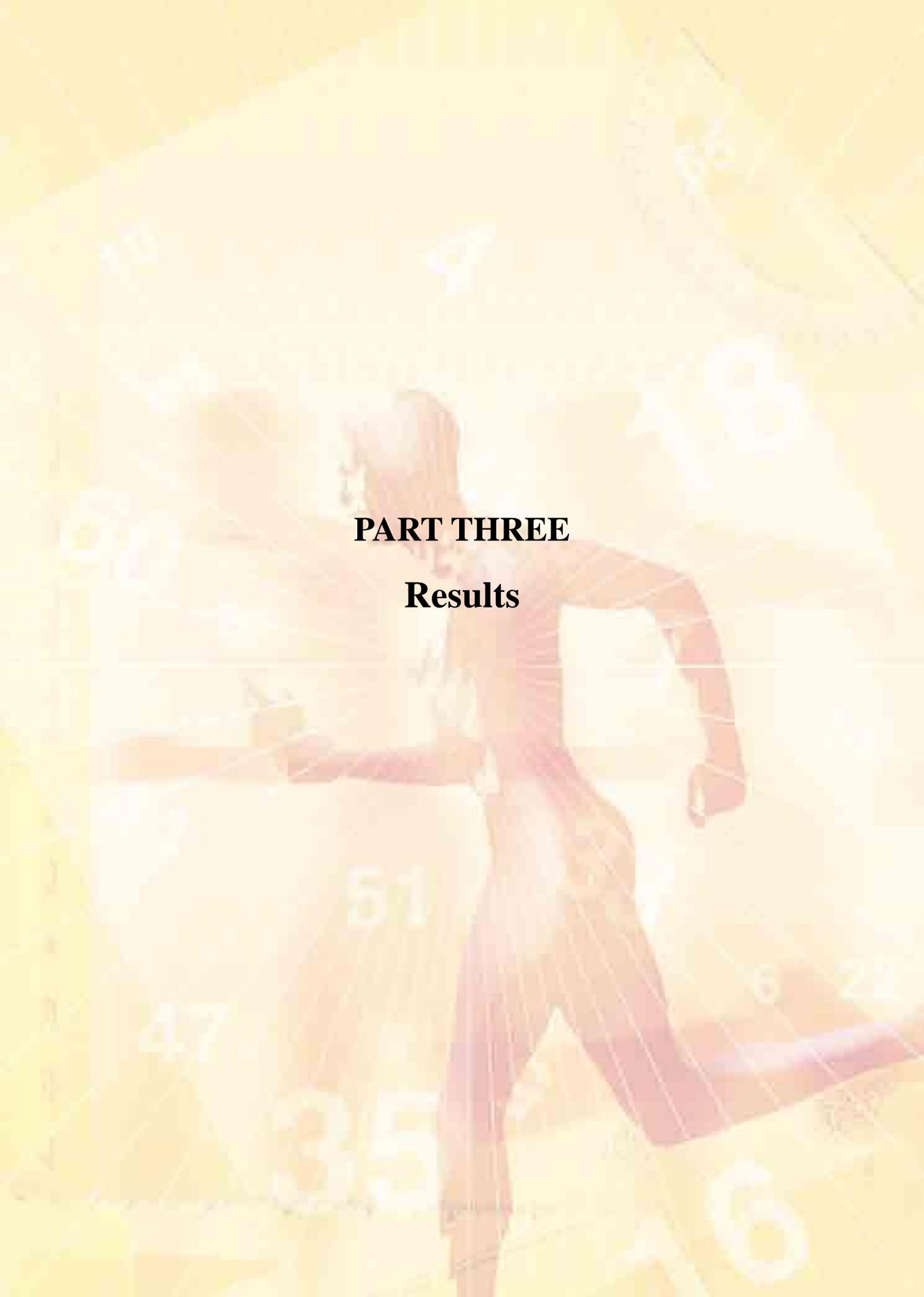
Table 2-9 |U|, P and the Difference Significance

| U      | P      | Significance of Difference           |
|--------|--------|--------------------------------------|
| < 1.96 | > 0.05 | No significant difference            |
| ≥ 1.96 | ≤ 0.05 | Of significant difference (*)        |
| ≥ 2.58 | ≤ 0.01 | Of large significant difference (**) |

Note: “\*\*”P < 0.01, “\*” P < 0.05

### 2.5.2.5 Statistics Tools

SPSS10.1 Statistical Package Software was used for statistic analysis.



**PART THREE**

**Results**

## PART THREE

### Results

According to the basic criteria for the subjects and the methods of sampling, 10,477 valid subjects were included in this study. Table 3-1 showed the sample size in each age group.

Table 3-1 Sample size in each age category

| Gender       | Young children | Children and adolescents (students) | Adults      | Seniors    |
|--------------|----------------|-------------------------------------|-------------|------------|
| Male         | 613            | 2777                                | 1590        | 200        |
| Female       | 431            | 2562                                | 2018        | 286        |
| <b>Total</b> | <b>1044</b>    | <b>5339</b>                         | <b>3608</b> | <b>486</b> |

### 3.1 Young Children

#### 3.1.1 Basic Information of the Subjects

Young children were divided into two groups according to gender, and then further classified into age groups differed by one year, altogether having 8 groups in the young children category.

From Paróquia de Nossa Senhora de Fátima (north), 310 subjects (176 boys and 134 girls) were selected from two sampling sites: Keang Peng School (kindergarten) and Hou Kong Middle School (attached kindergarten). From Paróquia de Santo António and Paróquia de S. Lázaro (central), 395 subjects (250 boys and 145 girls) were selected from Pui Ching Middle School (kindergarten) and Chan Sui Ki Perpetual Help College (branch school). From Paróquia da Sé Catedral and Paróquia de S.Lourenço (south), 339 subjects (187 boys and 152 girls) were drawn from Pooi To Middle School (branch school of Praia Grande) (kindergarten) and Estrela do Mar School (kindergarten). Table 3-1-1 showed the sample sizes of each age group, table 4-1-1-1 showed the distribution of kindergartens and other sampling sites and table 4-1-1-2 showed the proportion of subjects in each community.

Table 3-1-1 Sample size in each age group

| Age group (year) | 3          | 4          | 5          | 6          |
|------------------|------------|------------|------------|------------|
| boys             | 159        | 191        | 165        | 98         |
| girls            | 96         | 113        | 132        | 90         |
| <b>Total</b>     | <b>255</b> | <b>304</b> | <b>297</b> | <b>188</b> |

Among the 1044 subjects, 93.3% of the boys and 89.8% of the girls were born in Macao, followed by Chinese Mainland, Hong Kong and other countries (regions) (table 4-1-1-1-3).

93% of the boys and 96.1% of the girls went to full day kindergarten, whereas about 4~7% of the young children went to half day kindergarten or did not attend kindergarten (table 4-1-1-1-4). The daily life of over 2/3 of the young children was under the parents' care and 1/3 was under the care of the elderly or baby-sitters. The proportion of young children under the direct care of their own parents increased with age (table 4-1-1-1-5).

**3.1.2 Lifestyle**

Information regarding birth, feeding patterns, habits, types of physical exercises involved and occurrence of diseases were examined in the young children category.

**3.1.2.1 Birth and feeding patterns**

Our study showed that infants with normal birth accounted for 86.4%, while those of premature and post term birth accounted for 7.8% and 5.8% respectively. No significant difference in gestational age at birth was found between genders or among age groups (table 4-1-1-1-6).

The average birth weight of the young children category was  $3.3 \pm 0.52$  kg, ranging from 2.4 kg to 4.2 kg. The average birth weight of the boys and girls were  $3.3 \pm 0.54$  kg and  $3.2 \pm 0.48$  kg, respectively. No significant difference in birth weight was seen between genders or among age groups (table 4-1-1-1-7).

The average birth length of the young children category was  $49.3 \pm 2.70$  cm, ranging from 43.5 cm to 53.0 cm. The average birth length of the boys and girls were  $49.4 \pm 2.99$  cm and  $49.1 \pm 2.19$  cm, respectively. No significant difference in birth length was found between genders or among age groups (table 4-1-1-1-8).

The feeding patterns included breast feeding, formula feeding and mix feeding. Percent of young children who were formula-fed, breast-fed or a combination of both (mix feeding) within the first four months after birth were 66.7%, 10.1% and 23.2%, respectively. Percent of boys (69.2%) who were formula-fed was significantly higher than that of girls (63.3%) ( $P < 0.05$ ). No significant difference in feeding patterns was observed among age groups of 3~6 (table 4-1-1-1-9, figure 3-1-1).

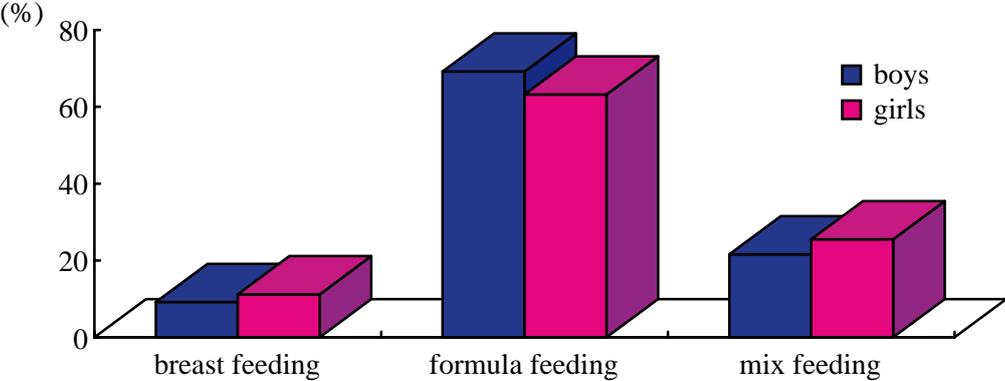


Figure 3-1-1 Proportion of different feedings

### 3.1.2.2 Habits

Information about habits that were examined included accumulated hours of daily sleeping (included nap time), average accumulated daily hours of outdoor playing, average daily hours of indoor activities such as watching TV, video and playing computer games and participation in extracurricular activities (hobby class).

Our study showed that the percent of young children who slept for 8-10 hours/day, more than 10 hours/day and less than 8 hours/day were 72.3%, 25.6% and 2.1%, respectively. No significant difference in sleeping hours was found between genders. The percent of young children with more than 10 hours of daily sleeping decreased gradually while the percent of young children with less than 8 hours of daily sleeping time increased as age increased (table 4-1-1-1-10, figure 3-1-2).

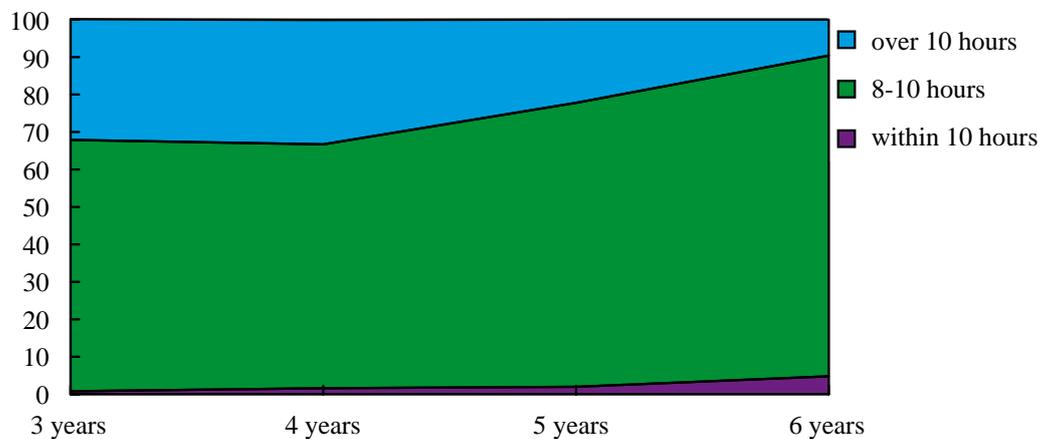


Figure 3-1-2 Sleeping hours (%)

The accumulated hours of outdoor playing referred to the total time that the young children spent outdoors playing, game time and doing exercise and sports activities. Young children who spent 30 minutes ~1 hour daily in outdoor playing accounted for the highest proportion (40.2%), followed by those spending less than 30 minutes (about 25%), 1~2 hours (about 25%) and more than 2 hours (10.2%) outdoors playing. No gender difference in the accumulated hours of outdoor playing was seen, but significant difference was found among age groups ( $P < 0.01$ ). As age increased, the percent of young children spending more than 1 hour in outdoor playing declined, while those spending less than 1 hour increased gradually (table 4-1-1-1-11, figure 3-1-3).

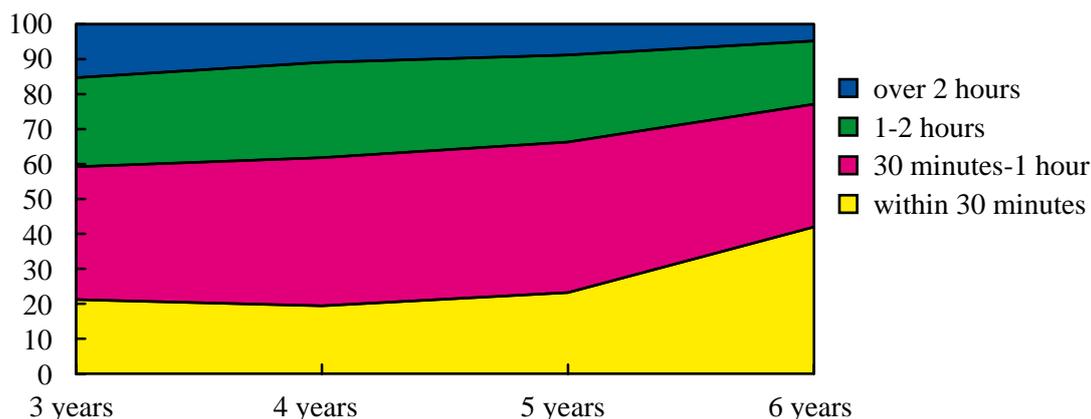


Figure 3-1-3 Proportion of average daily hours in outdoor activities (%)

Percent of young children spending less than 30 minutes, 1~2 hours, 2~3 hours and over 3 hours on watching TV, video and playing computer games daily were 10.7%, 30.3%, 34.8%, 18.1% and 6.1%, respectively. No significant difference in the hours of indoor activities was seen between genders or among different age groups (table 4-1-1-1-12).

Young children participating in extracurricular activities (hobby class) accounted for 46.5%, with 29.1%, 12.2% and 5.2% of the young children participated in one, two and three extracurricular activities, respectively. Young children who participated in music and dancing classes accounted for the highest proportion (18.1%), followed by those participating in drawing and calligraphy classes (15.5%), tutoring class (12.9%) and sports activities (9.3%). The proportion of young children that participated in various extracurricular activities was shown in table 4-1-1-1-13.

The proportion of young children participated in extracurricular activities (hobby class) differed significantly among different age groups ( $P < 0.01$ ), with increasing proportion of young children participating in extracurricular activities as age increased. The percent of young children involved in extracurricular activities at 3, 4, 5 and 6 years old were 22.4%, 39.6%, 58.1% and 72.3% (figure 3-1-4).

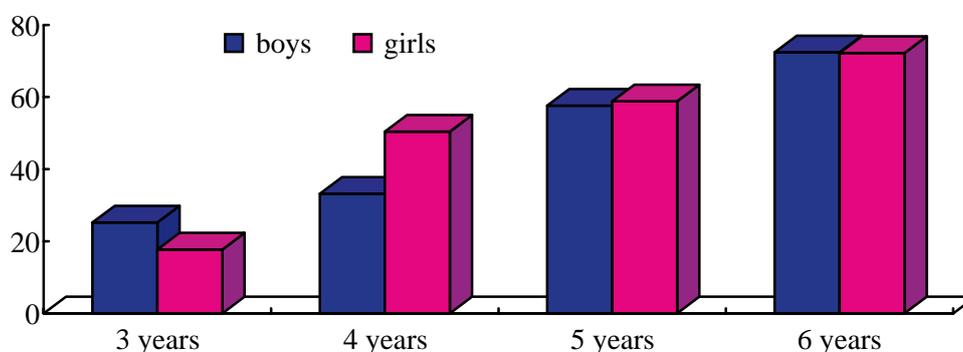


Figure 3-1-4 Proportion of participation in hobby classes (%)

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### 3.1.2.3 Physical exercise

Information about physical exercises such as, hobby class, clubs and individual exercise that the young children participated outside kindergarten was investigated. Successively bicycling (28.8%), ball games (19.3%), swimming (18.9%), gymnastics (16.7%) and dancing (13.5%) were the top five sports with highest participation. The most popular sport for boys and girls was different. Bicycling had the highest participation (33.0%) in boys, while dancing accounted for the highest participation (28.8%) in girls. The percentage of young children participated in other sports were rather low (figure 3-1-5, figure 3-1-6).

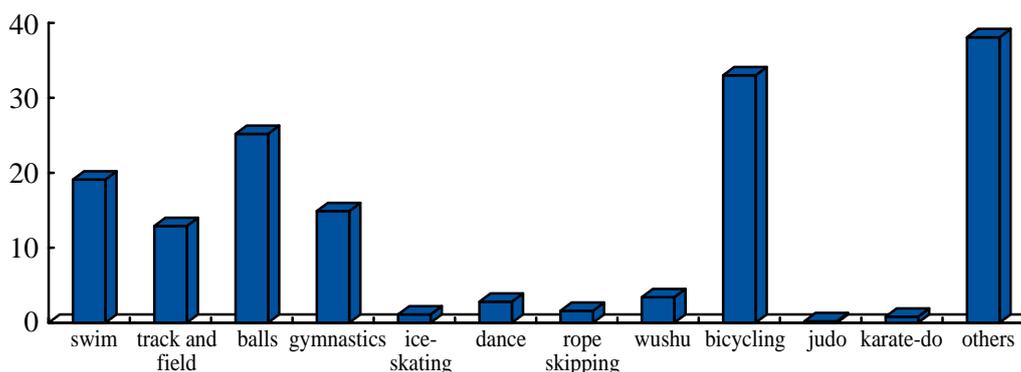


Figure 3-1-5 Proportion of young children (boys) participating in physical exercises (%)

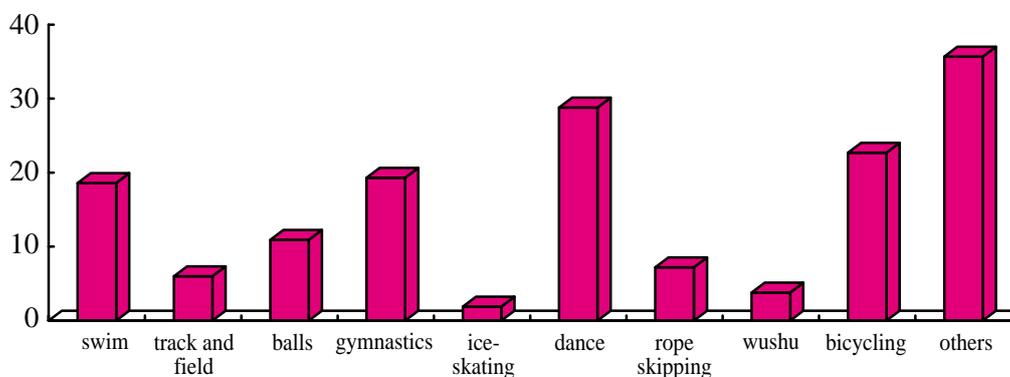


Figure 3-1-6 Proportion of young children (girls) participating in physical exercises (%)

The proportion of young children participating in various sports among different age groups did not differ. Sports with higher participation were mostly bicycling, ball games, swimming, gymnastics and dancing, etc. The percent of young children participating in physical exercises increased with age, but tended to decrease slightly at age 6 (table 4-1-1-1-14).

### 3.1.2.4 Occurrence of diseases

Our study showed that 95.6% of the young children had a cold or fever in the past one year. Among these young children, 60.3% had three times or more cold or fever in the past one

year. No gender difference in the number of times catching a cold was observed, but significant difference was found among different age groups ( $P < 0.01$ ). Generally speaking, the percent of young children catching a cold three times a year declined gradually as age increased (table 4-1-1-15, figure 3-1-7).

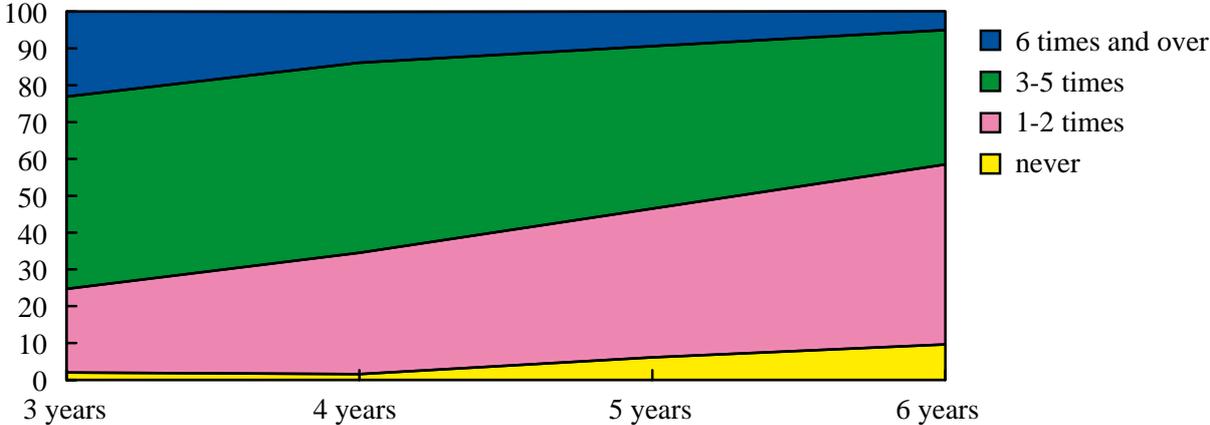


Figure 3-1-7 Proportion of catching a cold or fever in the past one year (%)

Young children diagnosed with some kinds of illness by the hospital accounted for 23.8%. The percentage of young children being diagnosed with illness at age 3, 4, 5 and 6 were 23.1%, 25.7%, 24.9% and 19.7%, respectively, with the 6 years old children having the lowest percentage. Diseases with high occurrence were chronic bronchitis (42.7%), pneumonia (27.8%) and incidental injury (10.5%). No significant difference in the occurrence of diseases between genders or among age groups were observed (table 4-1-1-16 and table 4-1-1-17).

### 3.1.3 Anthropometric Measurements

#### 3.1.3.1 Length indexes

Height and sitting height are two indexes commonly used to reflect the normal physical characteristic of human body. Height shows mainly the level of longitudinal growth of human skeleton, and sitting height shows the trunk length.

The height, sitting height and foot length of young children, both boys and girls, increased with age. The height of boys and girls ranged from 99.3~117.6 cm and 97.1~116.8 cm, respectively. Sitting height ranged from 57.3~64.5 cm and 56.1~63.9 cm for boys and girls, respectively. As for the foot length, it ranged from 15.6~18.1 cm and 15.1~17.9 cm for boys and girls, respectively (table 4-1-2-1-18, table 4-1-2-1-19 and table 4-1-2-1-20).

Height, sitting height and foot length of boys were higher than that of girls, with significant difference in height and sitting height at 3 and for foot length at 3~5 years old ( $P < 0.05$ ) (figure 3-1-8, figure 3-1-9 and figure 3-1-10).

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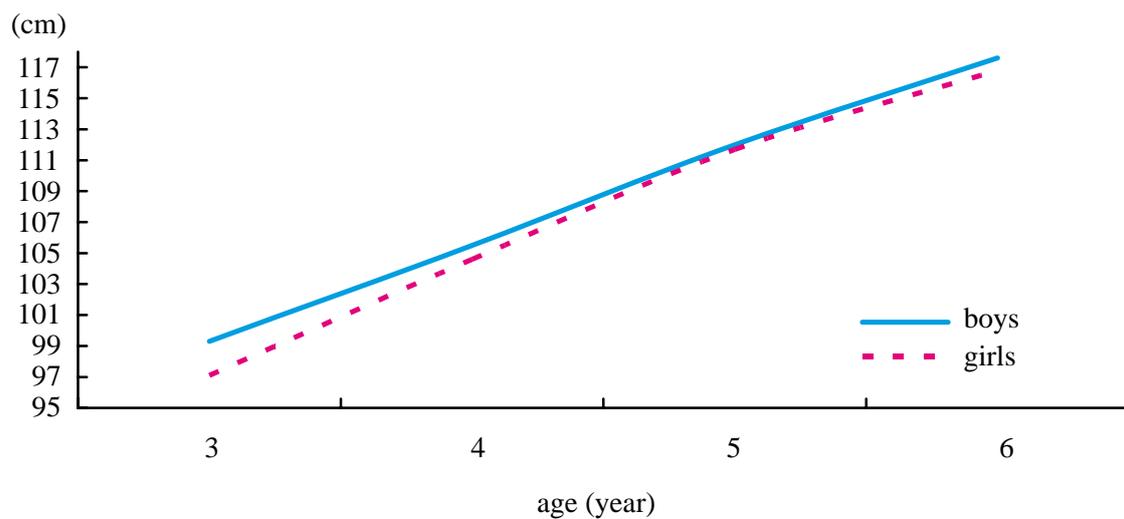


Figure 3-1-8 Height

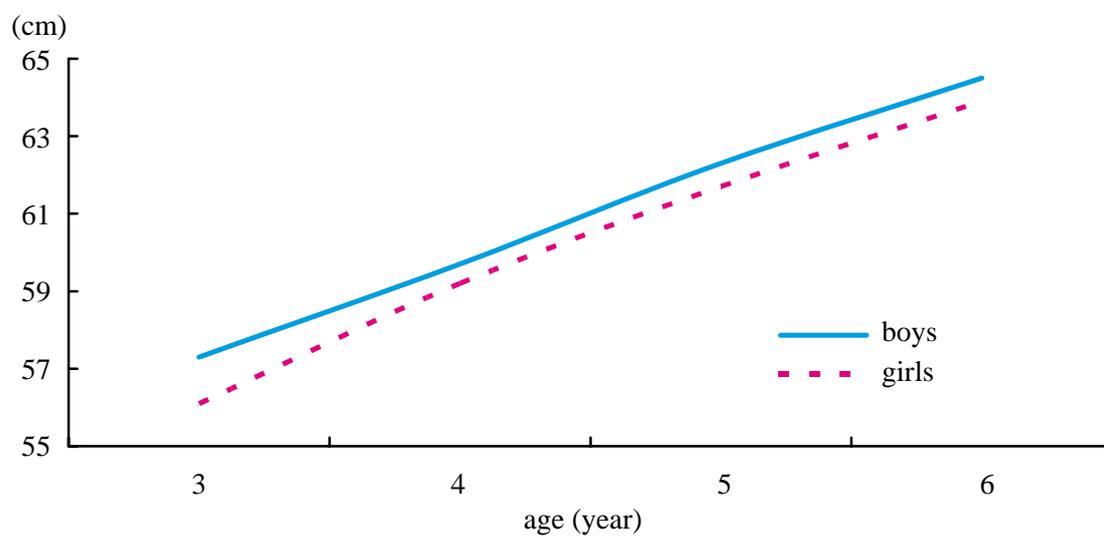


Figure 3-1-9 Sitting height

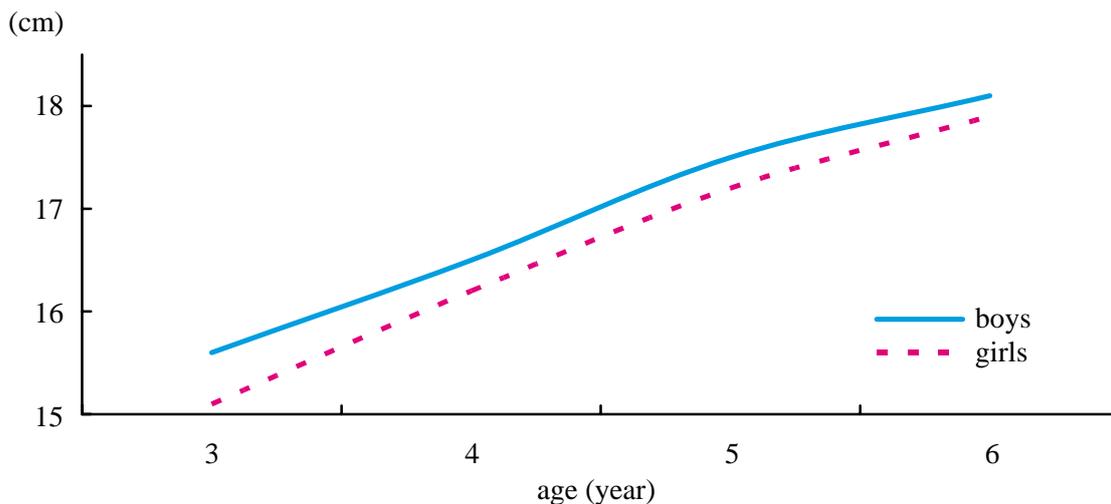


Figure 3-1-10 Foot length

### 3.1.3.2 Weight and BMI

Weight and BMI are indexes commonly used to reflect the physical characteristic of human body. Weight shows how much the human body weighs, while  $BMI = \text{weight (kg)} / \text{height (m)}^2$ , is used to evaluate the obesity level.

The weight of young children increased with age, and the weight of the boys and girls ranged from 15.3~21.4 kg and 14.6~20.8 kg, respectively (table 4-1-2-1-21, figure 3-1-11).

BMI of the young children was fairly stable, and varied very little as age increased. BMI of the boys and girls ranged from 15.4~15.5 and 15.2~15.5, respectively (table 4-1-2-1-22, figure 3-1-12).

The average weight and BMI of boys and girls were quite closed to each other, without significant difference.

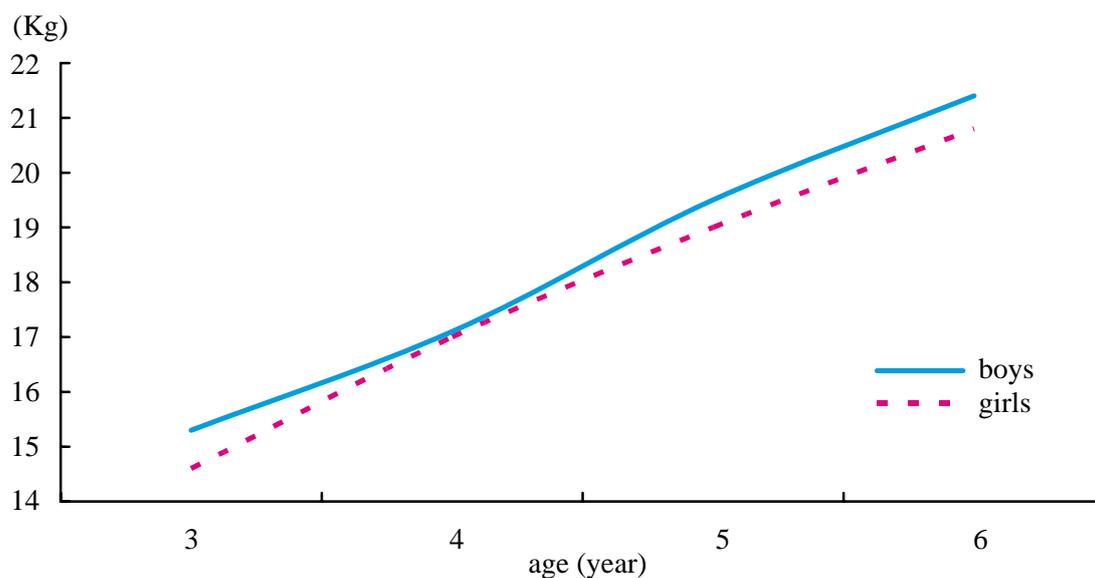


Figure 3-1-11 Weight

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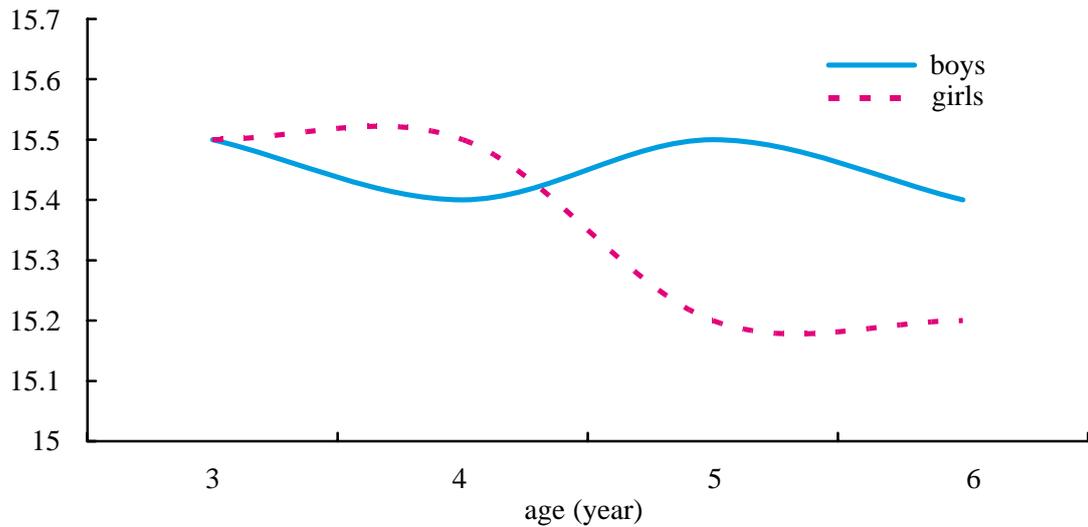


Figure 3-1-12 BMI

According to the weight for height standard of young children from the “Physical Fitness Standards for the Chinese Citizens”, 6.3%, 7.9%, 11.5% and 15.3% of the young children (boys) aged 3~6 were overweight, and 1.1%, 7.1%, 5.3% and 2.2% of the young children (girls) aged 3~6 were overweight, with the highest and lowest percent of overweight at age 4 and 3, respectively. Boys had significantly higher percent of overweight than girls at all ages ( $P < 0.05$ ), except at age 4 (table 4-1-2-1-23, figure 3-1-13).

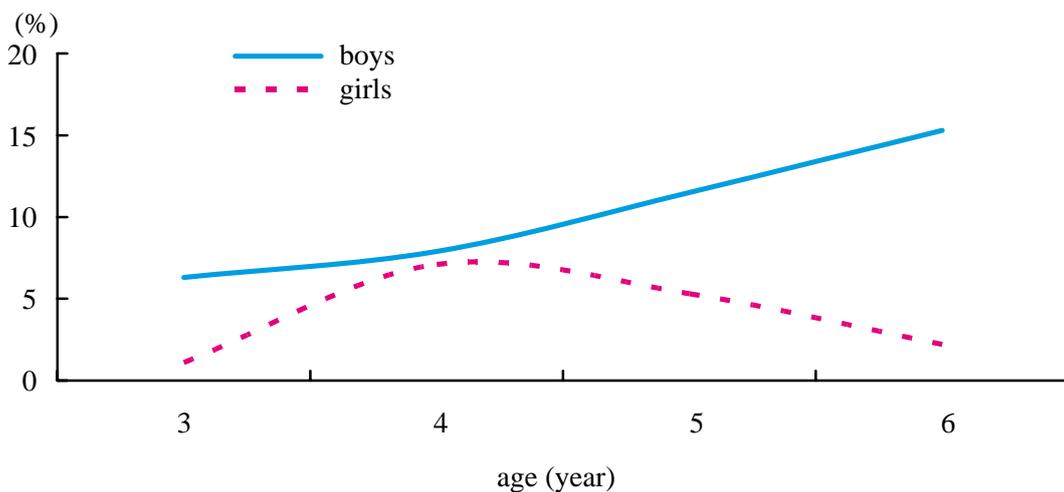


Figure 3-1-13 Proportion of overweight

**3.1.3.3 Circumference indexes**

Circumference index is commonly used to reflect mainly the amount of subcutaneous fat and muscles. Chest circumference reflects mainly the size of chest, the growth of chest muscles and can also reflect the body shape and the development of the respiratory system. Waist circumference mainly indicates the abdominal subcutaneous fat and the growth of muscles. Hip circumference reflects the hip skeleton, muscle and subcutaneous fat.

The chest, waist and hip circumference of the young children increased with age. The average chest circumference of the boys and girls ranged from 51.5~57.0 cm and 50.5~55.8 cm, respectively. The average waist circumference of the boys and girls ranged from 48.0~53.1 cm and 46.4~51.0 cm, respectively and the average hip circumference ranged from 52.3~60.0 cm and 51.6~59.2 cm, respectively (table 4-1-2-1-24, table 4-1-2-1-25 and table 4-1-2-1-26).

The WHR (Waist-Hip Ratio) of the young children declined as age increased. WHR of the boys and girls ranged from 0.894~0.916 and 0.862~0.900, respectively (table 4-1-2-1-27).

The average chest, waist circumference and the WHR of boys were higher than those of the girls, with chest and waist circumference ranging from 0.8~1.3 cm and 1.5~2.1 cm, respectively. WHR ranged from 0.016~0.027. Significant difference in chest, waist circumference and WHR were found between genders ( $P < 0.05$ ). No significant difference in hip circumference was found between genders (figure 3-1-14, figure 3-1-15, figure 3-1-16 and figure 3-1-17).

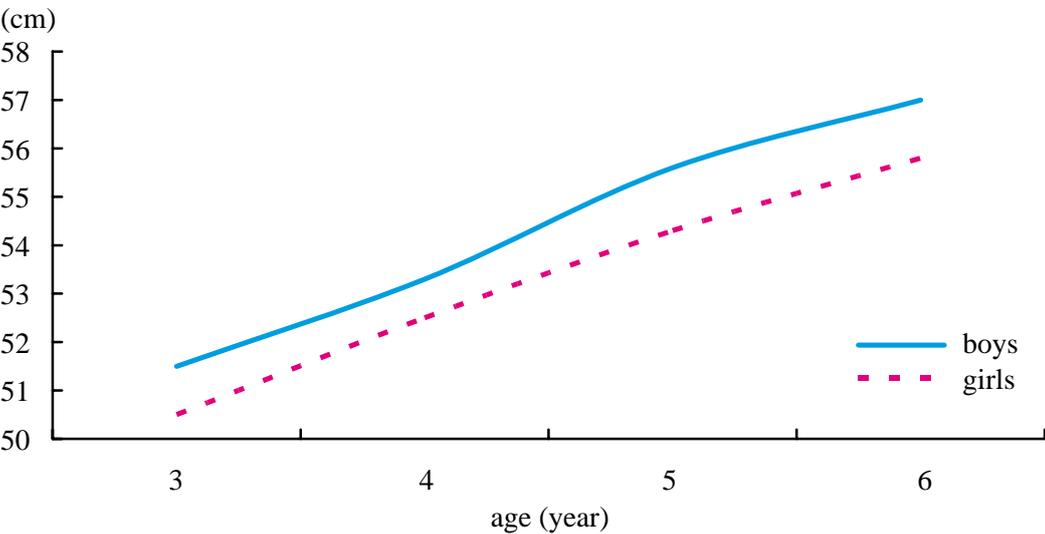


Figure 3-1-14 Chest circumference

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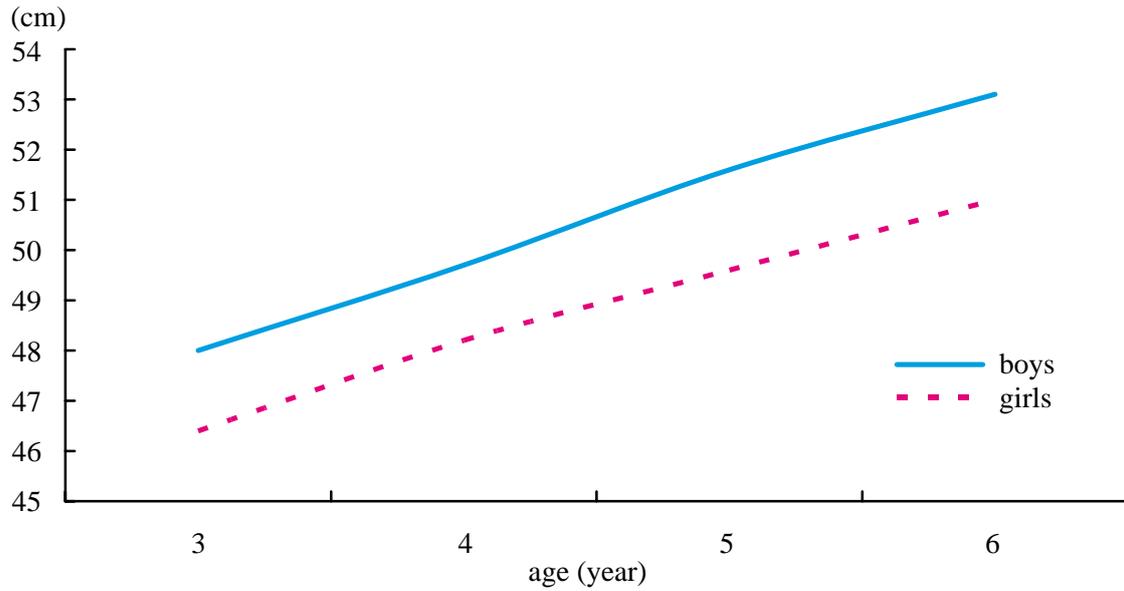


Figure 3-1-15 Waist circumference

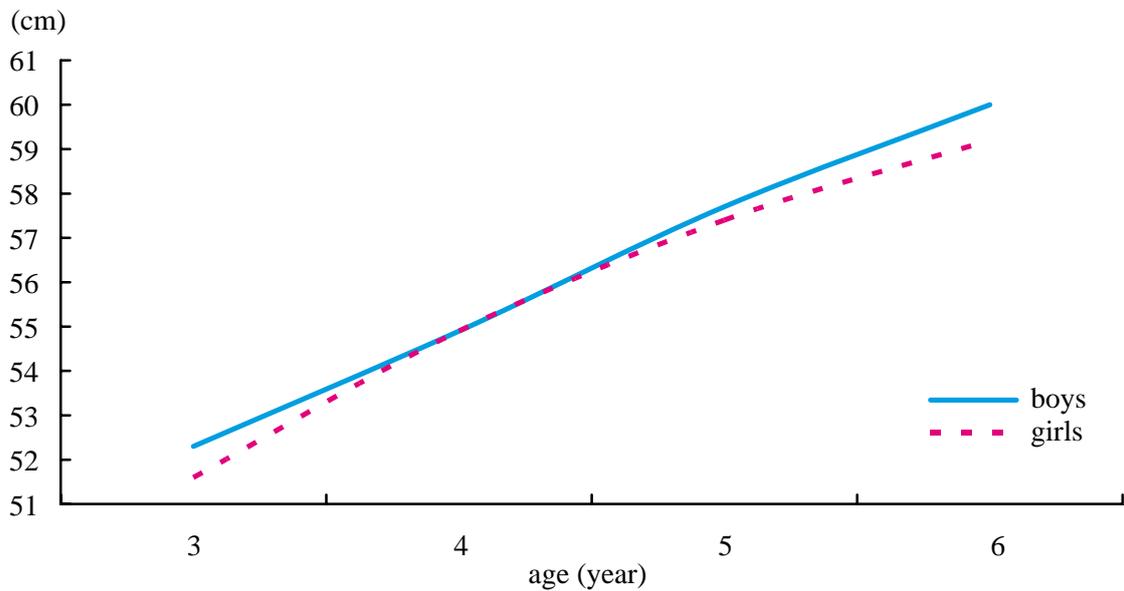


Figure 3-1-16 Hip circumference

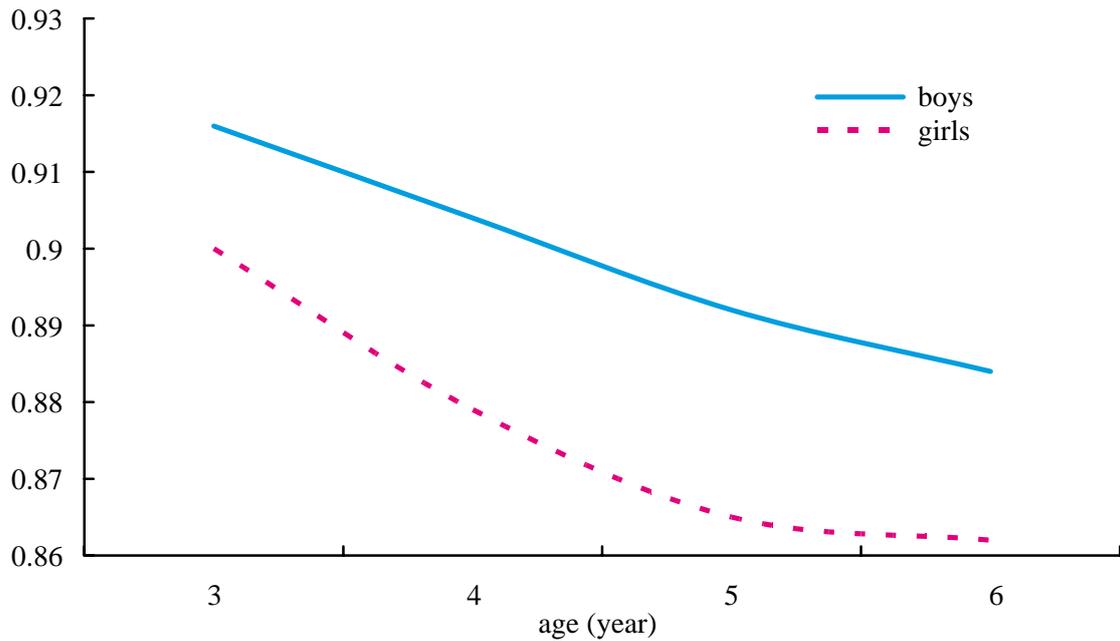


Figure 3-1-17 WHR

### 3.1.3.4 Width indexes

Shoulder and pelvis width are two important indexes used to reflect body shape and horizontal growth of humans. Shoulder and pelvis width of boys and girls increased with age. The average shoulder widths of boys and girls ranged from 22.4~25.6 cm and 21.9~25.0 cm, respectively. The average pelvis widths of the boys and girls ranged from 16.5~18.6 cm and 15.5~17.6 cm, respectively (table 4-1-2-1-28 and table 4-1-2-1-29).

The average shoulder and pelvis width of the boys were higher than that of the girls, the difference in shoulder width ranged from 0.3~0.6 cm and the difference in pelvis width ranged from 1.0~1.1 cm. With the exception of shoulder width at age 5, significant gender difference in shoulder and pelvis width of young children were observed ( $P < 0.05$ ) (figure 3-1-18 and figure 3-1-19).

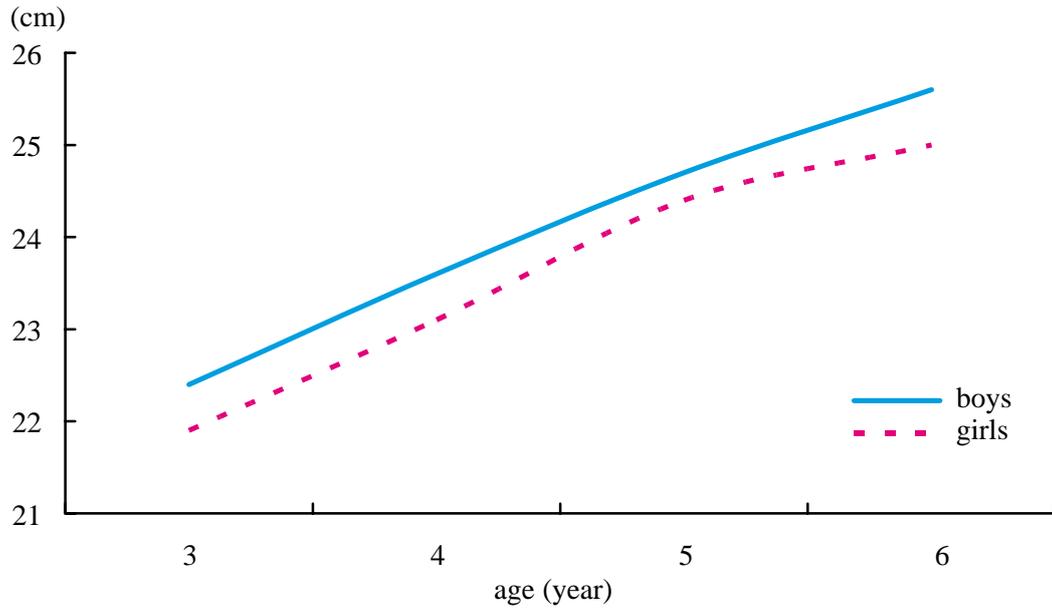


Figure 3-1-18 Shoulder width

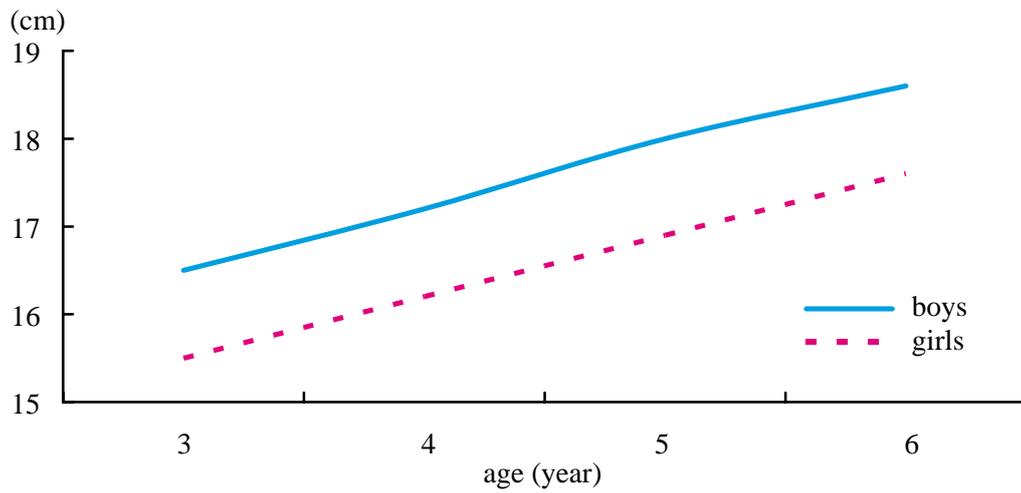


Figure 3-1-19 Pelvis width

### 3.1.3.5 Body composition

Skinfold thickness reflects mainly the amount of subcutaneous fat and is often used to evaluate body composition.

The skinfold thickness of the upper arm, subscapular and abdominal of boys increased with age, whereas the skinfold thickness of these three sites were relatively stable in girls, without apparent increase. The average skinfold thickness of the upper arm for boys and girls were 8.4~9.9 mm and 10.0~10.5 mm, respectively. The average subscapular skinfold thickness for the boys and girls were 5.7~6.5 mm and 7.6~8.4 mm, respectively, and the average abdominal skinfold thickness were 5.3~8.1 mm and 7.0~8.5 mm, respectively (table 4-1-2-1-30, table 4-1-2-1-31 and table 4-1-2-1-32).

The skinfold thickness of all three sites of the girls were larger than that of the boys, and the rate of increase tended to slow down with age. The difference in the upper arm, subscapular and abdominal skinfold thickness between boys and girls ranged from 0.2~1.7 mm, 1.1~2.7 mm and 0.4~2.6 mm, respectively, with significant difference at age 3, 4 and 5 ( $P < 0.01$ ) (figure 3-1-20, figure 3-1-21 and figure 3-1-22).

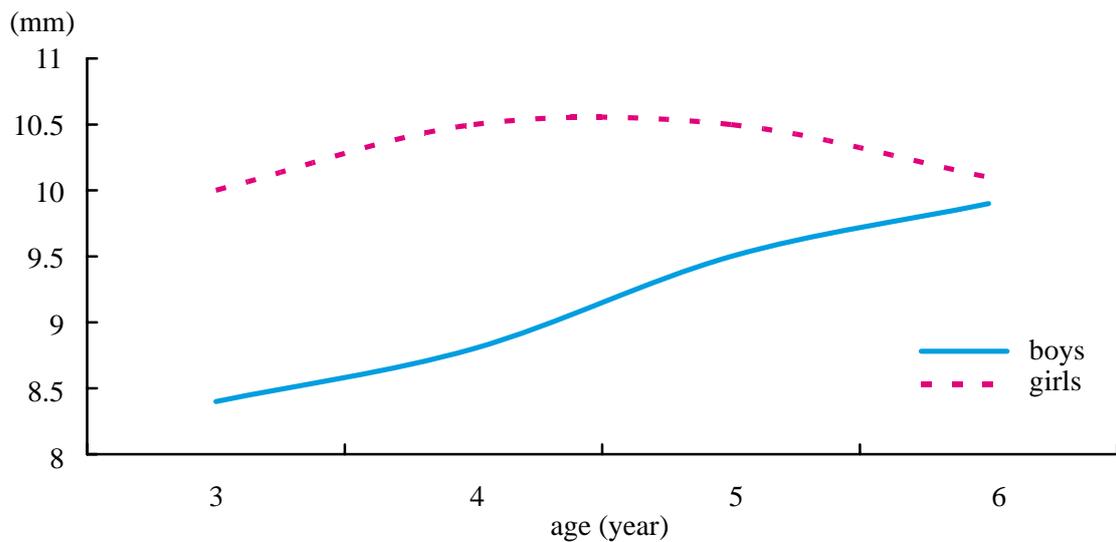


Figure 3-1-20 Upper arm skinfold thickness

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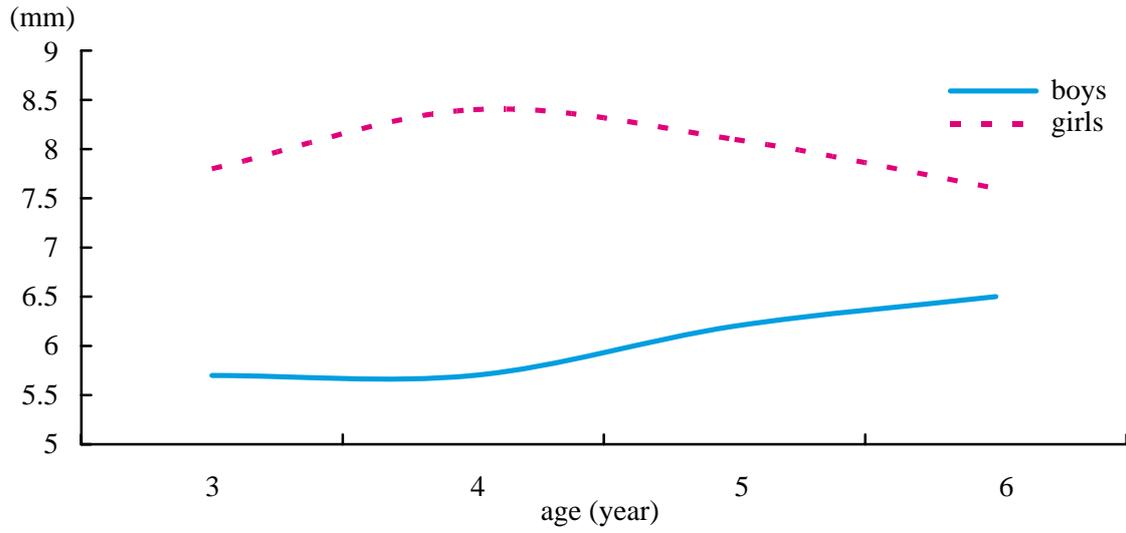


Figure 3-1-21 Subscapular skinfold thickness

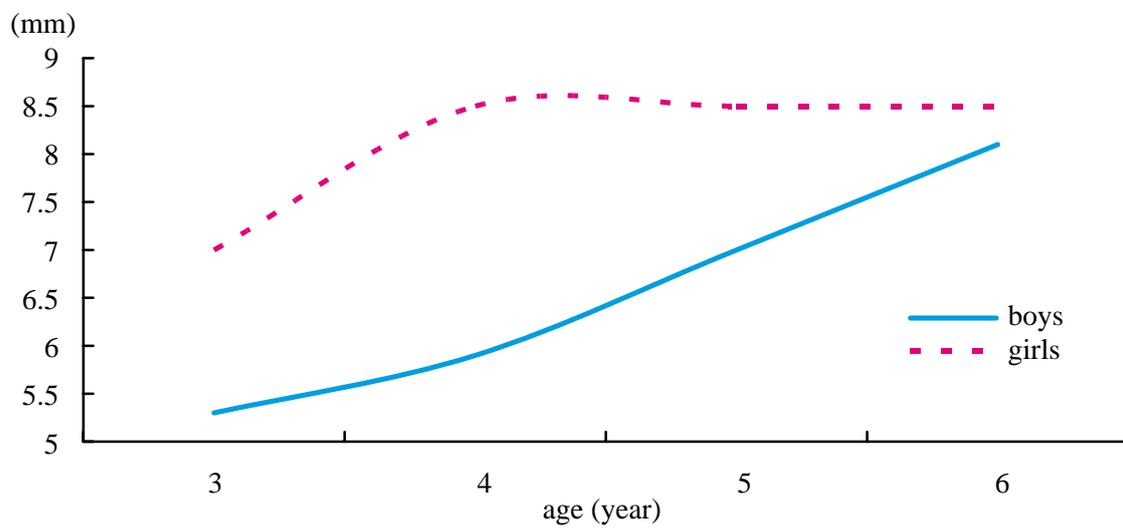


Figure 3-1-22 Abdominal skinfold thickness

### 3.1.4 Physiological Function

Resting heart rate can be used to reflect the physiological function of young children. The average heart rate at rest of 3~6 years old young children tended to decline as age increased. The average resting heart rate of the boys and girls ranged from 106.8~97.1 times/minute and 106.7~96.5 times/minute, respectively. No significant gender difference in the resting heart rate was seen (table 4-1-2-1-33, figure 3-1-23).

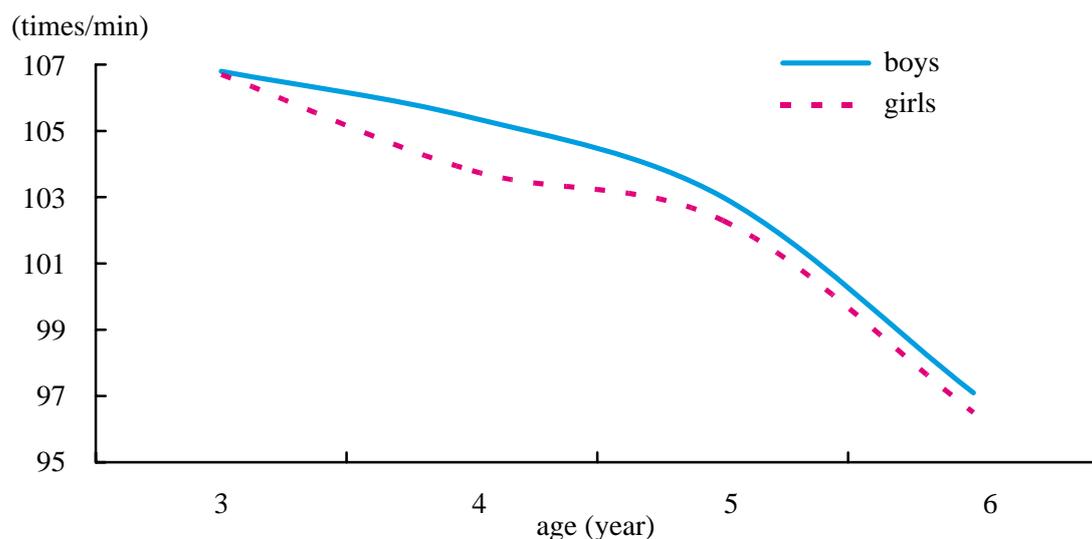


Figure 3-1-23 Resting heart rate

### 3.1.5 Physical Fitness

#### 3.1.5.1 Speed and sensitivity

Speed and sensitivity were reflected by 10-m shuttle run and successive jump with both feet.

The average time for the 10-m shuttle run and successive jump with both feet for boys ranged from 6.6~9.9 seconds and 6.7~13.4 seconds, respectively, whereas as the girls' 10-m shuttle run and successive jump ranged from 6.9~10.1 seconds and 6.8~12.8 seconds, respectively (table 4-1-2-1-34 and table 4-1-2-1-35). Significant difference in the 10-m shuttle run and successive jump of the same gender was seen among different age groups. There was significant difference in the 10-m shuttle run between genders in all age groups except age 4 ( $P < 0.05$ ), while there was no significant difference in successive jump between genders. The results showed that the speed and sensitivity of the young children tended to increase with age, and the increase was nearly 40%. The sensitivity of boys and girls were quite similar, but boys had faster speed than that of girls (figure 3-1-24 and figure 3-1-25).

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Figure 3-1-24 10-meter shuttle run

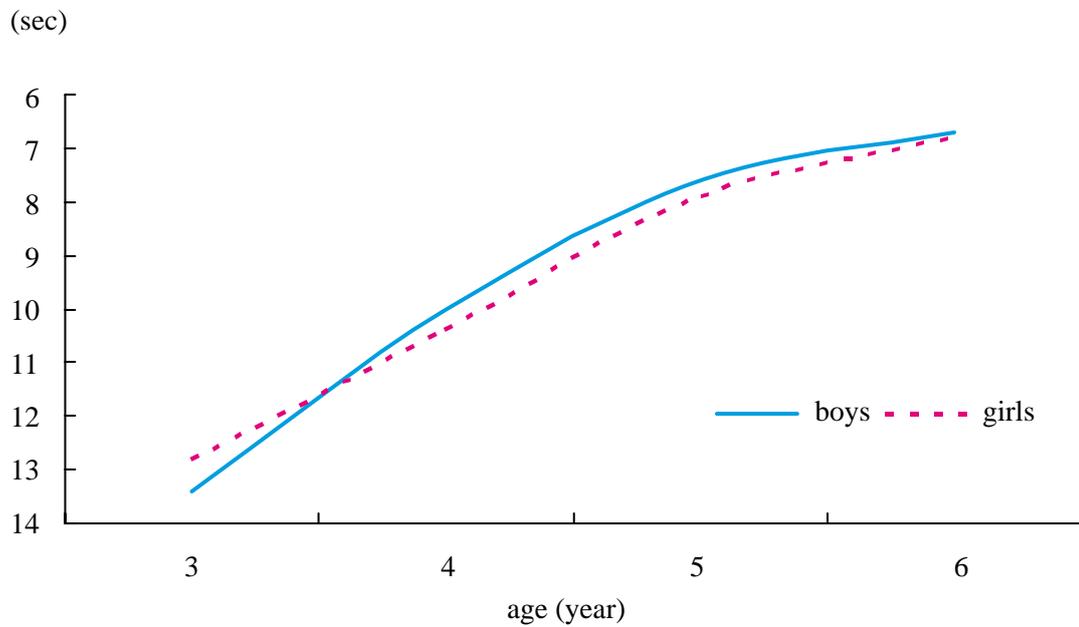


Figure 3-1-25 Successive jump with both feet

### 3.1.5.2 Strength

The strength of young children was reflected by standing long jump and tennis ball distance throw.

The average standing long jump and tennis ball distance throw of the boys ranged from 55.6~99.7 cm and 2.9~6.0 m, respectively, and those of the girls ranged from 51.5~92.4 cm and 2.4~5.3 m (table 4-1-2-1-36 and table 4-1-2-1-37). There was a significant difference in standing long jump and tennis throw of the same gender among different age groups. The average standing long jump and tennis throw of the boys were significantly higher than that of the girls in all age groups ( $p < 0.05$ ), and the difference between genders tended to increase with age. The results showed that the strength of both boys and girls tended to increase with age. The strength of the boys was better than that of the girls, and the difference between boys and girls tended to increase with age (figure 3-1-26 and figure 3-1-27).

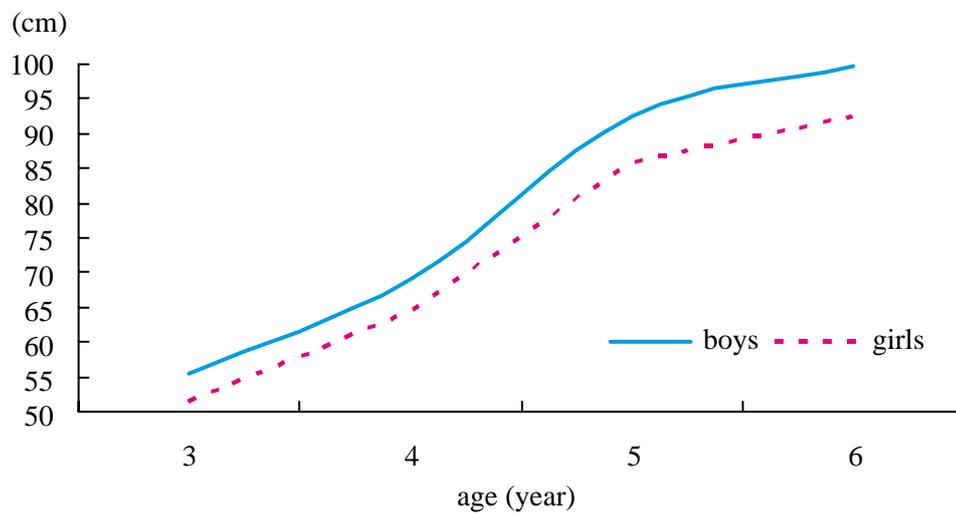


Figure 3-1-26 Standing long jump

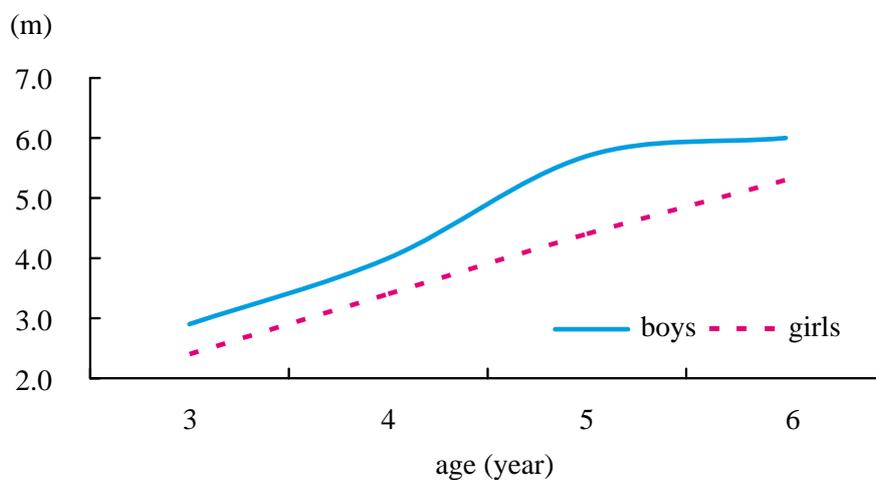


Figure 3-1-27 Tennis ball distance throw

### 3.1.5.3 Flexibility

Sit and reach reflected flexibility.

The average sit and reach of the boys and the girls ranged from 4.5~8.0 cm and 6.4~9.4 cm, respectively (table 4-1-2-1-38). Young children at aged 3 had the highest flexibility and young children at aged 6 had the lowest flexibility, which indicated that flexibility declined as age increased, with a nearly 40% decrease. The rate of decrease accelerated after age 5.

The change in flexibility at different ages varied in the same way in both boys and girls. Girls had a significantly higher flexibility than boys in all age groups ( $P < 0.05$ ), which indicated that the flexibility of girls was apparently better than that of the boys (figure 3-1-28).

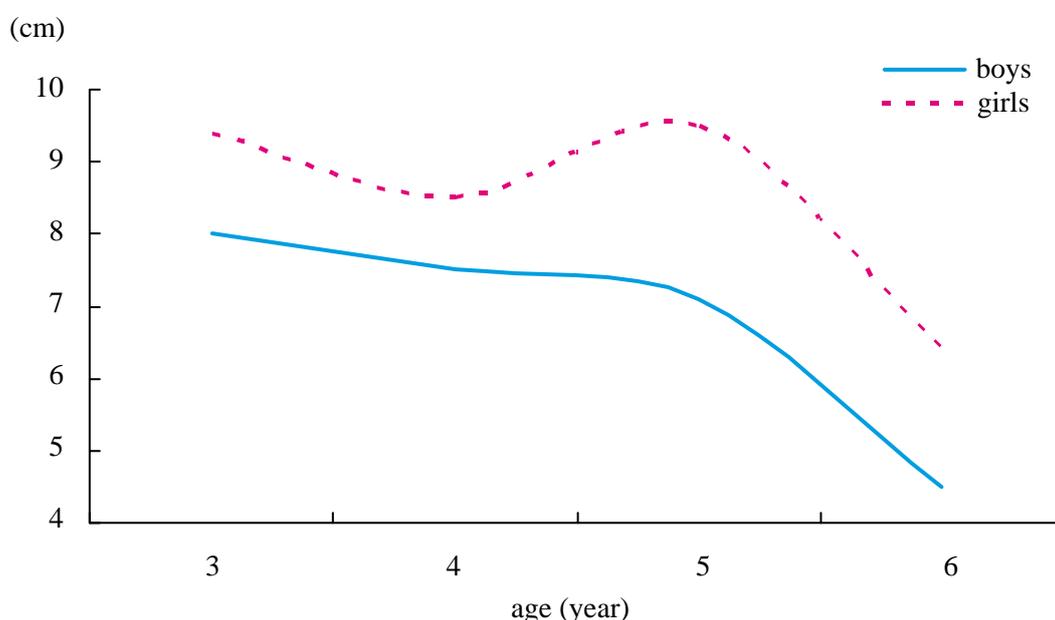


Figure 3-1-28 Sit and reach

### 3.1.5.4 Balance

The balance of young children was reflected by walking on balance beam. The means of walking on balance beam and the time necessary to finish walking on balance beam were used to examine the balance of the young children.

In terms of the means of walking on balance beam, 85.5% and 85.4% of the boys and girls, respectively, at age 3 were able to finish the test normally. At age 6, there were still 1% of the boys not able to finish the test normally (table 3-1-2).

In terms of the normal completion time, the average time for the boys and the girls ranged from 17.2~5.7 sec and 15.4~5.9 sec, respectively. Young children at age 3 took the longest time

and young children at age 6 took the shortest completion time, indicating that the balance ability improved as age increased, and the increase was 2 fold. The improvement was greater between age 3~5 (figure 3-1-29).

The balance ability of boys and girls tended to vary in the same way, without a significant gender difference, which showed that the balance ability of boys and girls was basically the same (figure 3-1-29, table 4-1-2-1-39).

Table 3-1-2 Means of walking on balance beam (%)

| Gender | Means of walking       | Age (year) |      |       |       | Total       |
|--------|------------------------|------------|------|-------|-------|-------------|
|        |                        | 3          | 4    | 5     | 6     |             |
| Boys   | Moving forward         | 85.5       | 94.8 | 99.4  | 99.0  | <b>94.3</b> |
|        | Moving slowly sideways | 13.2       | 4.2  | 0.6   | 1.0   | <b>5.1</b>  |
|        | Unable to finish       | 1.3        | 1.0  | 0.0   | 0.0   | <b>0.7</b>  |
| Girls  | Moving forward         | 85.4       | 90.3 | 100.0 | 100.0 | <b>94.2</b> |
|        | Moving slowly sideways | 11.5       | 9.7  | 0.0   | 0.0   | <b>5.1</b>  |
|        | Unable to finish       | 3.1        | 0.0  | 0.0   | 0.0   | <b>0.7</b>  |

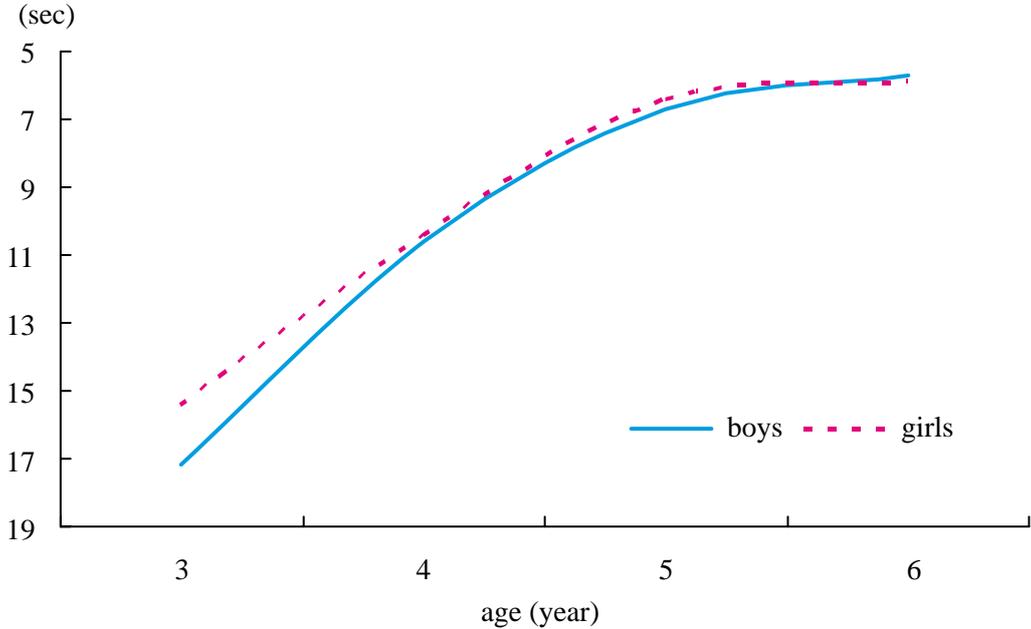


Figure 3-1-29 Time to finish walking on balance beam (normally)

### 3.1.6 Health

#### 3.1.6.1 Occurrence of decayed primary teeth

The occurrence of decayed primary teeth were reflected by the proportion of decayed primary teeth (%), the proportion of decayed primary teeth loss (%), the proportion of decayed primary teeth filled (%) and total proportion of primary teeth decayed, loss and filled (%). The proportion of primary teeth decayed (d) means the percentage of subjects having primary teeth decayed. And the proportion of primary teeth loss (m) referred to the percentage of primary teeth loss before the age of substitution due to caries. The proportion of decayed primary teeth filled (f) referred to the percentage of primary teeth filled. The proportion of primary teeth decayed, loss and filled (dmf) referred to the total percentage of decay, loss and filled of primary teeth.

The proportion of boys and girls having primary teeth decay increased gradually with age. The change in the proportion of primary teeth decay was similar in boys and girls. A significant difference in the proportion of primary teeth decay was found among different age groups ( $P < 0.05$ ). From age 3 to age 6, there were 26.4% and 25.6% increase of primary teeth decay in boys and girls, respectively. The change in primary teeth decay ranged from 19.5%~45.9% and 17.7%~43.3% in boys and girls, respectively (table 4-1-2-1-40).

No gender difference in the proportion of primary teeth decay was observed. The proportion of primary teeth decay was higher in boys than girls at 3 and 6 years old. However, girls had 5.5% more primary teeth decay than boys at age 4, but the difference was not significant (figure 3-1-30).

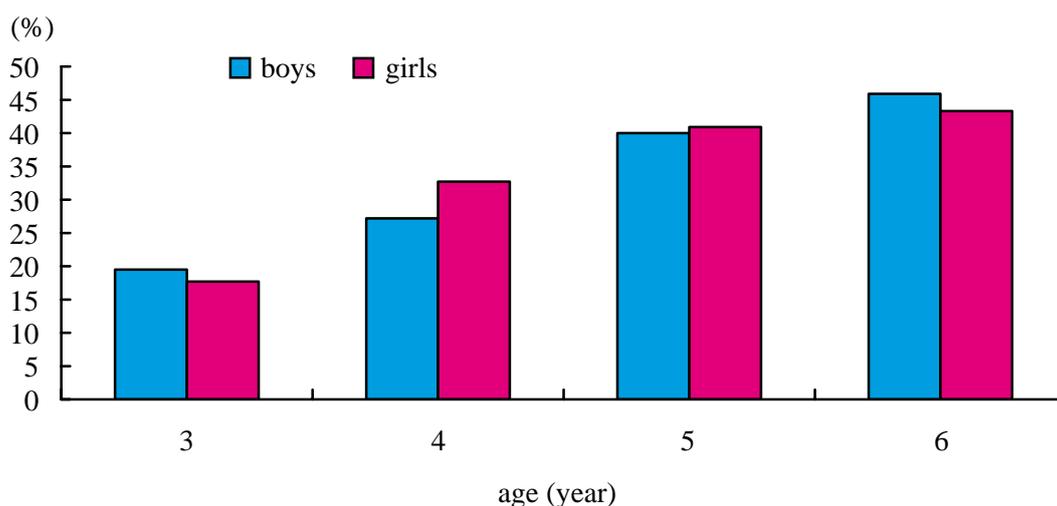


Figure 3-1-30 Proportion of primary teeth decay

The proportion of primary teeth filled (f) for boys were 4.2%, 1.8% and 5.1% at age 4, 5 and 6, respectively, with an irregular change with age. For girls, the proportion of primary teeth filled (f) reached 5.6% at age 6, with stable increase from age 4. The proportion of primary teeth filled for boys and girls ranged from 0.0%~5.1% and 0.0%~5.6%, respectively (table 4-1-2-1-40).

With the exception of age 4, girls had a higher percentage of primary teeth filled than boys. On the other hand, percentage of primary teeth filled in boys was 3.3% higher than girls at age 4 (figure 3-1-31).

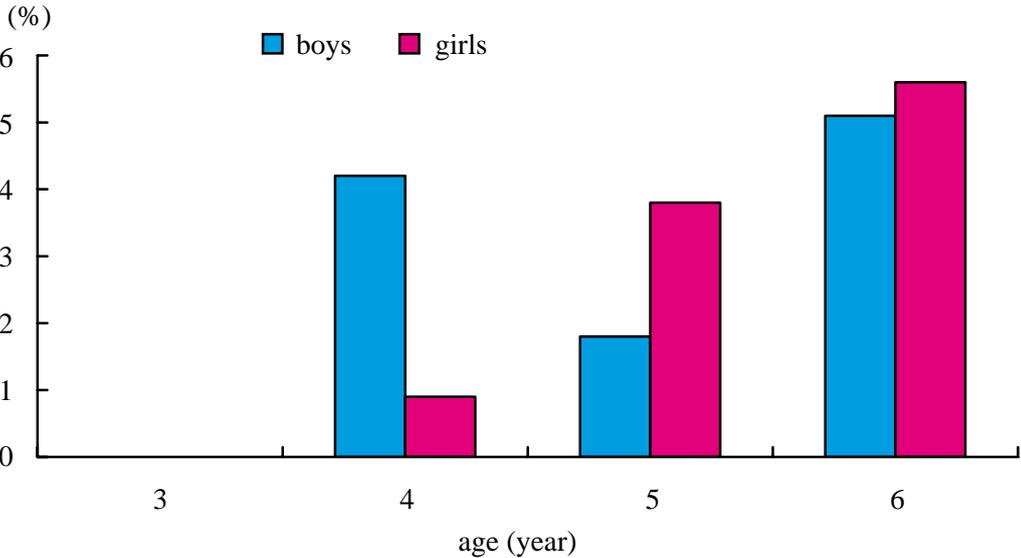


Figure 3-1-31 Proportion of primary teeth filled

The proportion of decayed primary teeth loss (m) increased with age, with the highest proportion at age 6. The proportion of decay primary teeth loss was 9.2% and 3.3% for boys and girls. Significant difference among age groups was found ( $P < 0.05$ , especially for boys). The rate of increase was larger in boys than girls. The change in decayed primary teeth loss with age ranged from 0.0%~9.2% and 0.0%~3.3% for boys and girls, respectively. At age 6, boys had a significantly higher percent of decayed primary teeth loss than girls ( $P < 0.05$ ), but no significant gender difference was observed in other age groups (table 4-1-2-1-40, figure 3-1-32).

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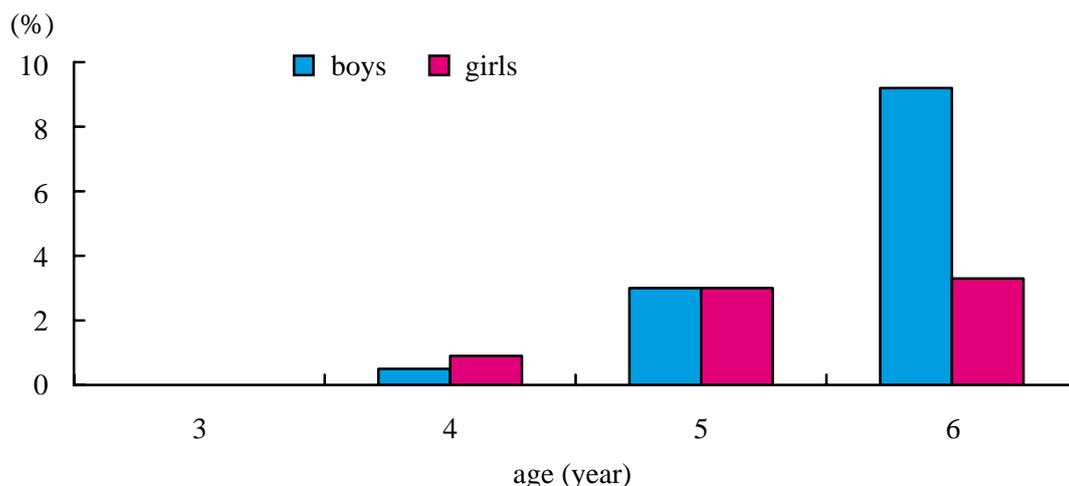


Figure 3-1-32 Proportion of decayed primary teeth loss

The proportion of primary teeth decay, loss and filled (dmf) increased significantly with age ( $P < 0.05$ ). The proportion for boys increased from 19.5% at age 3 to 51.0% at age 6, with an increase of 31.5%. The trend of change in girls was similar to that of the boys. The proportion of dmf increased gradually from 17.7% at age 3 to 45.6% at age 6, with an increase of 27.9%. The increase in dmf was about 10%~15% with increased age, except for girls at age 6. The percent dmf ranged from 19.5%~51.0% and 17.7%~45.6% for boys and girls, respectively.

There was a gender difference in the percent dmf at age 6 ( $P < 0.05$ ) and the difference was 5.4% (figure 3-1-33, table 4-1-2-1-40).

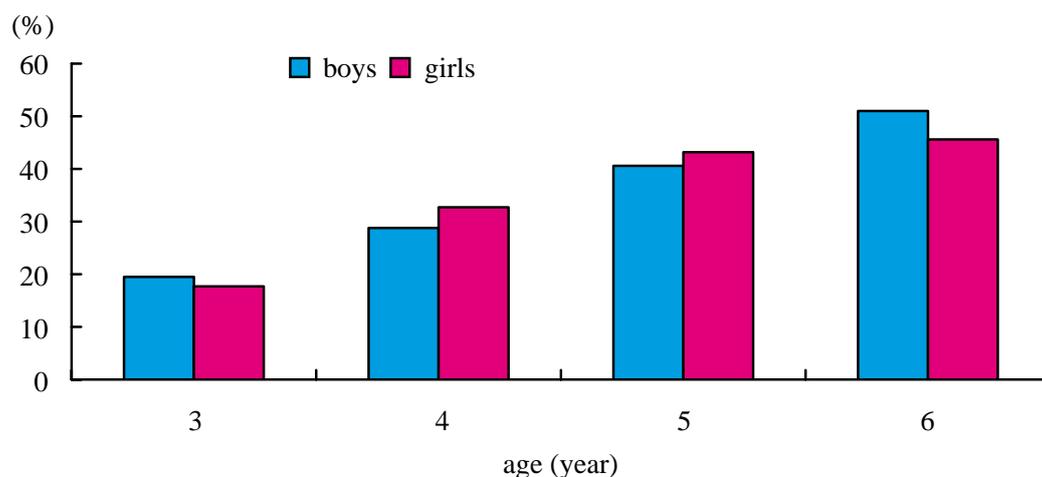


Figure 3-1-33 Proportion of decay, loss and filled (dmf)

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### 3.1.6.2 Occurrence of decayed permanent teeth

The occurrence of decayed permanent teeth was reflected by the proportion of decayed permanent teeth (%), loss of decayed permanent teeth (%), decayed permanent teeth filled (%) and the proportion of permanent teeth decay, loss and filled (%). The proportion of permanent teeth decay (D) referred to the percentage of subjects having decayed permanent teeth. And the proportion of decayed permanent teeth loss (M) referred to the percentage of permanent teeth loss before the age of substitution due to decay. The proportion of decayed permanent teeth filled (F) referred to the percentage of permanent teeth filled. The proportion of permanent teeth decay, loss and filled (DMF) referred to the total percentage of decay, loss and filled of permanent teeth.

The proportion of decay, loss and filled permanent teeth accounted for about 1%~2%, which appeared only at age 6. No gender difference was seen and no occurrence of decayed permanent teeth filled was found (table 4-1-2-1-41).

### 3.1.7 Summary

The anthropometric measurements including height, weight, chest circumference, shoulder width and skinfold thickness increased with age. The rate of increase in height and weight was basically the same. BMI remained stable and the increase in waist circumference was slower than the hip circumference. Thus, WHR reduced year after year, with significant characteristic of age. Except for skinfold thickness, all the indexes were significantly higher in boys than girls.

The physiological function tended to be better with increased age, as displayed by declined resting heart rate, but there was no significant gender difference.

The physical fitness improved with increased age. Most physical fitness indexes increased about 40% between age 3 and 6. Among the physical fitness indexes, the balance ability increased the most, with about 2 fold increase. No gender difference in the balance ability and sensibility was found. Girls had better flexibility than boys. Speed and strength were apparently better in boys than girls. The difference between genders tended to increase from age 6.

The percentage of decayed primary teeth increased gradually with age, as displayed by the proportion of primary teeth decay, decayed primary teeth filled (girls), decayed primary teeth loss and dmf. The increase pattern of decayed primary teeth filled with age in boys was not apparent. The regularity of the gender difference in primary teeth decayed was not obvious. The occurrence of decayed permanent teeth appeared only at age 6 (except the proportion of decayed permanent teeth filled).

### 3.2 Children and Adolescents (Students)

#### 3.2.1 Basic Information of the Subjects

The primary and secondary school students were divided into 2 groups according to gender, and then divided into more groups according to age, with one year difference in each group. Altogether there were 26 groups in the primary and secondary student category. The university students were divided into 2 groups according to gender, and then divided into age groups with one year difference, with 8 groups altogether.

As for the primary and secondary school students, 1586 subjects (868 males and 718 females) were drawn from Keang Peng School (primary and secondary school sections), Hou Kong Middle School and its attached primary school in the north area (Paróquia de Nossa Senhora de Fátima). In the central area (Paróquia de Santo António and Paróquia de S. Lázaro), 1554 subjects (758 males and 796 females) were drawn from Pui Ching Middle School and Chan Sui Ki Perpetual Help College. In the south area (Paróquia da Sé Catedral and Paróquia de S.Lourenço), 1441 subjects (795 males and 646 females) were drawn from Pooi To Middle School (branch school of Praia Grande, primary school section and middle school section) and Estrela do Mar School (headquarter and branch school).

As for the university students, 758 subjects (356 males and 402 females) were drawn from ten departments of five universities. The five universities were the University of Macao, Macao University of Science and Technology (Paróquia de Nossa Senhora do Carmo), Macao Polytechnic Institute (Paróquia da Sé Catedral), Kiang Wu Nursing College of Macao (Paróquia de Santo António) and Institute for Tourism Studies (Paróquia de Nossa Senhora de Fátima). Among these subjects, 349 (147 males and 202 females) lived in the north area (Paróquia de Nossa Senhora de Fátima), 231 (107 males and 124 females) lived in the central area (Paróquia de Santo António and Paróquia de S. Lázaro), and 178 (102 males and 76 females) lived in the south area (Paróquia de São Francisco Xavier, Paróquia de Nossa Senhora do Carmo, Paróquia de S.Lourenço and Paróquia da Sé Catedral).

The number of subjects in each age group was shown in table 3-2-1.

The distribution of the subjects and the sampling sites were shown in table 4-2-1-2-1. The proportion of subjects living in each community was shown in table 4-2-1-2-2 (primary and secondary school students) and table 4-2-1-2-3 (university students).

Among the 5339 subjects from primary, secondary schools and universities, 86.5% males and 87.2% females were born in Macao, followed by Mainland China, Hong Kong and other countries (regions). The proportion of subjects born in Macao declined whereas the proportion of subjects born in Mainland China increased as age increased (table 4-2-1-2-4). Besides, 96.6% male and 98.0% female subjects attended full-time lessons whereas the rest attended half-day lessons (table 4-2-1-2-5).

Table 3-2-1 Number of subjects in each age group of the children and adolescents (students) category

| Age group (year) | 6          | 7          | 8          | 9          | 10         | 11         | 12         | 13         | 14         | 15         | 16         | 17         | 18         | 19         | 20         | 21         | 22         | Total       |
|------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| Male             | 173        | 222        | 196        | 193        | 185        | 176        | 188        | 178        | 182        | 179        | 174        | 166        | 162        | 120        | 102        | 99         | 82         | 2777        |
| Female           | 155        | 165        | 150        | 165        | 163        | 151        | 172        | 164        | 151        | 198        | 184        | 167        | 159        | 127        | 98         | 103        | 90         | 2562        |
| <b>Total</b>     | <b>328</b> | <b>387</b> | <b>346</b> | <b>358</b> | <b>348</b> | <b>327</b> | <b>360</b> | <b>342</b> | <b>333</b> | <b>377</b> | <b>358</b> | <b>333</b> | <b>321</b> | <b>247</b> | <b>200</b> | <b>202</b> | <b>172</b> | <b>5339</b> |

### 3.2.2 Lifestyle

In this study, lifestyle information of the children and adolescents (age 6~22) was examined. These included habits, physical education at school, extracurricular physical exercise and the occurrence of disease.

#### 3.2.2.1 Habits

For habits, information regarding the following 7 areas was examined: daily accumulated traveling time and transportation means back and forth from home to school, hours of outdoor activities after school, hours of doing daily homework at home, hours of watching TV, video and playing computer games, average hours of daily sleeping (included nap time) and involvement of extracurricular activities (hobby class) were examined.

The study showed that 61.2% of the students took less than 30 minutes daily in traveling back and forth from home to school, with the highest proportion from 6~12 years old students, which accounted for 69.9% of the students aged 6~12. After age 13, the percentage of students taking 30 minutes~1 hour and 1~2 hours increased, without significant gender difference (table 4-2-1-2-6, table 4-2-1-2-7). The transportation means used was significantly different among age groups ( $P < 0.05$ ). The students aged 6~18 went to and returned from school mainly on foot (60.5%) and by bus (23.2%), with no significant difference between genders. After age 19, most female students went to and returned from school by bus (53.8%) and on foot (23.9%), whereas most male students by motorcycle (40.9%) and bus (36.5%), with a significant difference between genders ( $P < 0.01$ ) (figure 3-2-1, table 4-2-1-2-8, table 4-2-1-2-9).

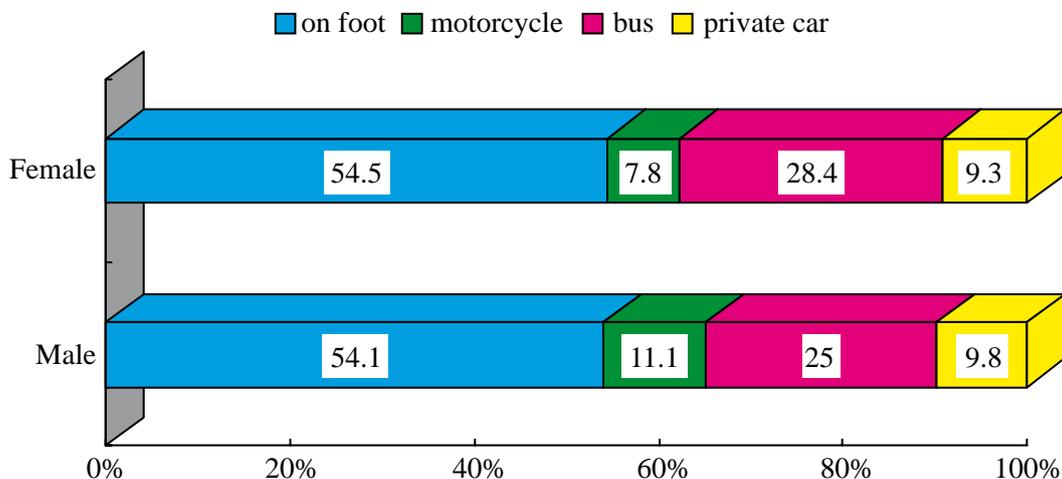


Figure 3-2-1 Proportion of students using different means of transportation to and from schools

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Students spending less than 30 minutes daily in outdoor activities after school accounted for the highest proportion (47.7%), followed by spending 30 minutes~1 hour (28.9%), 1~2 hours (13.8%) and 2 hours or more (9.6%). The proportion of female students spending less than 30 minutes and 30 minutes~1 hour were higher than that of the male students. Significant difference was seen between genders and among age groups ( $P<0.01$ ) (table 4-2-1-2-10, table 4-2-1-2-11).

The proportion of students spending 30 minutes~1 hour daily in doing homework at home accounted for the highest proportion (36.6%), followed by those who spent 1~2 hours (26.1%) and those spending less than 30 minutes (22.9%). The proportion of subjects spending 2~3 hours and 3 hours or more were rather low (9.2% and 5.2%). Among different age groups, the proportion of students aged 6~12 spending less than 30 minutes in doing homework (17.7%) was lower than that of the 13~22 years old students (27.2%) ( $P<0.01$ ). The proportion of aged 6~12 students spending 30 minutes~1 hour (37.9%) and 1~2 hours (28.2%) were higher than the proportion of students aged 13~22 (35.6% and 24.3%) ( $P<0.05$ ). Female students spending less than 30 minutes (19.5%) in doing homework was less than male students (25.9%), while female students spending 1~2 hours or 2 hours and more (27.6% and 16.5%) were more than male students (24.8% and 12.5%) ( $P<0.01$ ) (table 4-2-1-2-12, table 4-2-1-2-13).

Spending 30 minutes~1 hour in watching TV, video and playing computer games accounted for the highest proportion (28.5%), followed by spending 1~2 hours (27.2%) and 2~3 hours (20.9%), with no significant difference between genders. Students aged 6~12 (48.1%) had higher percentage than students aged 13~22 (26.4%) in spending less than 1 hour in watching TV, video and playing computer games. More students aged 13~22 (45.1%) spent over 2 hours in watching TV, video and playing computer games than students aged 6~12 (26.1%) ( $P<0.01$ ) (table 4-2-1-2-14, table 4-2-1-2-15).

Having 8-10 hours average daily sleeping hours (included nap time) accounted for 76.7% of the 6~12 year old students, whereas it accounted for 55.3% and 68.0% in the 13~18 years old and 19~22 years old students, respectively. There was significant gender and age difference in daily sleeping hours. A higher percentage of females had less than 8 hours of daily sleeping than males ( $P<0.01$ ) (table 4-2-1-2-16, table 4-2-1-2-17).

Among our student subjects, 68.4% participated in extracurricular activities (hobby classes) with 31.9%, 27% and 9.5% participating in one, two and three hobby classes, respectively. The proportion of students participated in hobby classes tended to decline as age increased. The proportion of female students participated in hobby class (69.0%) was higher than male students (68.0%), but with no significant difference. There was a significant difference in the types of hobby classes participated by male and female students. Sports exercises accounted for the highest participation, followed by music and dancing, tutoring class, drawing and calligraphy and chess for the male students. For female students, music and dancing accounted for the highest participation, followed by sports exercises, drawing and calligraphy, tutoring class and chess. The order of choices for hobby classes was similar in each age groups, only the proportion was different ( $P<0.01$ ) (figure 3-2-2, figure 3-2-3, table 4-2-1-2-18, table 4-2-1-2-19, table 4-2-1-2-20, table 4-2-1-2-21).

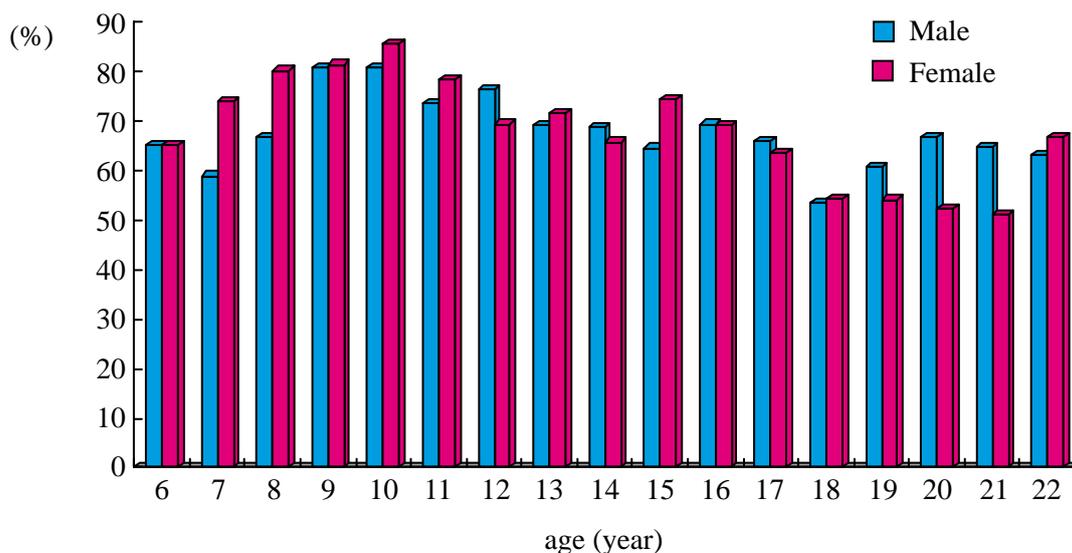


Figure 3-2-2 Proportion of students participating in hobby classes

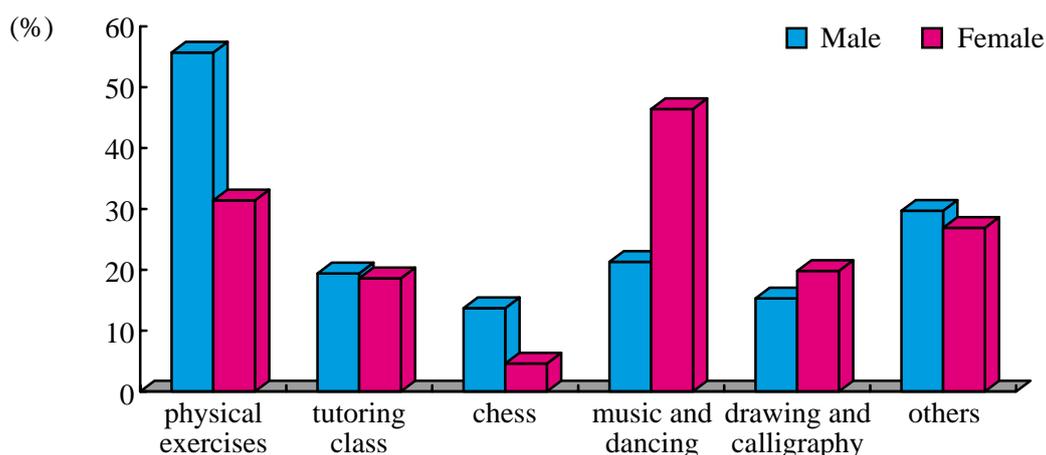


Figure 3-2-3 Proportion of students participating in various types of hobby classes

### 3.2.2.2 Physical education at school

The frequency of having physical education (PE) classes and the exercise intensity of each PE class were examined.

The percentage of aged 6~12 students who had two, one, three, four or more PE classes weekly accounted for 58.4%, 41.0%, 0.4% and 0.2%, respectively. The percentage of aged 13~18 students who had two, one and four or more PE classes weekly accounted for 56.2%, 39.9% and 0.3%, respectively. It is worth to notice that 0.6% of the students aged 16 did not attend PE classes and this phenomenon increased with age. Between age 16 and 18, 7.3% of the students did not attend PE classes, and it accounted for 56.6% in the 19 to 22 years old group. In the 19 to 22 years old group, 29.4%, 13.3% and 0.7% of the students had one, two, four or

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more PE classes per week, respectively. The percentage of the 6~18 years old female students (51.8%) attending PE classes twice per week was significantly less than that of the male students (62.4%) ( $P < 0.01$ ). Whereas the percentage of female students attending PE class only once per week (45.9%) or did not attend at all (2.1%) was significantly higher than that of the male students (35.6% and 1.2%). For students aged 19~22, no significant difference was seen between genders (figure 3-2-4, figure 3-2-5, table 4-2-1-2-22 and table 4-2-1-2-23).

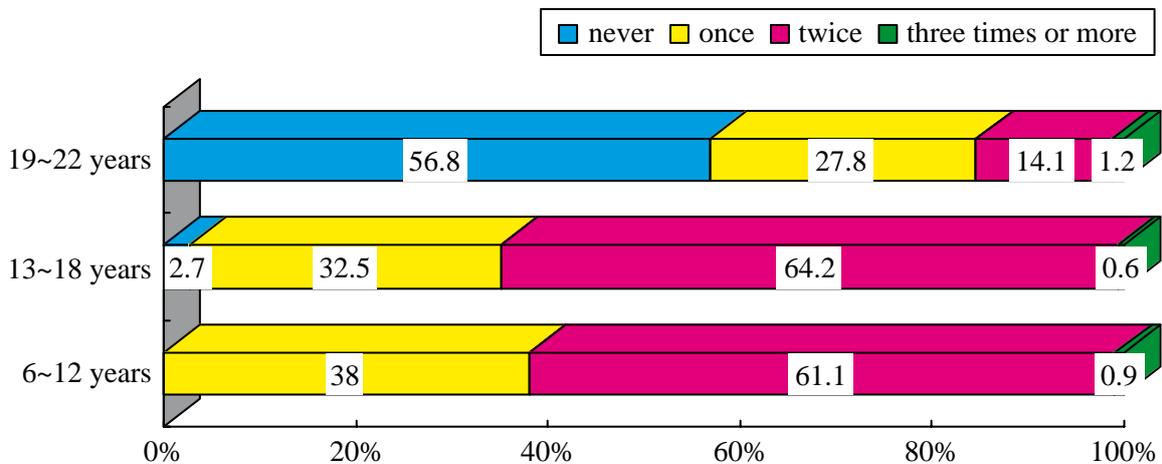


Figure 3-2-4 Proportion of male students having PE classes weekly

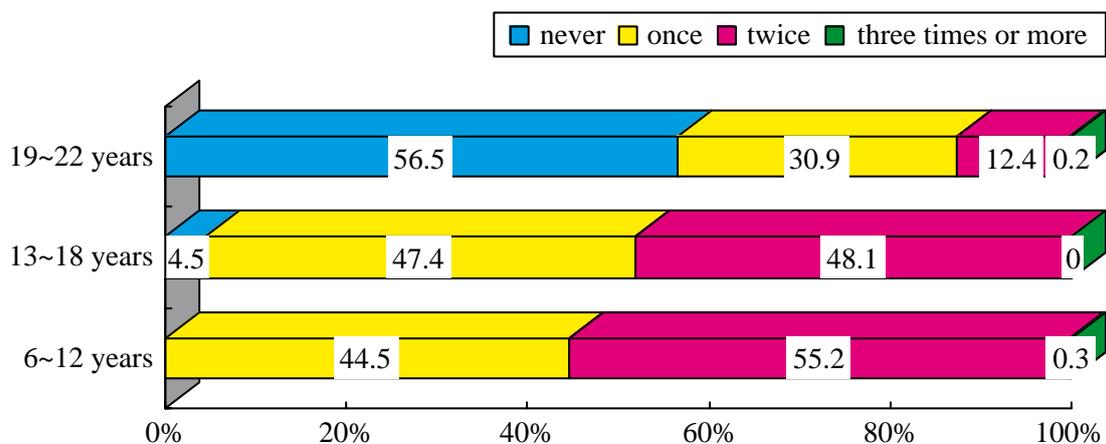


Figure 3-2-5 Proportion of female students having PE classes weekly

Students who were able to reach moderate, light and high exercise intensity during PE classes were 58.8%, 30.3% and 10.9%, respectively. The proportion of students reaching moderate and high exercise intensity increased and students maintaining low exercise intensity decreased as age increased. This change in exercise intensity pattern with age was similar in both male and female students. However, male students (13.9%) had a higher percentage of people reaching the high exercise intensity than that of female students (7.7%). There was a significant age and gender difference in exercise intensity ( $P < 0.01$ ) (figure 3-2-6, figure 3-2-7, table 4-2-1-2-24, table 4-2-1-2-25).

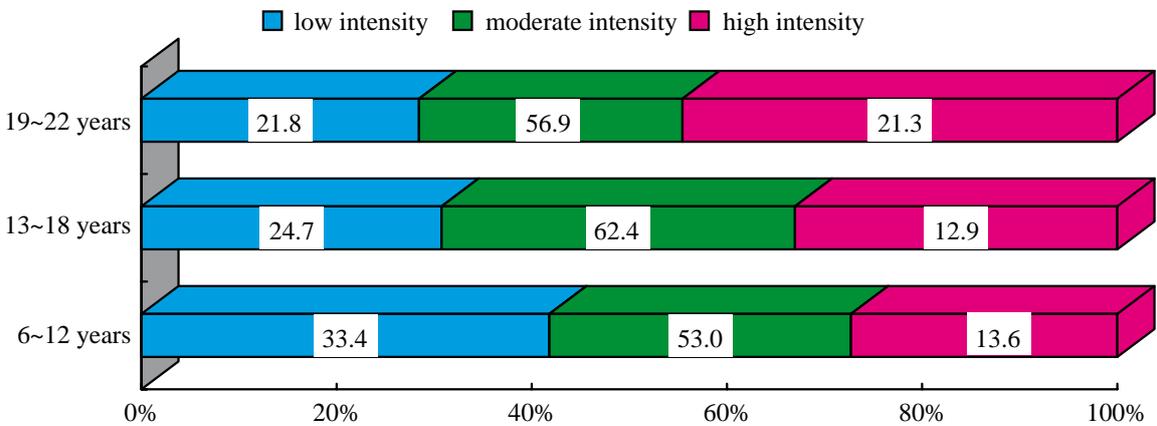


Figure 3-2-6 Proportion of male students with various exercise intensity

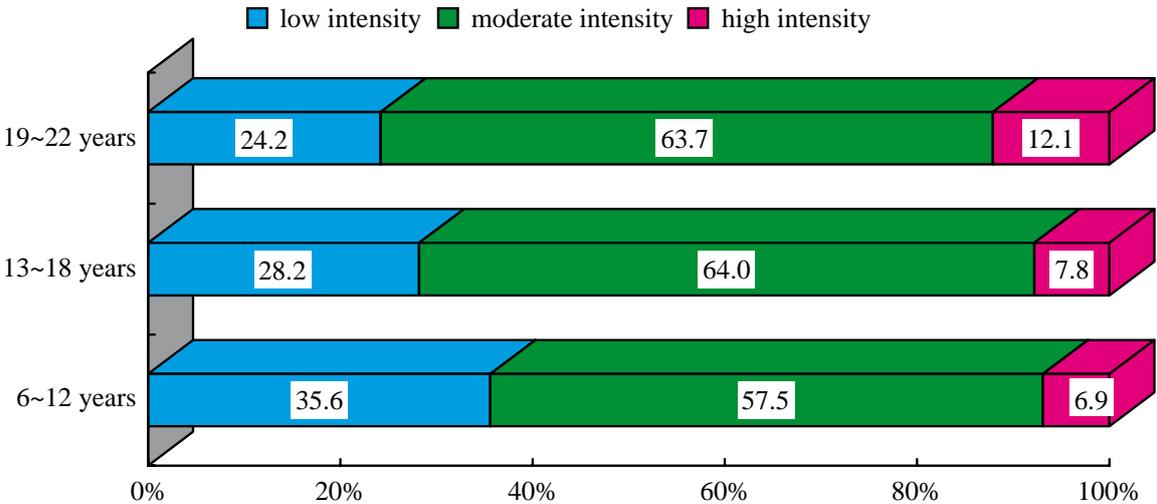


Figure 3-2-7 Proportion of female students with various exercise intensity

### 3.2.2.3 Extracurricular physical exercise

In this study, information about students' extracurricular physical exercises was examined. These included the frequency of doing physical exercises, the duration and intensity of each exercises and the types of exercises.

The results showed that subjects participating in extracurricular physical exercises once to twice a week accounted for the highest proportion (32.9%), followed by those who never participated in extracurricular physical exercises (28.3%), then by those who participated less than once (22.5%), 3~4 times (9.0%), 5 times or more (6.9%) in a week. The orders were basically the same between male and female students and among the three age groups. Among the students aged 6~22, the proportion of female students that never participated in extracurricular physical exercises (33.7%) was higher than that of the male students (23.6%). The aged 13~18 group had the highest proportion of students who never participated in extracurricular physical exercise compared to the aged 6~12 and 19~22 groups. Significant gender and age differences were seen ( $P < 0.01$ ) (figure 3-2-8, table 4-2-1-2-26, table 4-2-1-2-27).

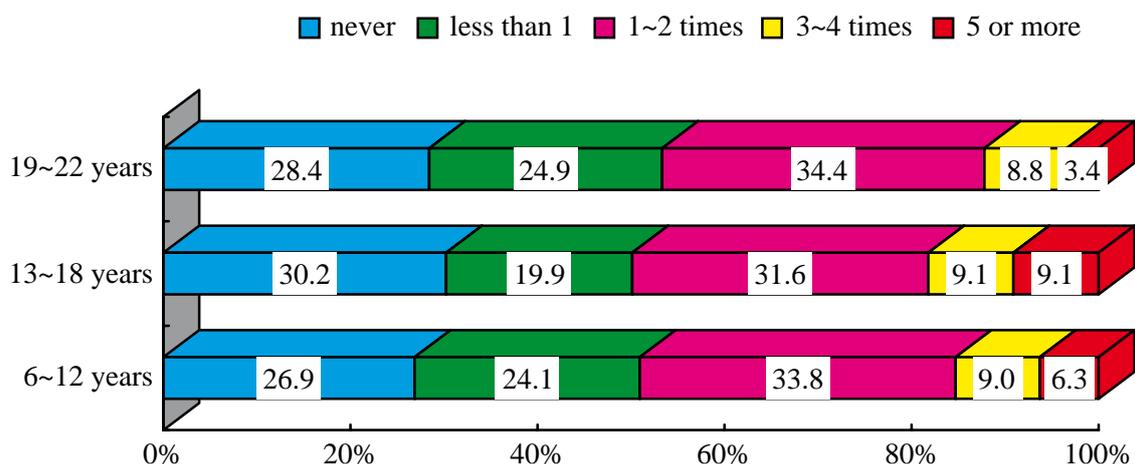


Figure 3-2-8 Frequency of participating in extracurricular exercises

Among the students who participated in physical exercises, students who exercised for 30 minutes to 1 hour accounted for the highest proportion (39.2%), followed by 1 to 2 hours (26.2%), less than 30 minutes (23.6%) and 2 hours or more (11.0%). This pattern of exercise duration was the same for male students, but not for female students. Participating in physical exercise of less than 30 minutes accounted for the second highest proportion in female students. The pattern of exercise duration of the three age groups was basically the same as above (table 4-2-1-2-28, table 4-2-1-2-29).

Most of the students (57.7%) reached moderate exercise intensity. The proportion of male students doing high intensity exercise (25.7%) was higher than that of female students (13.3%). In all three age groups, students doing exercises with moderate intensity accounted for the highest proportion. In the 6~12 years old group, this was followed by those exercising with low intensity and then followed by the high intensity. In the 13 and after age group, this was followed by those exercising with high intensity and then followed by the low intensity. Significant differences were

seen between the genders and among the age groups ( $P < 0.01$ ) (figure 3-2-9, table 4-2-1-2-30 and table 4-2-1-2-31).

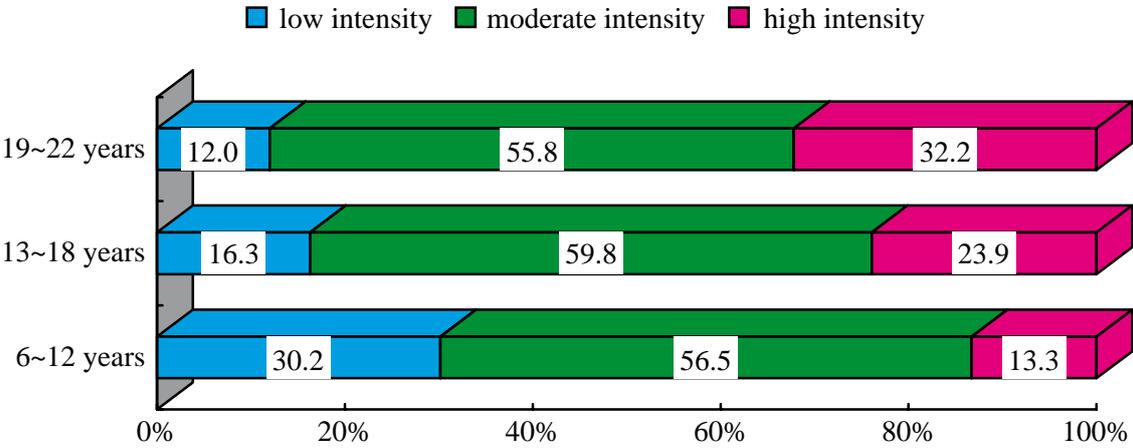


Figure 3-2-9 Exercise intensity in each age group

“Frequent exerciser” was defined as people who exercised 3 times or more per week, each time exercised for longer than 30 minutes with moderate exercise intensity. People who achieved one or two of the above exercise conditions but not all three conditions at the same time was defined as “occasional exerciser”. Those who did not meet any of the above exercise conditions were termed “non-exerciser”. Physical exercises for students included both PE classes and extracurricular physical exercises.

Among the students 29.8% were frequent exercisers, 67.3% were occasional exercisers and 2.9% were non-exercisers. The proportion of frequent exercisers was higher in male than female students and the proportion of occasional and non-exercisers were lower in male than female students. Frequent exercisers accounted for the highest proportion in the 13~18 years old group (34.5%) and lowest in the 19~22 years old group (20.3%). Non-exercisers accounted for the highest proportion in the 19~22 years old group (16.2%). Significant age and gender differences were observed ( $P < 0.01$ ) (figure 3-2-10 and figure 3-2-11).

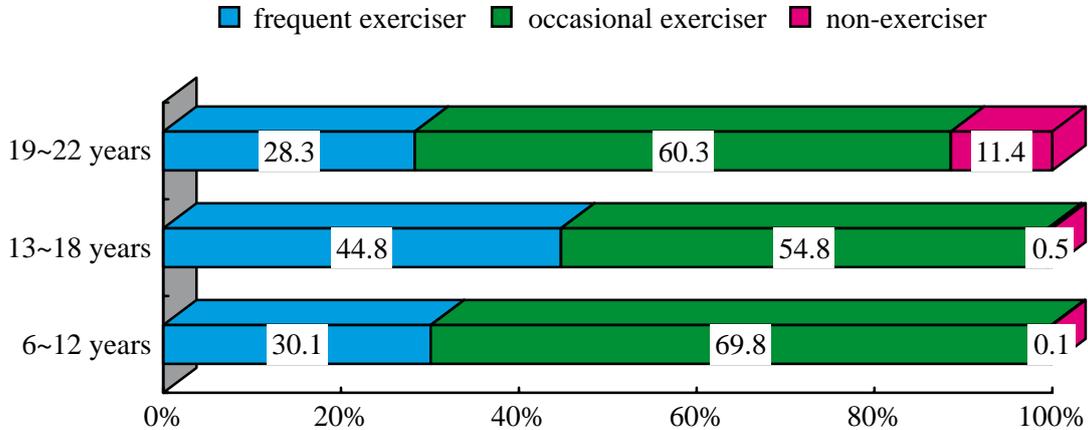


Figure 3-2-10 Proportion of frequent, occasional and non-exercisers at different age groups of male students

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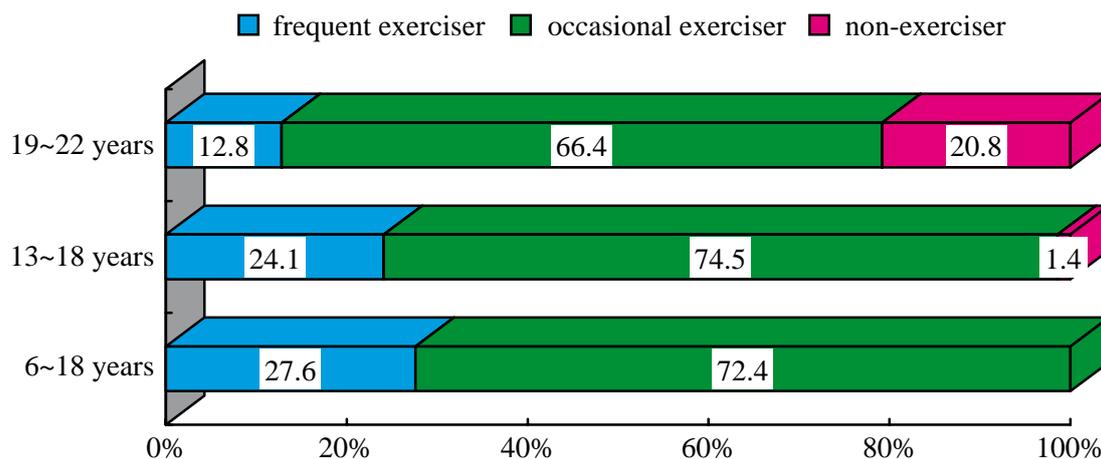


Figure 3-2-11 Proportion of frequent, occasional and non-exercisers at different age groups of female students

Among all the extracurricular physical exercise, the main types of sports the subjects participated in most were ball games (64.1%), swimming (27.0%), track and field (20.4%), bicycling (14.7%) and rope skipping (11.7%). The order of the type of sports participated in most for male and female students was similar. Sports with the highest participation was ball games in all three age groups, followed by swimming, bicycling, rope skipping and track and field for the 6~12 years old group. For the 19~22 years old group, the first three sports with the highest participation were the same as the 13~18 years old group, followed by dancing and bicycling (table 4-2-1-2-32, table 4-2-1-2-33).

The highest participation among all the other ball games was basketball (30.9%), followed by badminton (25.9%), football (19.2%), table tennis (11.4%) and volleyball (9.7%). Participation in other types of ball games was low. Basketball accounted for the highest participation (38.6%), followed by football (28.5%) and table tennis (14.3%) in the male students, while badminton (50.2%), volleyball (22.1%) and basketball (16.4%) was more popular among the female students. Students aged 6~12 participated most in badminton, followed by football and basketball. Students aged 13 or older participated most in basketball, followed by badminton and football (table 4-2-1-2-34, table 4-2-1-2-35).

### 3.2.2.4 Occurrence of diseases

Among the student subjects, 15.6% had been diagnosed by the hospital to have certain diseases in the past 5 years, 17.6% for the male and 13.5% for the female students, with a significant difference between genders ( $P < 0.01$ ) (figure 3-2-12, table 4-2-1-2-36, table 4-2-1-2-37).

The top five most frequent diseases occurring among these subjects were incidental injury (33.4%), chronic bronchitis (18.8%), asthma (8.1%), anemia (7.4%) and pneumonia (7.2%). For male students, the top five most frequent diseases observed were incidental injury (38.7%), chronic bronchitis (17.8%), asthma (9.8%), pneumonia (8.8%) and hepatitis (4.3%), while the top five most popular diseases observed in females were incidental injury (25.9%), chronic

bronchitis (20.2%), anemia (12.4%), asthma (5.8%) and pneumonia (4.9%). The top four mostly seen diseases occurring in students aged 6~12 in descending order were incidental injury, bronchitis, asthma and pneumonia. Incidental injury, chronic bronchitis, anemia and asthma were the most commonly seen diseases in students aged 13~18 in descending order. For students age 19~22, incidental injury, hepatitis, chronic bronchitis and anemia were the most commonly seen diseases, with incidental injury having the highest percentage. It was worth noticing that incidental injury accounted for the highest proportion in male students after age 10. The percentage of female students having anemia increased in the aged 13~19 group (table 4-2-1-2-38, table 4-2-1-2-39).

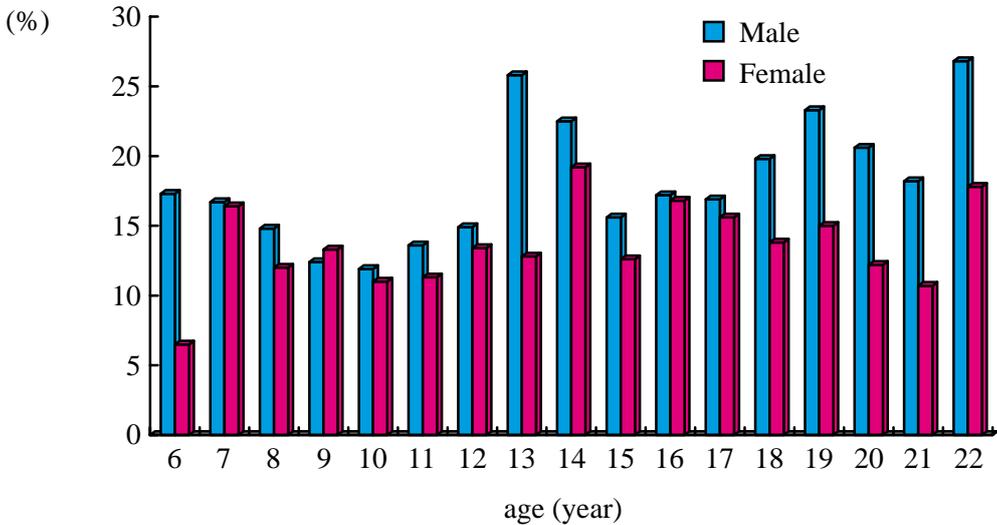


Figure 3-2-12 Proportion of subjects getting sick in the past 5 years

### 3.2.3 Anthropometric Measurements

#### 3.2.3.1 Length indexes

The height of the subjects increased with age, and stop increasing after age 17 for males and after age 15 for females. The average height for male and female students ranged from 118.8~172.3 cm and 117.9~158.6 cm, respectively. No significant gender difference in the height of the 6~12 years old students was found. After 12 years old, the average height of the male students was significantly higher than that of the female students in the same age group ( $P < 0.01$ ) and the difference ranged from 5.1~14.2 cm (table 4-2-2-2-40, figure 3-2-13).

The sitting height of the students increased with age, and stop increasing after age 18 for males and after age 15 for females. The average height for male and female students ranged from 65.1~92.1 cm and 64.4~86.1 cm, respectively. No significant difference in sitting height was seen between male and female students aged 6~13. After aged 13, average height of the male students was significantly higher than that of the female students in the same age group ( $P < 0.01$ ), with difference ranged from 3.7~ 6.5 cm (table 4-2-2-2-41, figure 3-2-14).

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Foot length increased with age until age 14 for male and age 12 for female students. The foot length reached 25.0 cm and 22.6 cm for male students aged 14 and for female students aged 12, respectively. The average foot length of male and female students ranged from 18.3~25.2 cm and 18.1~22.8 cm, respectively. No significant difference in foot length of male and female students aged 6~11 was seen. After that, female foot length remained stable, while male foot length continued to increase until age 14 and exceeded the female foot length, with a significant difference ranging from 0.9~2.6 cm ( $P<0.01$ ) (table 4-2-2-2-42, figure 3-2-15).

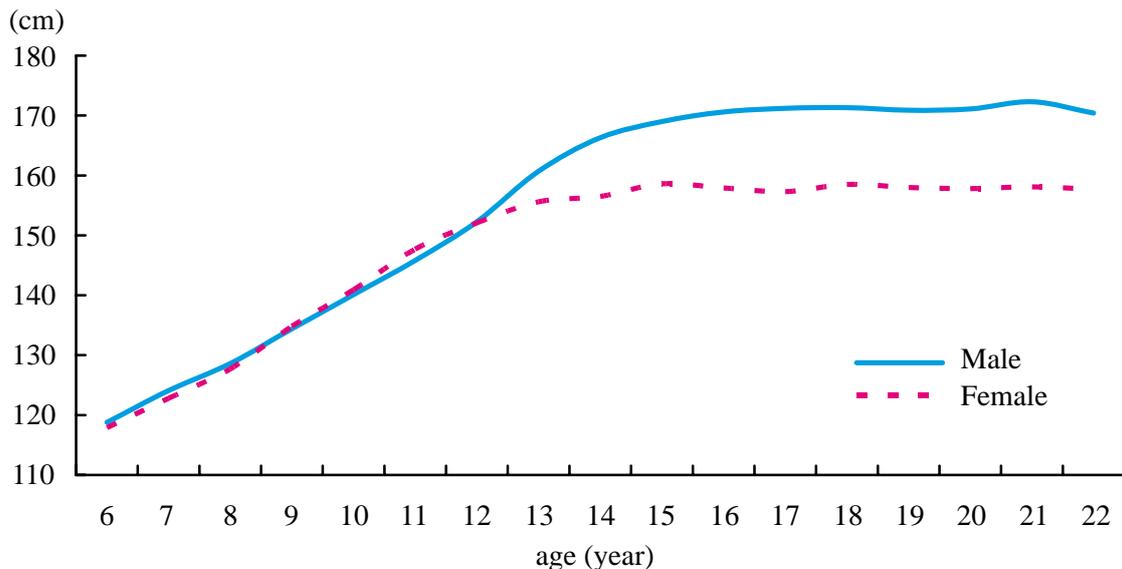


Figure 3-2-13 Height

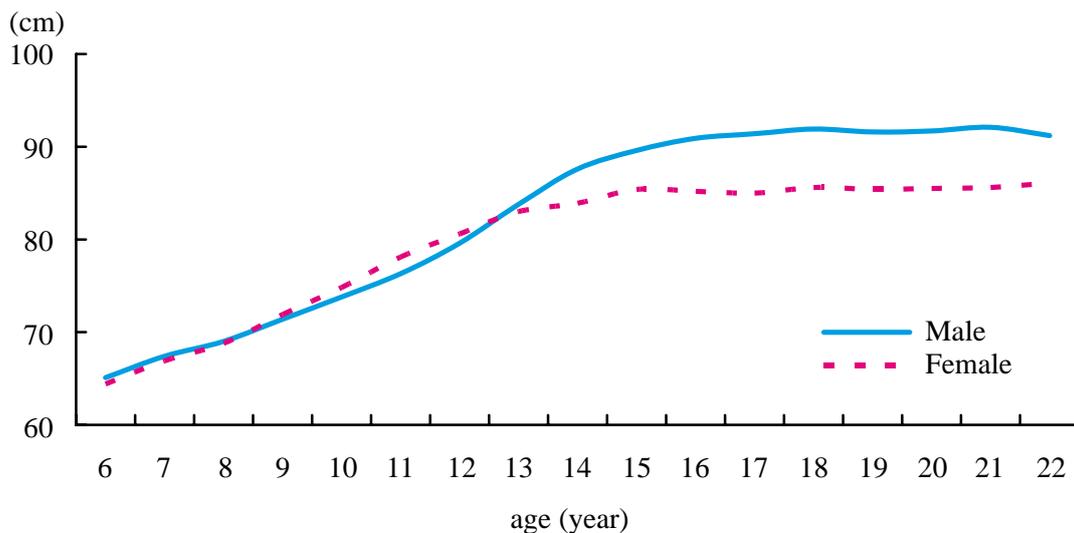


Figure 3-2-14 Sitting height

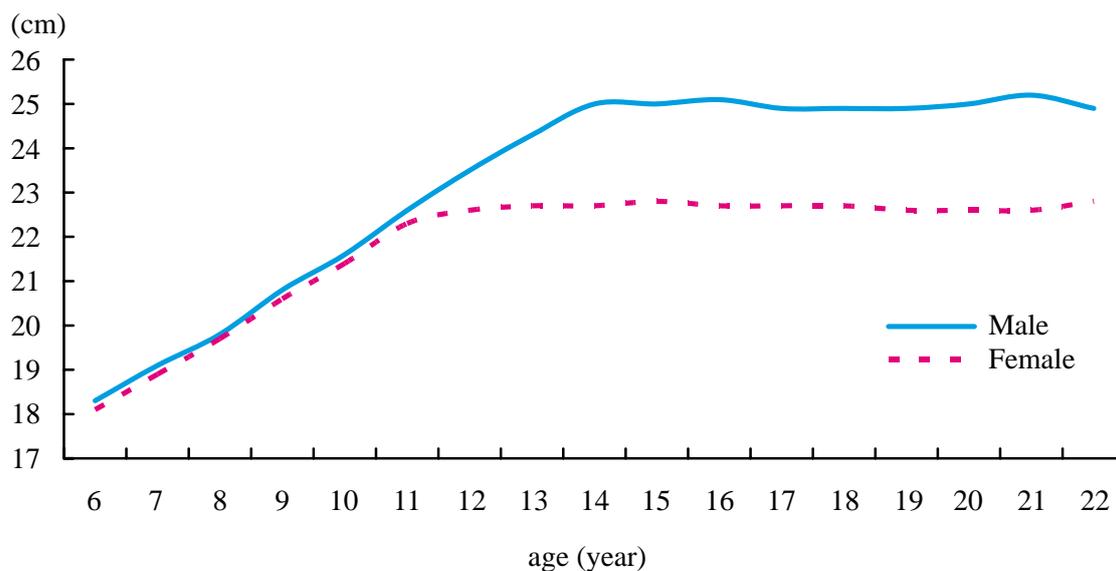


Figure 3-2-15 Foot length

### 3.2.3.2 Weight and BMI

The weight of both male and female students increased with age, and the increase was larger before age 14 for males and before age 13 for females. After age 15, the weight of female students remained stable. The average weight of the male and female students ranged from 22.0~62.6 kg and 21.0~49.9 kg, respectively. No significant gender difference in weight was seen at aged 6~13. After age 13, average weight of males was significantly higher than that of the females ( $P<0.01$ ), with difference ranging from 7.2~14.3 kg (table 4-2-2-2-43, figure 3-2-16).

BMI of the male students increased with age between age 6 and 22, whereas BMI for the female students increased with age between age 6 and 17 and then slightly decreased afterwards. The average BMI of the male and female students ranged from 15.5~21.1 and 15.1~20.1, respectively. Between age 8 and 12 and between age 18 and 22, the average BMI of male students was significantly higher than that of the female students ( $P<0.05$ ), with a difference ranging from 0.5~1.7. No gender difference was seen in BMI between age 13~17 (table 4-2-2-2-44, figure 3-2-17).

According to the weight for height standard for students in “Physical Fitness Standards for the Chinese Citizens”, 8.1%~21.1% of the 6~22 years old male students were overweight. The lowest and the highest percentage of overweight male students were 7 and 10 years old. For 6~22 years old female students, overweight accounted for 0.0%~16.6%, with the highest and the lowest proportion of overweight at aged 11 and 21. The percentage of overweight in the 6~13 years old group was significantly higher than that of the 14~22 age group (except for some specific age). The percentage of overweight was higher in male students than female students (except age group 7, 11, 13 and 14) (table 4-2-2-2-45, figure 3-2-18).

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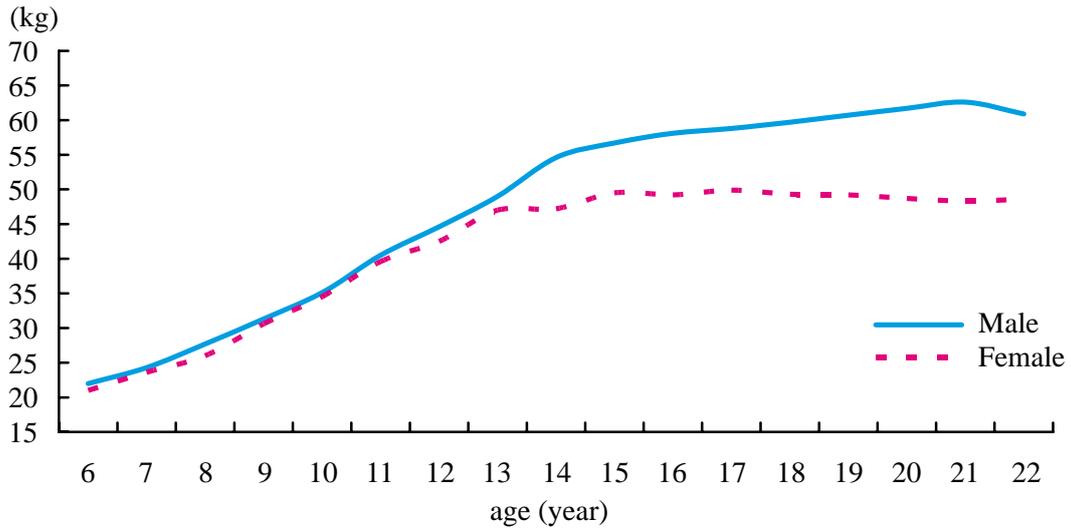


Figure 3-2-16 Weight

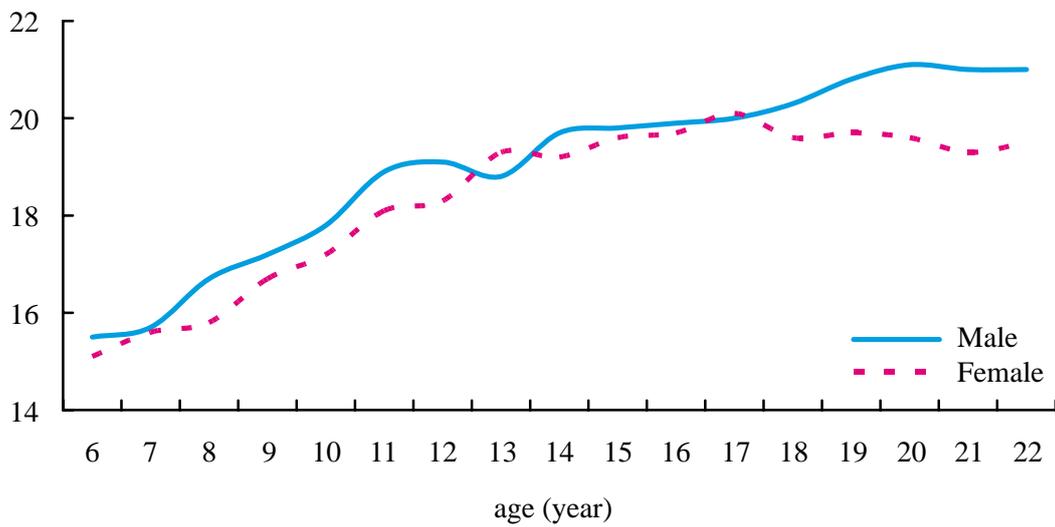


Figure 3-2-17 BMI

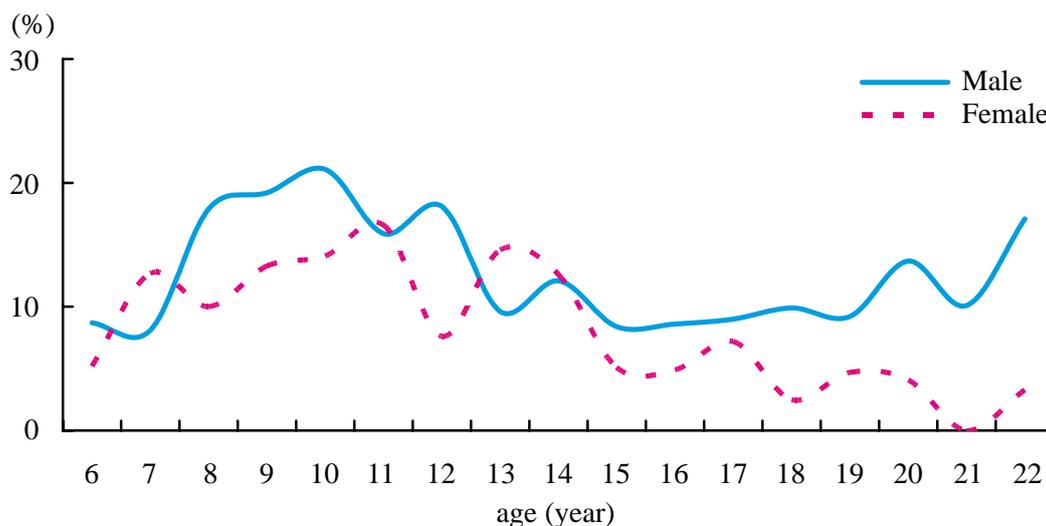


Figure 3-2-18 Proportion of overweight

### 3.2.3.3 Circumference indexes

Chest, waist and hip circumferences for male students increased with age, while those for female students increased with age until age 17 and slightly decreased thereafter. The average chest, waist and hip circumferences of the male and female students ranged from 57.8~86.8 cm (male) and 56.5~80.2 cm (female), 53.4~74.9 cm (male) and 51.5~67.5 cm (female) and 60.8~89.1 cm (male) and 60.2~88.6 cm (female), respectively (table 4-2-2-2-46, table 4-2-2-2-47, table 4-2-2-2-48).

Between age 6~13, no gender difference was seen in chest circumference. After age 13, male chest circumference was significantly higher than that of the female students ( $P<0.05$ ), with difference ranging from 1.8~7.4 cm. Waist circumference of the male students was significantly higher than that of the female between age 6~22 ( $P<0.01$ ) (except in the 7 and 13 age groups), with difference ranging from 1.1~9.3 cm. The difference in hip circumference between male and female students was not as obviously as that of the chest and waist circumference. Before age 11, no gender difference was observed in hip circumference. However, between age 11~17 females hip circumference was significantly higher than males, but males hip circumference was higher than females after age 17 (figure 3-2-19, figure 3-2-20, figure 3-2-21).

The waist-to-hip ratio (WHR) of male and female students declined as age increased between age 6~18, and slightly increased thereafter. The average WHR of male and female students ranged from 0.808~0.878 and 0.749~0.853, respectively. The male WHR was significantly higher than that of the female ( $P<0.05$ ), with a difference ranging from 0.018~0.092 (table 4-2-2-2-49, figure 3-2-22).

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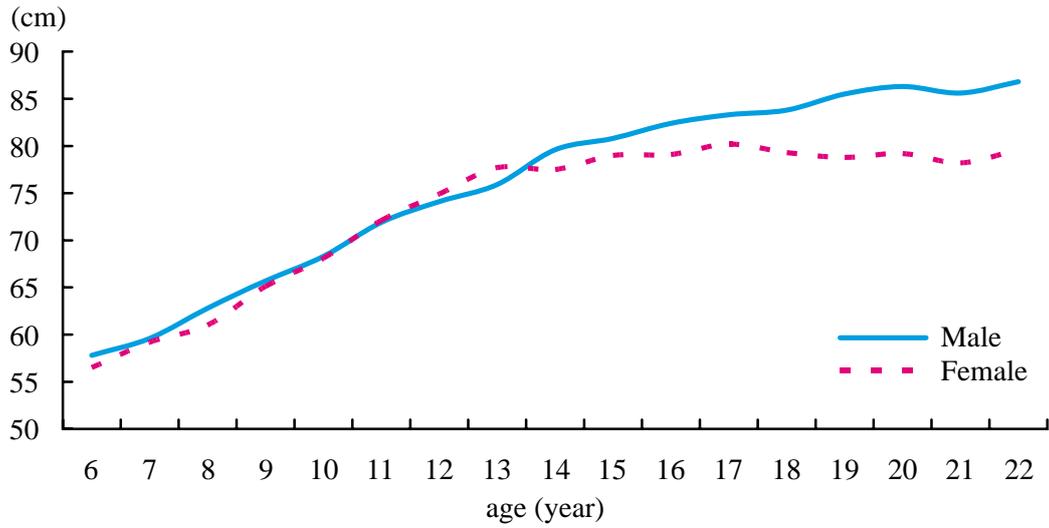


Figure 3-2-19 Chest circumference

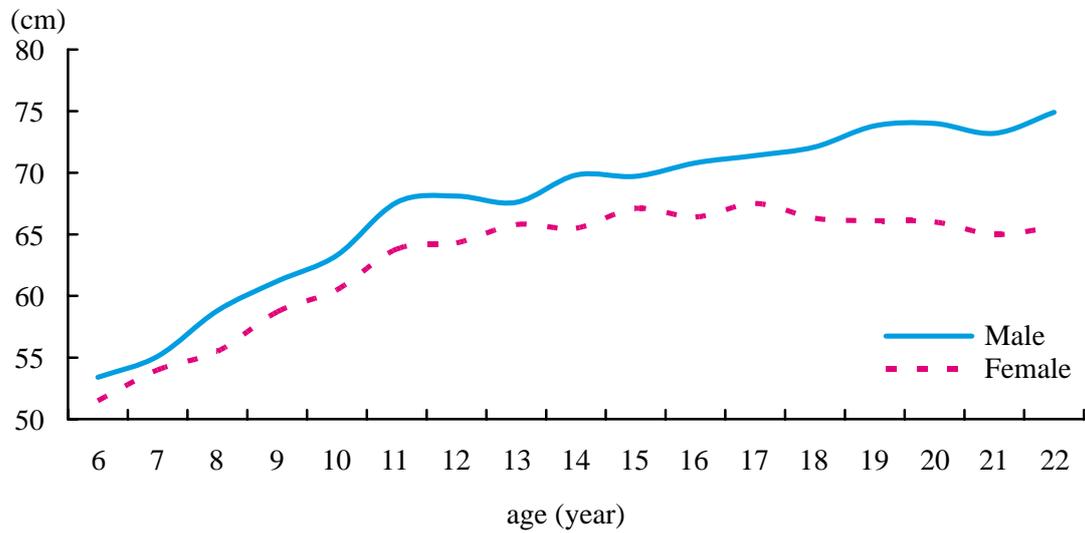


Figure 3-2-20 Waist circumference

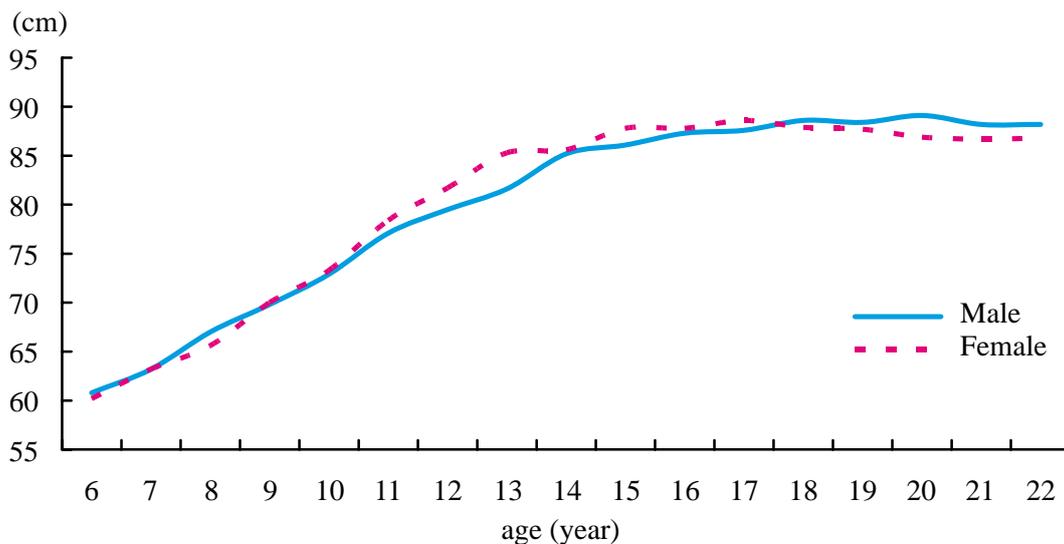


Figure 3-2-21 Hip circumference

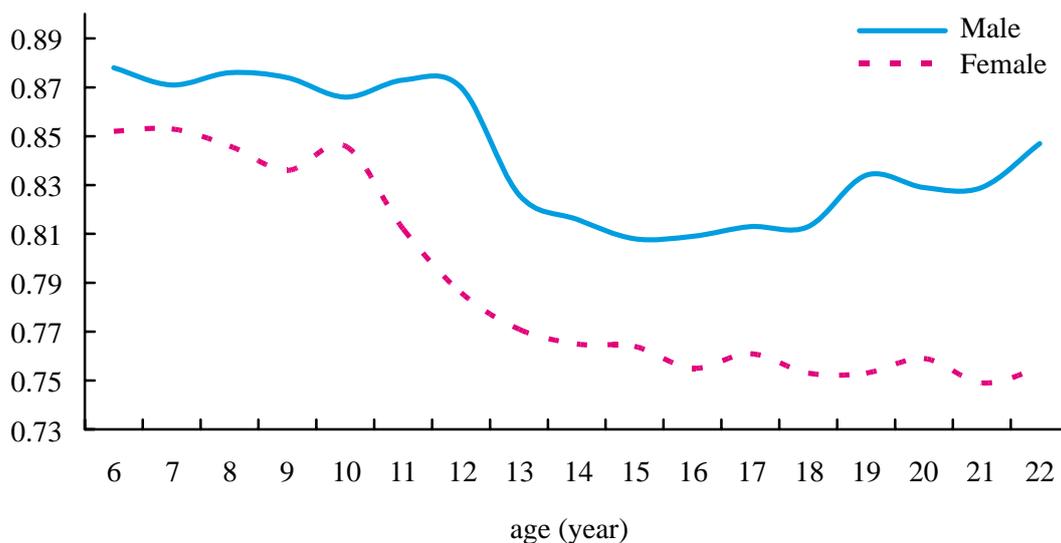


Figure 3-2-22 WHR

### 3.2.3.4 Width indexes

Shoulder width increased with age and the rate of increase was fairly large between age 6~14 for males and between age 6~12 for females, and the increase slightly slowed down thereafter. The average shoulder widths of the male and female students ranged from 26.1~39.5 cm and 25.3~34.7 cm, respectively, with males shoulder width higher than females. Before age 13, the increase of shoulder width in both males and females was similar. After age 13, the increase in shoulder width in females was slower than in male students and the difference between males and females increased ( $P < 0.01$ ). The difference in shoulder width between males and females ranged from 1.6~4.8 cm in the 13~22 years old age group (table 4-2-2-2-50, figure 3-2-23).

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Pelvis width increased with age and the rate of increase was before age 15 and slowed down thereafter. The average pelvis width for males and females ranged from 18.7~27.5 cm and 18.0~25.8 cm, respectively. No significant gender difference was seen in pelvis width. Between age 14~22, the average pelvis width of males was 0.6~1.8 cm higher than that of females, with a significant gender difference ( $P<0.01$ ) (table 4-2-2-2-51, figure 3-2-24).

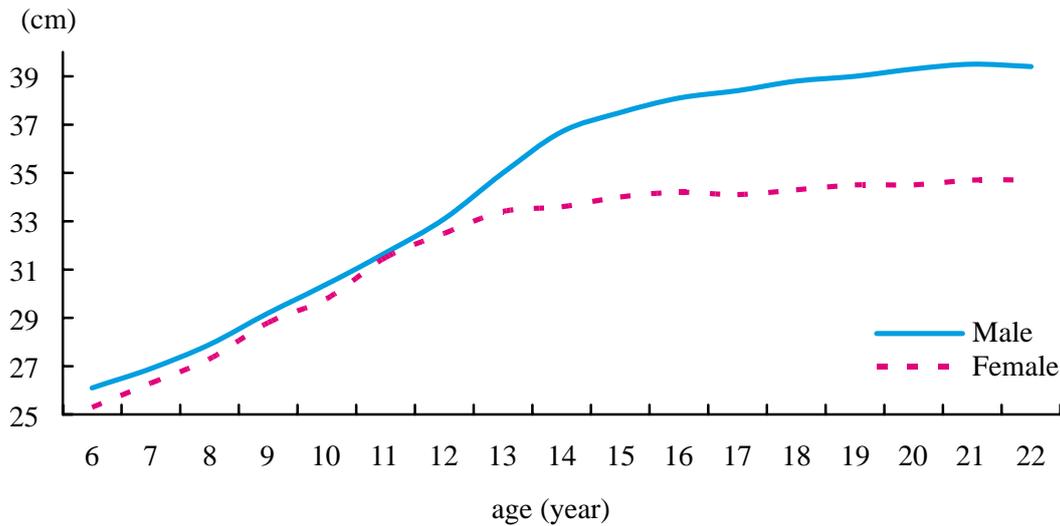


Figure 3-2-23 Shoulder width

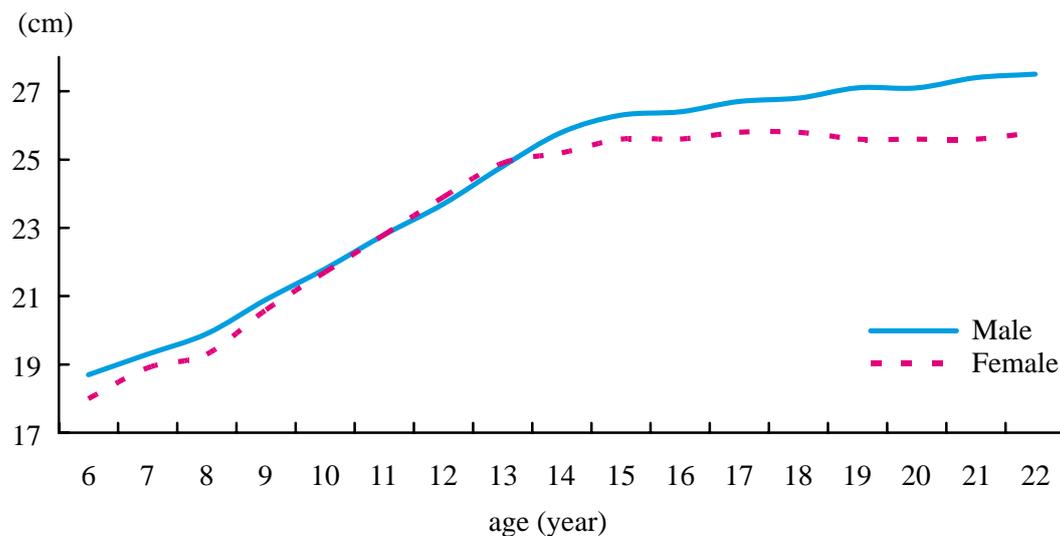


Figure 3-2-24 Pelvis width

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### 3.2.3.5 Body composition

The upper arm, subscapular and abdominal skinfold thickness increased with age for the male students between age 6~11, decreased afterwards and remained stable between age 13~22. The females skinfold thickness of the three measuring sites increased with age. The upper arm and the abdominal skinfold thickness increased until age 17 and slightly decreased in females. The average skinfold thickness of the upper arm, subscapular and abdominal for males and females ranged from 9.5~15.4 mm (male) and 9.9~17.4 mm (female), 6.5~14.2 mm (male) and 7.3~18.2 mm (female) and 7.8~18.0 mm (male) and 8.1~22.9 mm (female), respectively (table 4-2-2-2-52, table 4-2-2-2-53, table 4-2-2-2-54).

No significant gender difference in skinfold thickness of the three sites was seen between age 6~12 (except for some ages). The females skinfold thickness of all three sites were significantly higher than that of the males between age 13~22 ( $P<0.05$ ). The difference in upper arm skinfold, subscapular skinfold and abdominal skinfold between females and males ranged from 4.2~6.6 mm, 3.2~5.5 mm and 3.5~8.9 mm, respectively (figure 3-2-25, figure 3-2-26, figure 3-2-27).

Percent body fat and lean body mass of 9 years old students or older was predicted using skinfold thickness and the Japanese Brozek formula. Percent body fat reflected the proportion of body fat to weight and lean body mass referred to the amount of water, minerals and organic materials. Percent body fat and lean body mass are often used to assess body composition.

Percent body fat of the male students increased with age between 9~11 years old and decreased thereafter. Percent body fat remained stable at about 15% between age 13~22. Percent body fat of the female students increased with age before age 13 and remained stable at about 23% thereafter. Percent body fat of males and females ranged from 14.9%~18.0% and 18.4%~23.8%, respectively (table 4-2-2-2-55).

Percent body fat of the female students at age 9~22 was significantly higher than male ( $P<0.05$ ), with a difference ranging from 1.6~8.9%. The biggest difference in percent body fat between males and females was at the 15~19 age group (figure 3-2-28).

The lean body mass increased with age in males and the increase was quickly before age 15 and then slowed down thereafter. The lean body mass also increased with age in females, and reached a peak at age 15 and then remained stable with little change thereafter. The average lean body mass of males and females ranged from 26.0~52.7 kg and 24.6~37.9 kg, respectively (table 4-2-2-2-56).

Lean body mass was significantly higher in males than females between age 9~22 ( $P<0.05$ ), and the difference began to increase from age 12. The difference in lean body mass between males and females at age 9~11 and age 12~22 ranged from 1.2~1.5 kg and 2.7~15.8 kg, respectively (figure 3-2-29).

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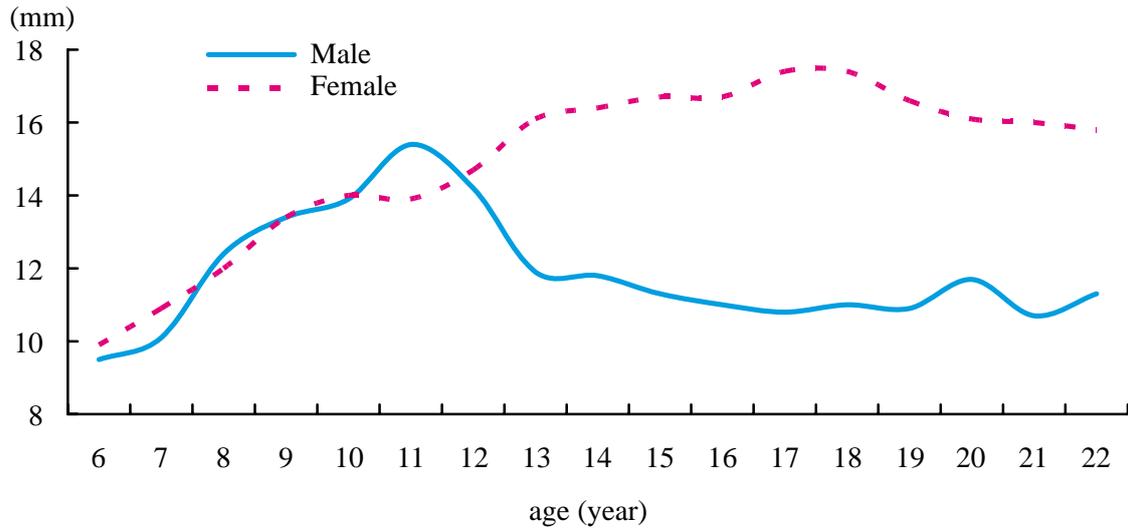


Figure 3-2-25 Upper arm skinfold thickness

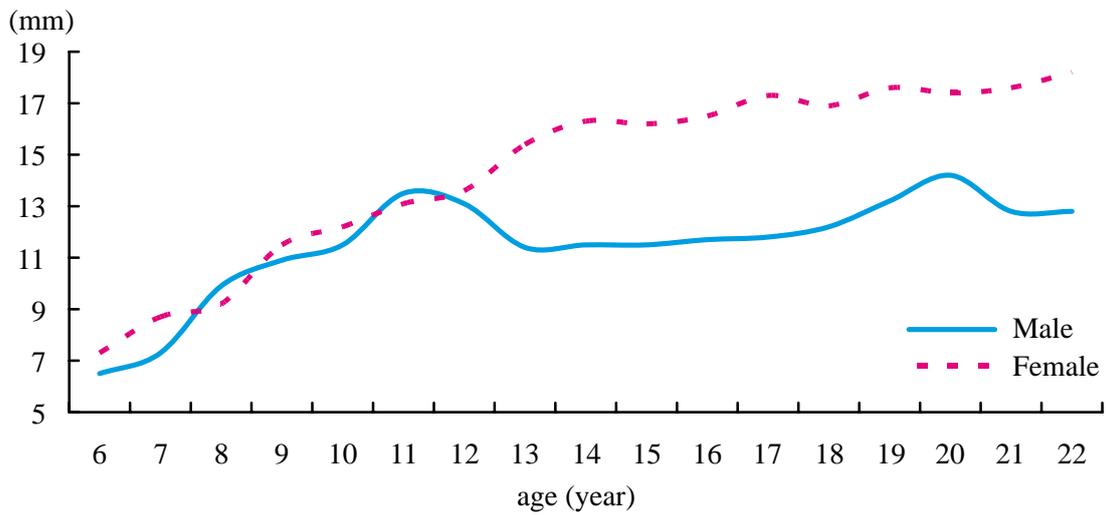


Figure 3-2-26 Subscapular skinfold thickness

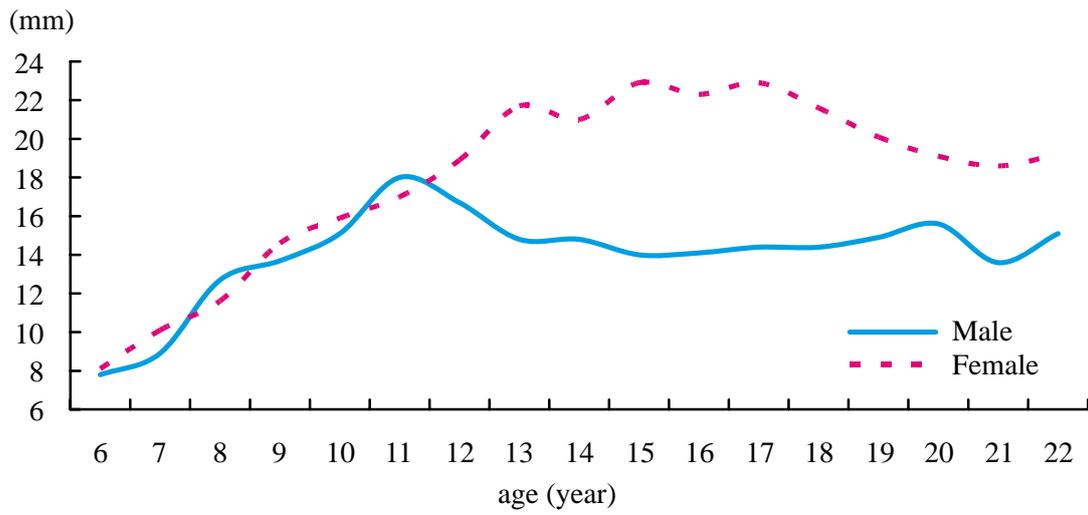


Figure 3-2-27 Abdominal skinfold thickness

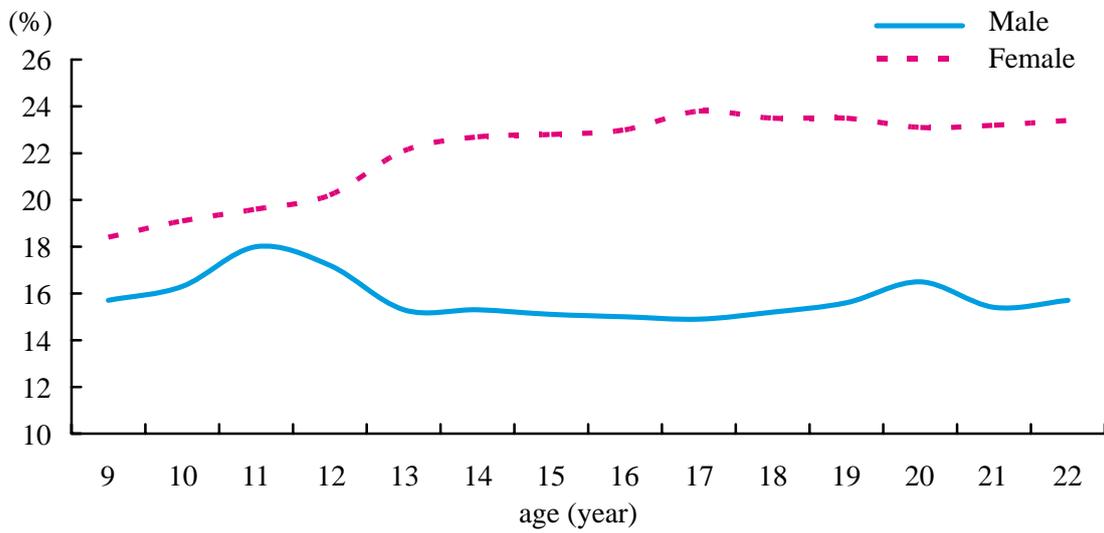


Figure 3-2-28 Percent body fat

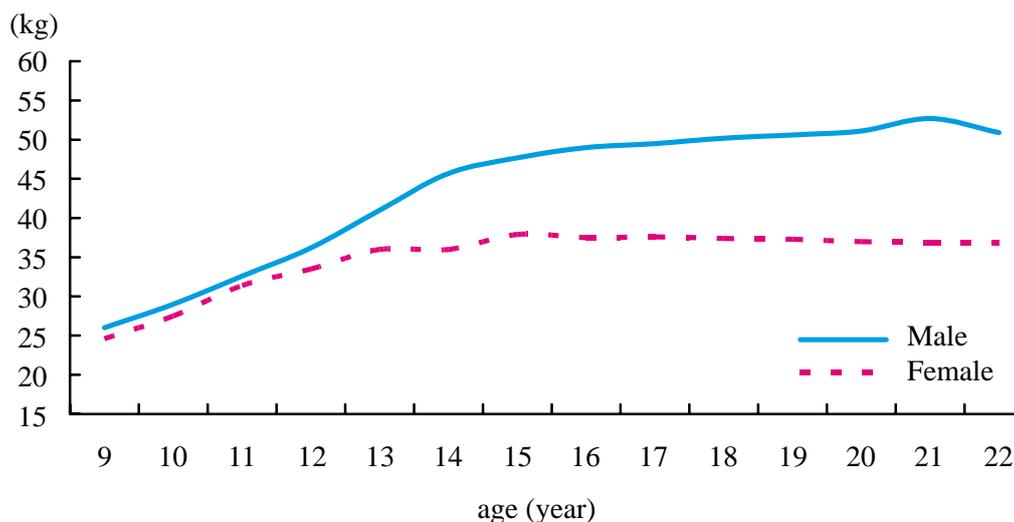


Figure 3-2-29 Lean body mass

### 3.2.4 Physiological Function

The physiological function levels were reflected by resting pulse and blood pressure (systolic pressure and diastolic pressure) and vital capacity.

#### 3.2.4.1 Resting pulse

The resting pulse is an easy index used to reflect the functions of the circulatory system. Resting pulse of male and female students aged 6~22 decreased as age increased. The decrease was more pronounced for males after age 13 (except age 15 and 19), whereas the decrease for females was less pronounced. Between age 6~22, the decrease in resting pulse of male and female students were 17.3 times/minute and 13.5 times/minute, respectively. Resting pulse for males and females ranged from 92.7~75.4 times/minute and 93.3~79.8 times/minute, respectively. The females resting pulse was higher than males in most age groups, especially after age 20 (table 4-2-2-2-57, figure 3-2-30).

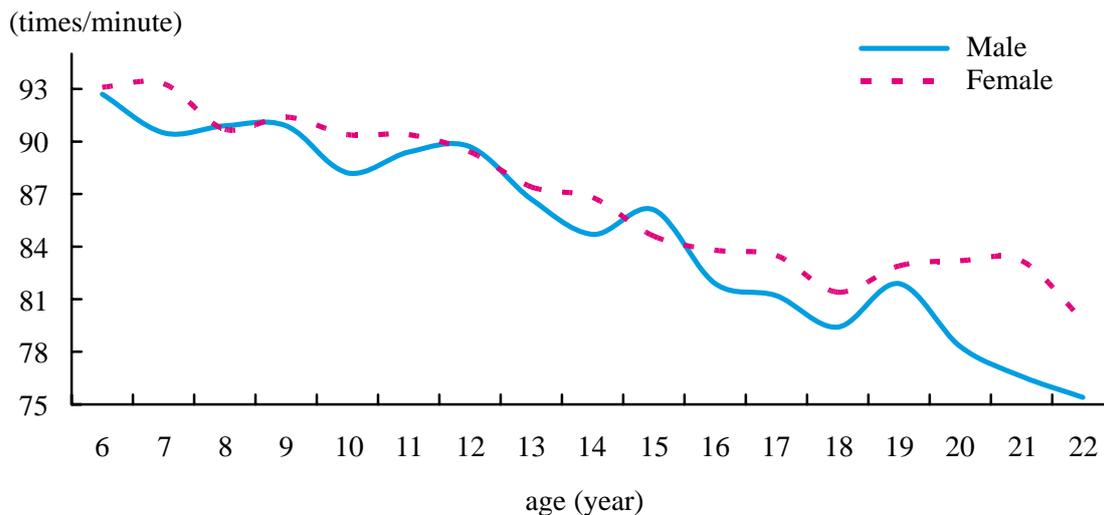


Figure 3-2-30 Resting pulse

### 3.2.4.2 Blood pressure

When the ventricle contracts, the blood pressure of artery rises and the highest value is called systolic pressure, which reflects mainly the quantity of blood pumped out by each pulse. When the ventricle extends, the blood pressure of artery descends and the lowest value is called diastolic pressure, which reflects mainly the outside resistance. The difference between the systolic and diastolic pressures is called pressure difference, which reflects the elasticity of the artery wall.

Systolic pressure of the students increased with age between 6~22 years old. The degree of increase was higher between 9~13 years old male students and 9~12 years old female students. After age 13 for the male students and age 12 for the female students, the rise in systolic pressure slowed down or remained relatively stable, ranging from 89.8~116.6 mmHg and 86.5~107.5 mmHg for males and females, respectively. After age 13, the male systolic pressure was obviously higher than female ( $P < 0.01$ ), and the difference was more pronounced after age 18 (table 4-2-2-2-58, figure 3-2-31).

Diastolic pressure of male and female students increased slowly as age increased between age 6~22, without a significant difference in the rate of increase between age groups. The average diastolic pressure ranged from 55.2~72.1 mmHg for males and 54.2~68.8 mmHg for females. Male diastolic pressure was obviously higher than females ( $P < 0.01$ ), but no significant gender difference was seen after age 18 (table 4-2-2-2-59, figure 3-2-32).

Pressure difference of the students increased slowly as age increased between age 6~22, with no significant difference in the rate of increase between age groups. The average pressure difference ranged from 34.6~46.9 mmHg for males and 32.3~40.0 mmHg for females. Pressure difference of males was obviously higher than females ( $P < 0.01$ ) before age 13 and no significant gender difference was seen in other age groups (table 4-2-2-2-60, figure 3-2-33).

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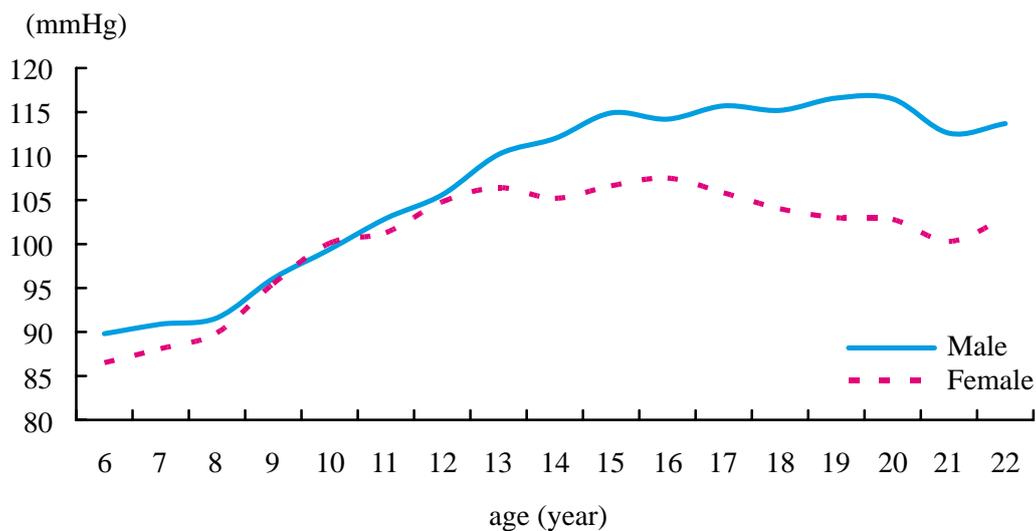


Figure 3-2-31 Systolic pressure

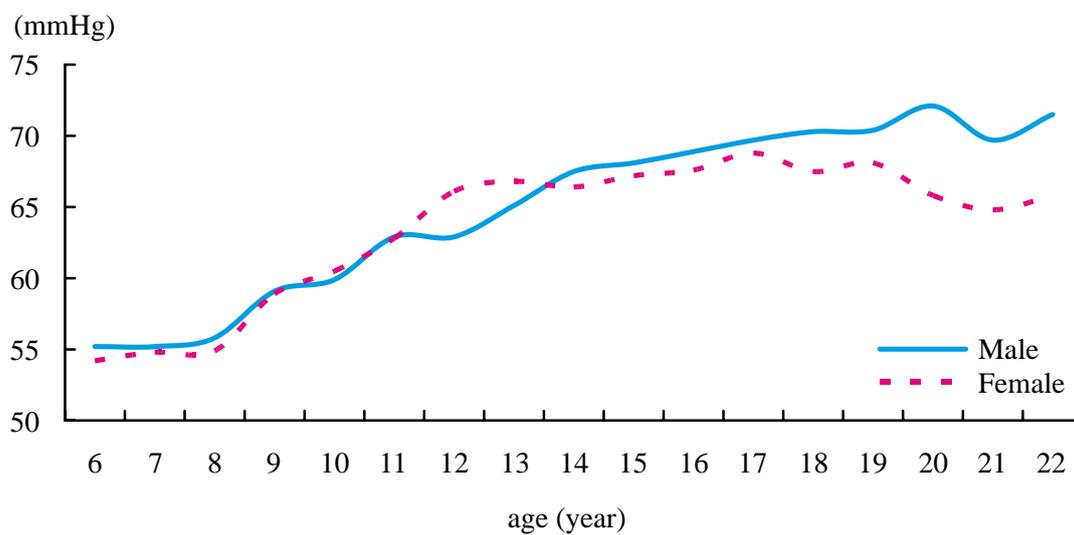


Figure 3-2-32 Diastolic pressure

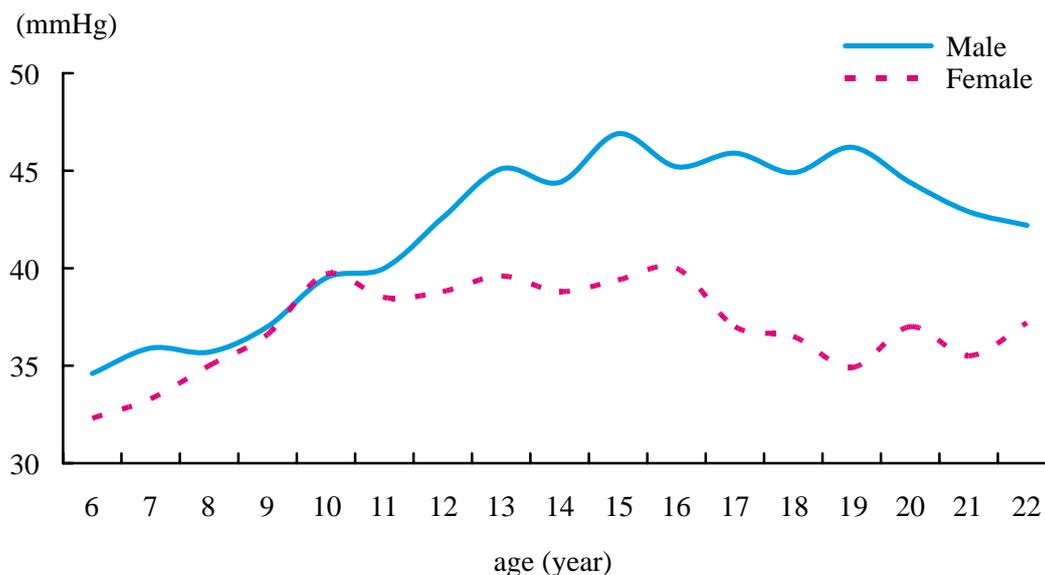


Figure 3-2-33 Pressure difference

### 3.2.4.3 Vital capacity

Vital capacity refers to the maximum amount of air that can be exhaled after a maximum inhalation. This indicated the maximum working capacity of the respiratory system of the human body.

The average vital capacity of the students at age 6~22 increased apparently as age increased, with a high increase rate between age 6~16 for males and age 6~15 (except age 14) for females. The increase ranged from 143.9~462.7 ml and 122.2~305.2 ml for males and females, respectively. The average increase was 275.76 ml for males and 177.0 ml for females. After age 16 (males) and 15 (females), vital capacity remained comparatively stable (except for age 19~20 males). Generally speaking, vital capacity of males (1217.3~4442.3 ml) was significantly higher than females (1115.4~2958.4 ml) ( $P < 0.01$ ), especially after age 15 when average males vital capacity was 1000 ml or more higher than females (table 4-2-2-2-61, figure 3-2-34).

The average vital capacity/weight of the students aged between 6~22 increased slowly as age increased. The change in male vital capacity varied slightly between age 6~12, ranging from 56.3~58.3 ml/kg, but increased apparently between age 13~19 (except age 17 and 18), from 62.2 to 72.0 ml/kg. Female vital capacity varied slightly before age 17, ranging from 53.5~55.6 ml/kg, and increased about 2 ml/kg after age 18. The average vital capacity/weight of males (56.3~72.5 ml/kg) was significantly higher than females (53.5~61.7 ml/kg) ( $P < 0.01$ ), especially after age 14 when the vital capacity of males was 10 ml/kg or more higher than females (table 4-2-2-2-62, figure 3-2-35).

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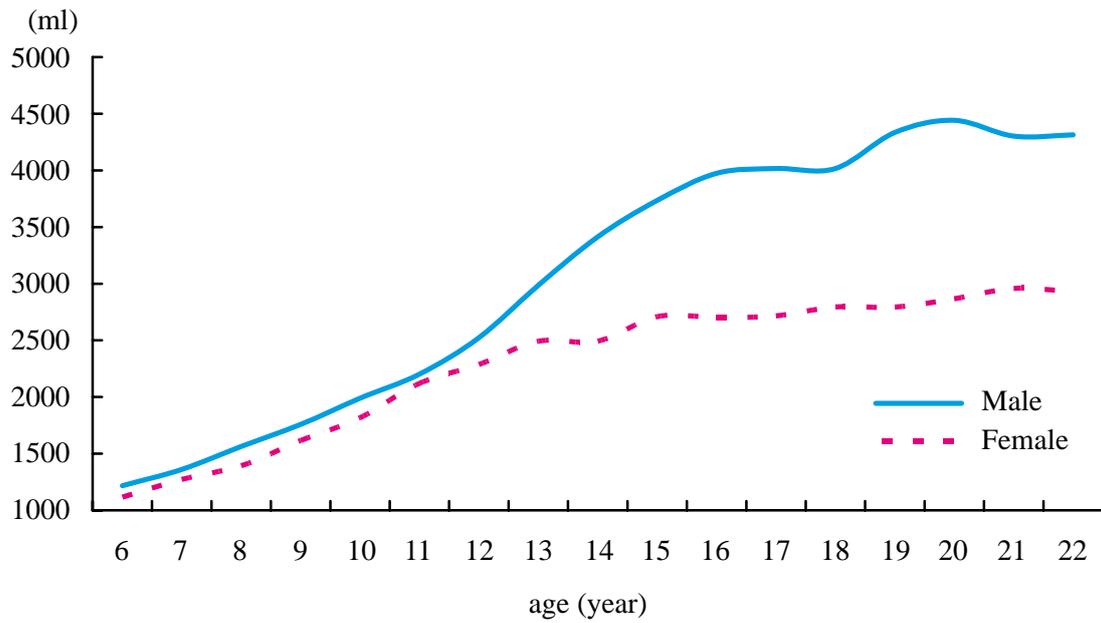


Figure 3-2-34 Vital capacity

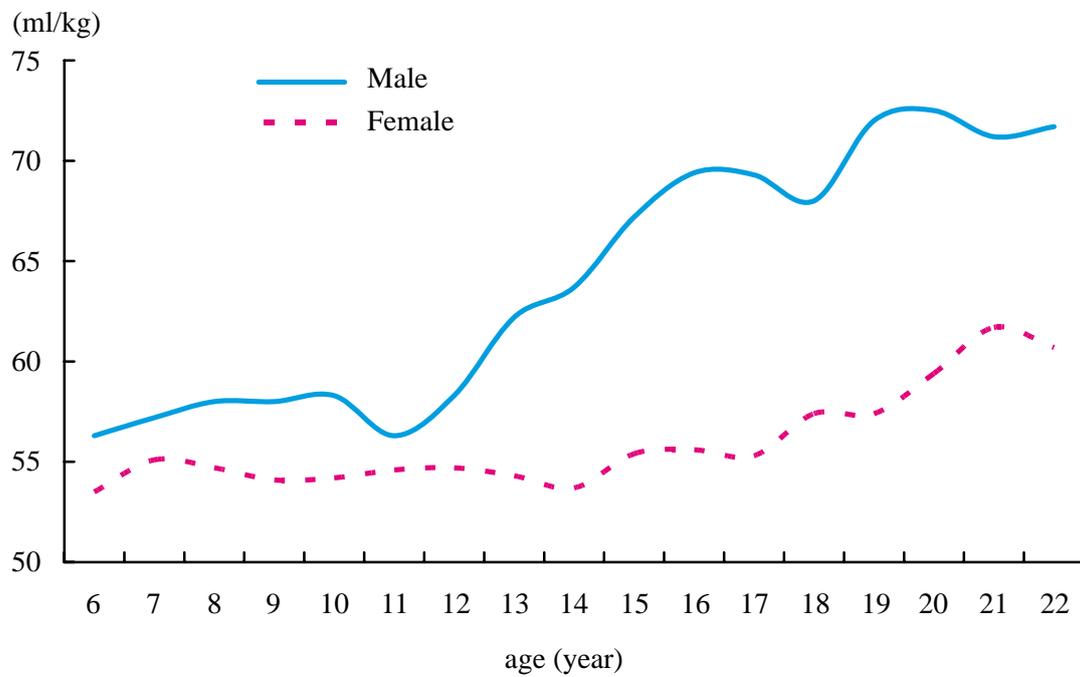


Figure 3-2-35 Vital capacity / weight

### 3.2.5 Physical Fitness

#### 3.2.5.1 Speed

50-m run was used to reflect the speed of the students.

The average speed of the male and female students ranged from 7.8~12.3 seconds and 9.8~12.7 seconds, respectively. The highest value for both males and females was at age 6. The time to finish the run decreased as age increased before age 17 and 11, respectively and the time remained unchanged or increased slightly afterwards. The results showed that speed increased as age increased. The speed of the male students kept increasing from age 6 to 15 to nearly 35%, with a statistic difference among age groups ( $P<0.05$ ), and remained stable thereafter. For female students, the speed kept increasing from age 6 to 11 to nearly 22%, with a significant difference among the age groups ( $P<0.05$ ), and remained stable or decreased slightly thereafter (table 4-2-2-2-63).

The rate of increase in speed was much larger in males than females as age increased. The speed of the male students was significantly faster than females in all age groups ( $P<0.05$ ). The difference in speed increased between males and females after age 11, reaching the largest difference of 2.3 seconds (figure 3-2-36).

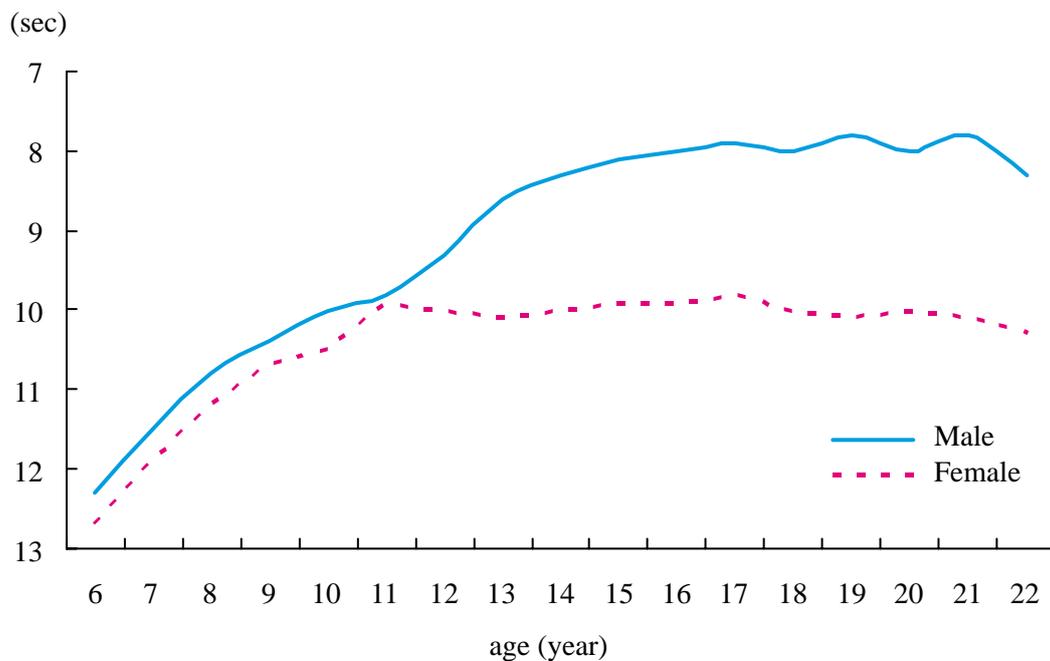


Figure 3-2-36 50-meter run

### 3.2.5.2 Strength

Standing long jump, vertical jump, pull-ups (pull-ups with body inclined), one-minute sit-ups, grip strength and back strength were used to reflect the strength of the students. Standing long jump and vertical jump showed mainly the explosive force, pull-ups (pull-ups with body inclined) and one-minute sit-ups reflected mainly the endurance. Grip strength and back strength reflected the maximum muscle force.

The average indexes for the male students ranged as follows: standing long jump 101.8~213.5 cm, vertical jump 19.6~42.9 cm, pull-ups (pull-ups with body inclined) 0.9~3.1 times (10.3~13.7 times), grip strength 8.3~41.1 kg and back strength 27.2~116.3 kg. The average indexes for female students ranged as follows: standing long jump 95.3~153.4 cm, vertical jump 18.9~25.8 cm, one-minute sit-ups 12.0~26.0 times/minute, grip strength 7.2~24.0 kg and back strength 24.5~66.1 kg (table 4-2-2-2-64, table 4-2-2-2-65, table 4-2-2-2-66, table 4-2-2-2-67, table 4-2-2-2-68).

All the indexes increased as age increased, but the degree of increase was not the same for each indexes. For example, the standing long jump of male students aged 6~22 increased over 1 fold, and their grip and back strengths increased nearly 3 fold (table 4-2-2-2-64, table 4-2-2-2-65, table 4-2-2-2-66, table 4-2-2-2-67, table 4-2-2-2-68).

All of the aspects in strength were stronger in males than females and the rate of increase was larger than females as well. The strength and speed of the male students increased quite fast before age 17 and increased slowly thereafter. The females strength increased mildly between age 11~13, and the females endurance decreased as age increased after age 17 (figure 3-2-37, figure 3-2-38, figure 3-2-39, figure 3-2-40, figure 3-2-41).

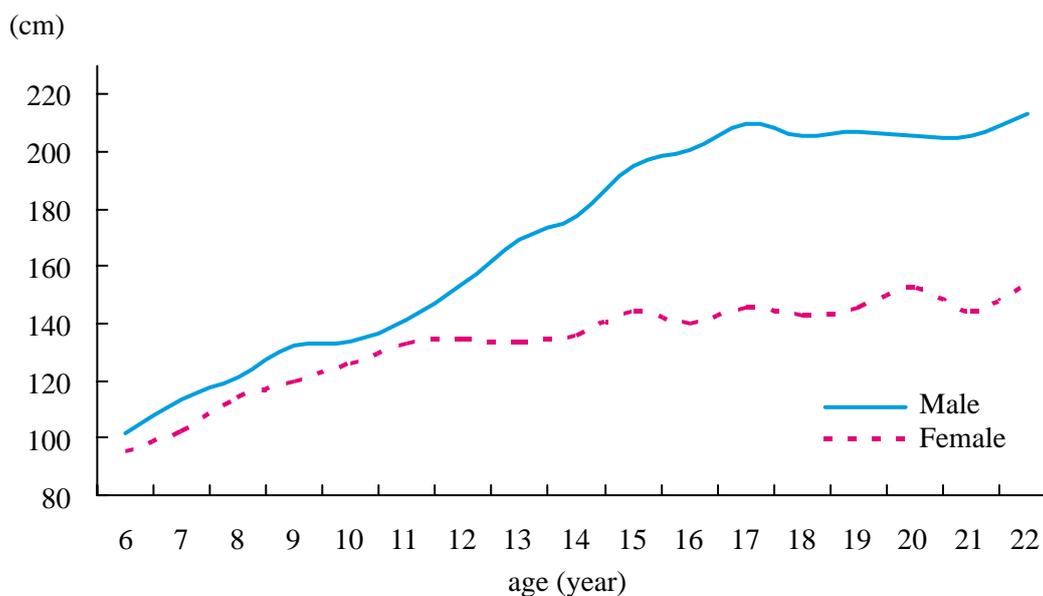


Figure 3-2-37 Standing long jump

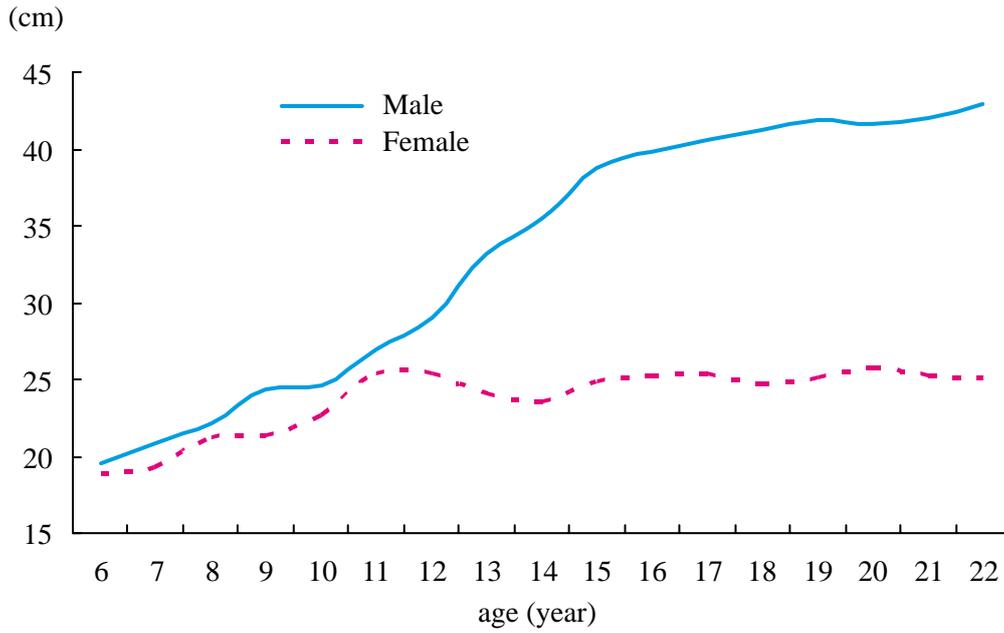


Figure 3-2-38 Vertical jump

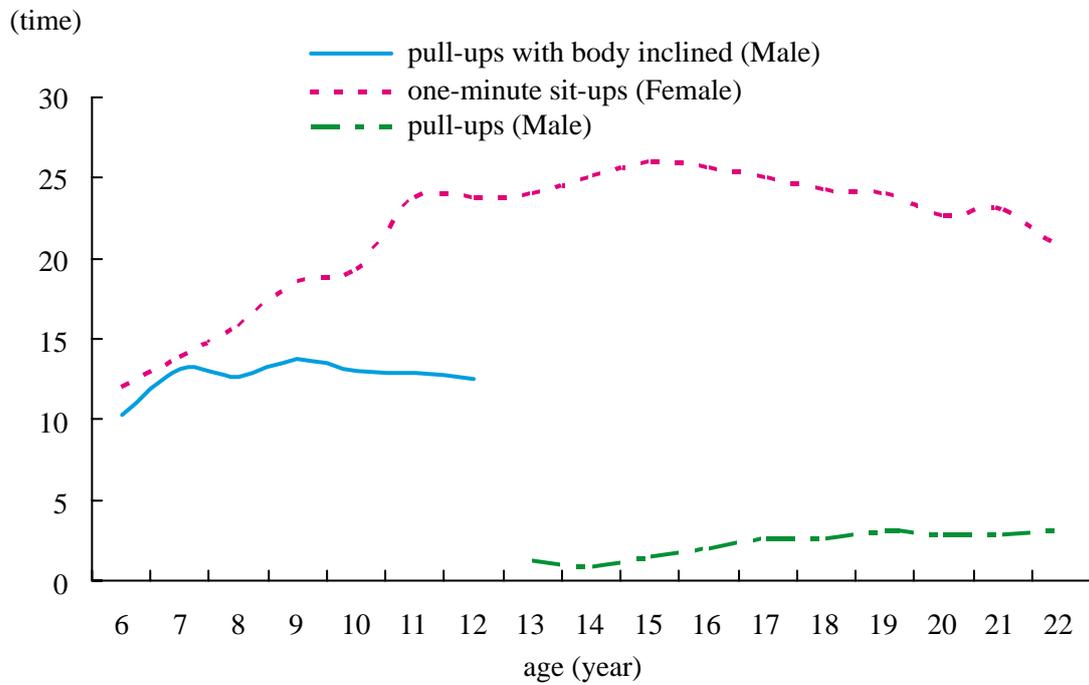


Figure 3-2-39 Pull-ups with body inclined, pull-ups and one minute sit-ups

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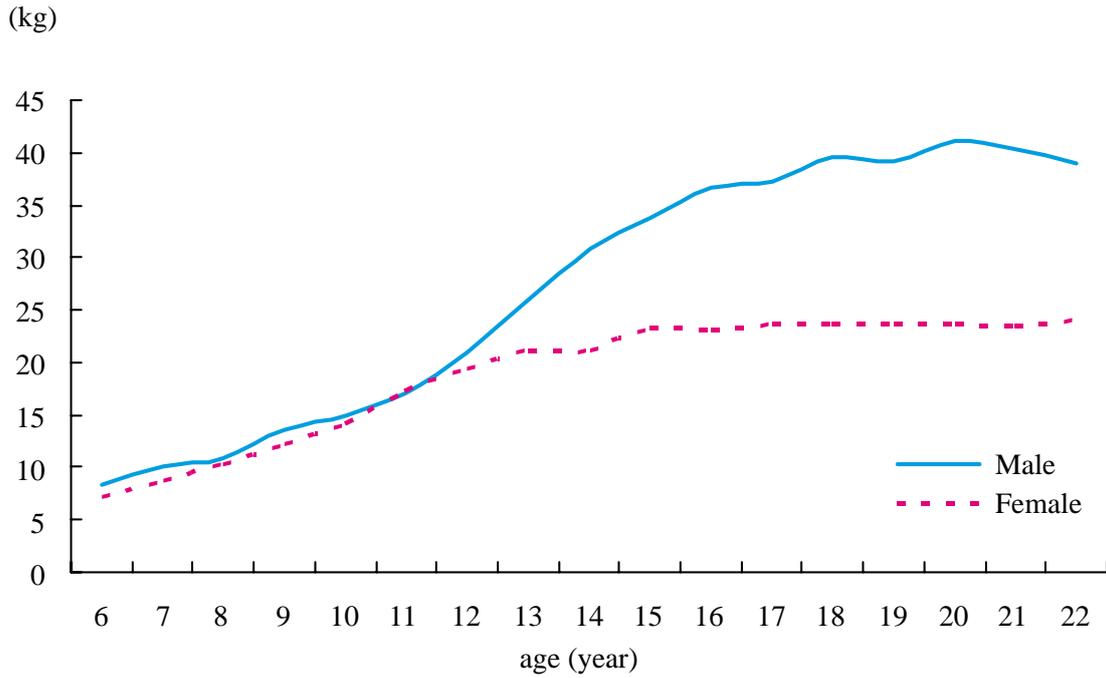


Figure 3-2-40 Grip strength

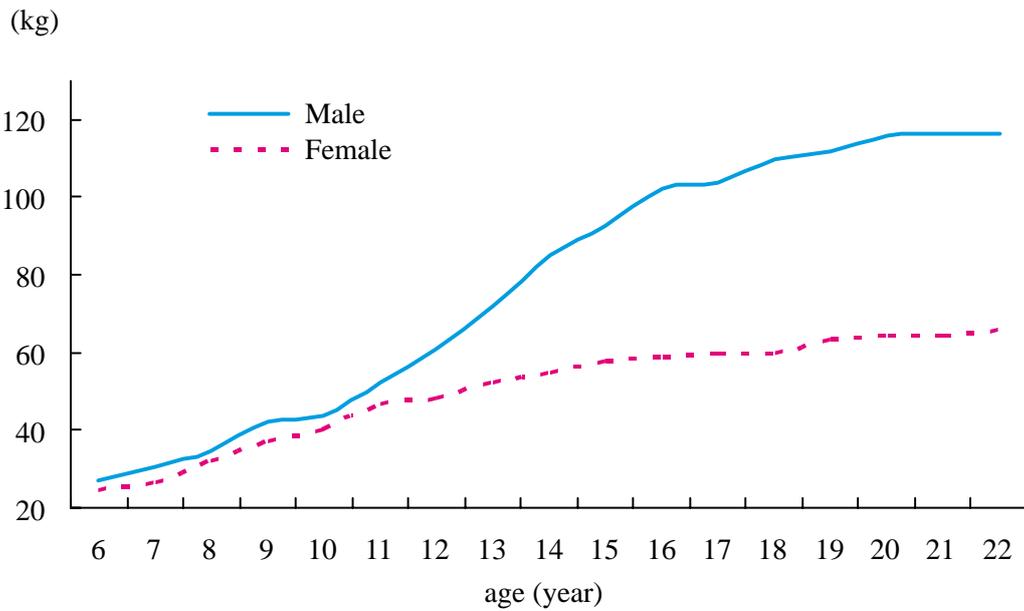


Figure 3-2-41 Back strength

### 3.2.5.3 Endurance run

The endurance of students aged 6~12 was reflected by the 50 m x 8 run back and forth, the endurance of male students aged 13~22 was reflected by 1000-m run and the endurance of female students aged 13~22 was reflected by 800-m run.

The average time for the male students to finish the 50 m x 8 run and 1000 m run ranged from 116.7~151.3 seconds and 271.7~301.4 seconds, respectively. The average time for the female students to finish the 50 m x 8 run and 800 m run ranged from 119.8~153.4 seconds and 272.7~289.6 seconds, respectively (table 4-2-2-2-69).

The endurance of males increased with age before age 19, whereas the endurance of females increased with age before age 17. After that, both of them decreased as age increased. No statistical difference was seen between males and females endurance before age 10 (figure 3-2-42, figure 3-2-43).

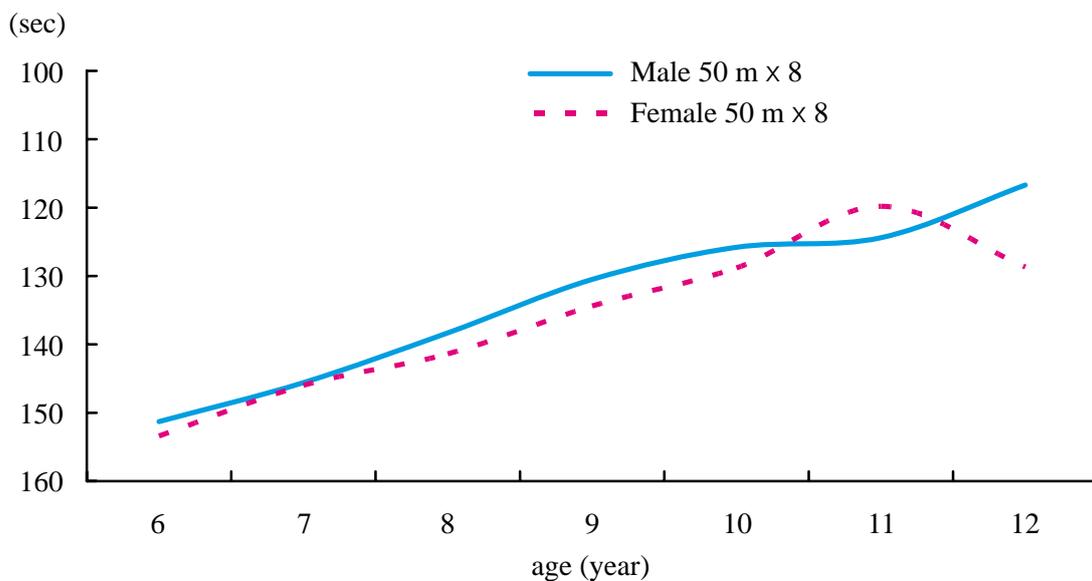


Figure 3-2-42 Endurance run

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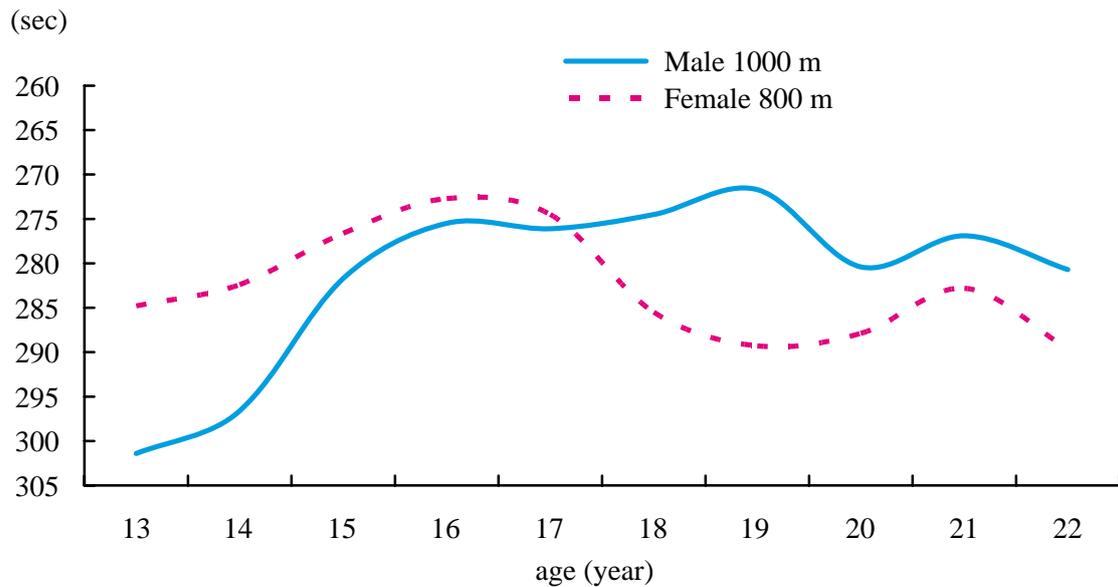


Figure 3-2-43 Endurance run

### 3.2.5.4 Flexibility

Sit and reach was used to reflect flexibility.

The average sit and reach of male and female students ranged from 0.3~6.3 cm and 4.6~7.4 cm (table 4-2-2-2-70). The males flexibility decreased as age increased between age 6~12, and increased with age after age 13. The females flexibility fluctuated as age increased, with the general tendency of decreasing. Females had better flexibility than males, especially among age 6~15, with a significant difference varying between 2 and 5 cm ( $P < 0.05$ ) (figure 3-2-44).

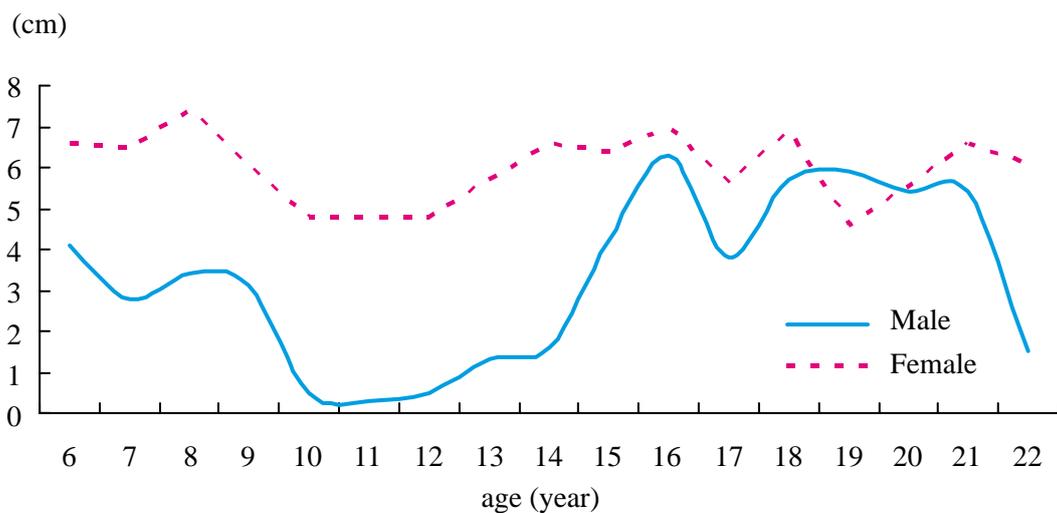


Figure 3-2-44 Sit and reach

### 3.2.5.5 Respond

Selective respond time was used to reflect the ability to react.

The males and females average respond time ranged from 0.38~0.60 sec and 0.41~0.62 sec, respectively (table 4-2-2-2-71). The males and females reaction ability improved as age increased, especially among age 6~12. During that period, the males and females selective respond time improved 0.19 second and 0.18 second, respectively. Males responded better than females, with little difference before age 12 and bigger difference afterwards (figure 3-2-45).

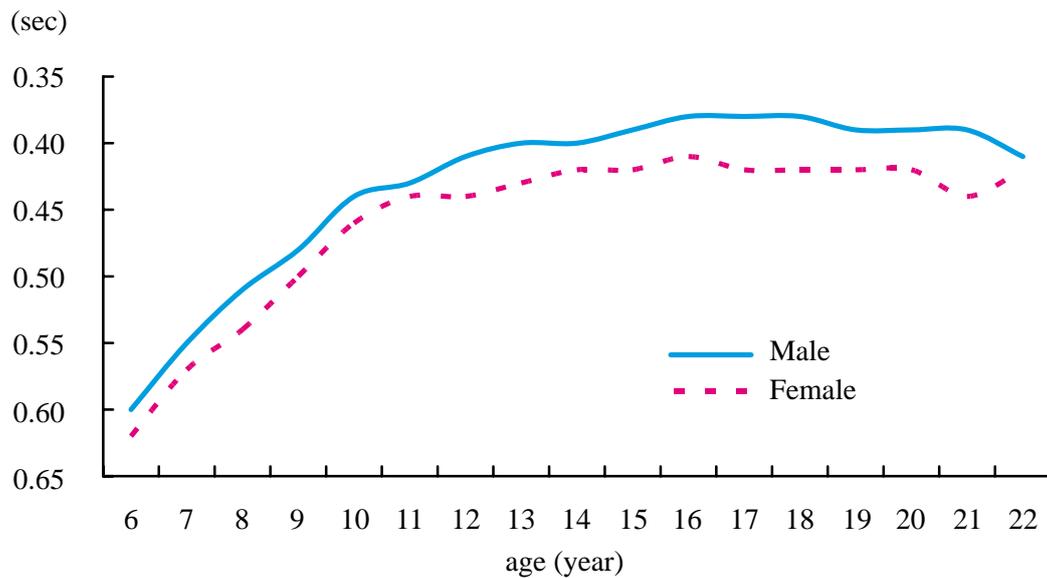


Figure 3-2-45 Respond time

### 3.2.5.6 Balance

One foot stands with eyes closed (OFSEC) was used to reflect balance ability.

The average time for the OFSEC of males and females ranged from 11.2~54.6 sec and 16.2~55.5 sec, respectively (table 4-2-2-2-72). The males balance ability kept increasing with age to nearly 4 fold. The females balance ability also increased with age before age 17 to nearly 3 fold, and then tended to decrease thereafter. The females balance ability was slightly better than males, but with no significant gender difference in most of the age groups (figure 3-2-46).

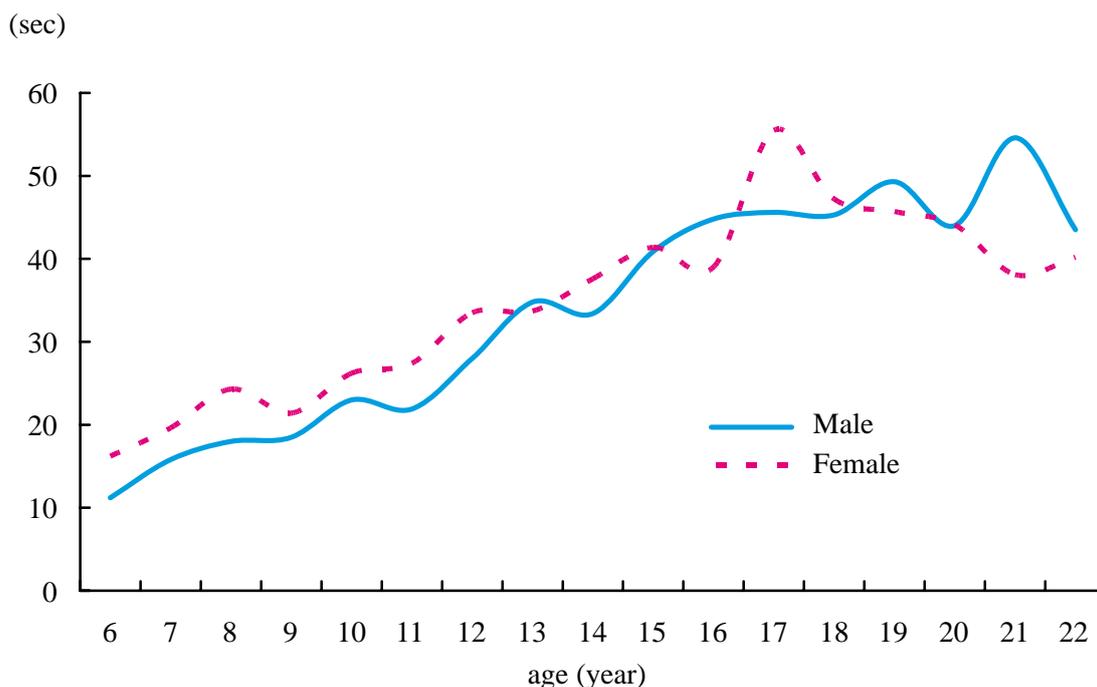


Figure 3-2-46 One foot stands with eyes closed (OFSEC)

### 3.2.6 Health

#### 3.2.6.1 Occurrence of decayed primary teeth

The dental decay of primary teeth of male and female students occurred mainly between age 6~12. With the substitution of primary teeth by permanent teeth, the proportion of primary teeth decay became 0.

The proportion of primary teeth dental decay of the students increased slightly between age 6 and 7, and declined gradually after age 7. The changes were similar for both males and females. The highest percentage 45.9% (males) and 46.7% (females) of dental decay occurred at age 7. The occurrence of primary teeth decay decreased to 12.2% at age 12, to 1.1% at age 13 and to 0% at age 14 for males. As for females, primary teeth dental decay reduced to 15.2% at age 11, to 5.8% at age 12 and to 0% thereafter. The percentage of primary teeth dental decay ranged from 0.0%~45.9% (males) and 0.0%~46.7% (females), respectively (table 4-2-2-2-73).

Percent of primary teeth dental decay was significantly higher in males than females ( $P < 0.05$ ), except at age 6 and 7. The largest gender difference in primary teeth decay was seen between age 9~12 ranging from 3.3%~6.4% (figure 3-2-47).

The percentage of decayed primary teeth being filled in males varied irregularly as age increased. The filled decayed primary teeth of males increased by 3.9% between age 6 and 7, and reached 10.8% at age 7 and decreased (except at age 10) to 0.5% at age 12 and to 0% thereafter. For female, the proportion of filled primary teeth varied more regularly, increasing gradually from age 6 to 8, reaching the maximum of 12.7%, and then declining gradually to 1.2% by age

12 and 13 and to 0% thereafter. The percentage of decayed primary teeth being filled ranged from 0.0%~10.8% (male) and 0.0%~12.7% (female) (table 4-2-2-2-73).

Females had a higher percentage of decayed primary teeth being filled than males at all ages, except at age 6 and 11. The difference was significantly larger at age 8 and 9, accounting for 3.5% and 2.4%, respectively ( $P<0.05$ ) (figure 3-2-48).

The percentage of decayed primary teeth loss of both males and females showed the “double-peak” phenomenon, and reached 25.4% (males) and 20.0% (females) at age 6. After that, decayed primary teeth loss decreased quickly to 9.2% at age 8, and increased to 18.9% at age 10, and then decreased quickly again to 0.5% at age 14 and to 0% thereafter. As for females, decayed primary teeth loss decreased to 13.3% at age 8, and then increased again to 17% at age 9, then decreased quickly to 1.2% at age 12 and to 0% thereafter. The males and females percentage for decayed primary teeth loss ranged from 0.0%~25.4% and 0.0%~20.0%, respectively (table 4-2-2-2-73).

Males at 6 (5.4%), 10 (7.9%) and 11 (6.9%) years old had significantly higher percentage of decayed primary teeth loss than females except at age 7, 8 and 9 ( $P<0.05$ ). On the other hand, females at 7 (5.6%), 8 (4.1%) and 9 (4.0%) years old had significantly higher percentage of decayed primary teeth loss ( $P<0.05$ ) (figure 3-2-49).

The percentage of primary teeth decay, loss and filled (dmf) decreased gradually as age increased for both males and females. The percentage of dmf accounted for 59.0% at age 6 for males, then begins to decreased to 13.3% at age 12, and to 1.1% and 0.5% at age 13 and 14, and to 0% thereafter. The percentage of dmf for females varied in the same way as the males, increasing slightly between age 6 and 7, reaching 57.6% at age 7, then beginning to decline slowly after age 8, and declined much more after age 11, to 1.2% at age 13 and to 0% thereafter. The percentage of dmf ranged from 0.0%~59.0% (males) and 0.0%~57.6% (females), respectively (table 4-2-2-2-73).

There were differences between males and females when compared within the same age group. Males had 8.5%~10.2% higher dmf than females between age 10 and 12 ( $P<0.05$ ) (figure 3-2-50).

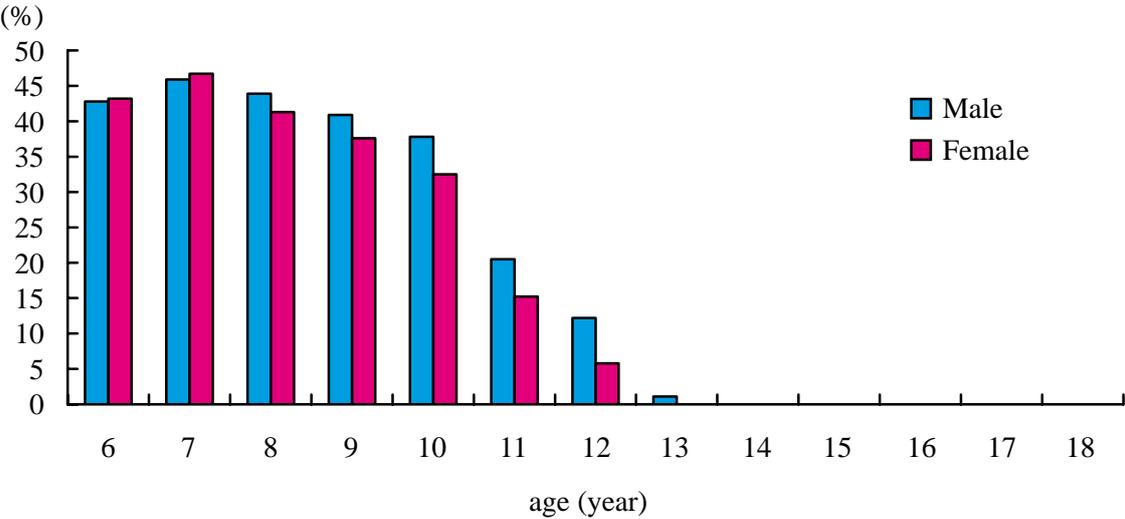


Figure 3-2-47 Proportion of primary teeth decay

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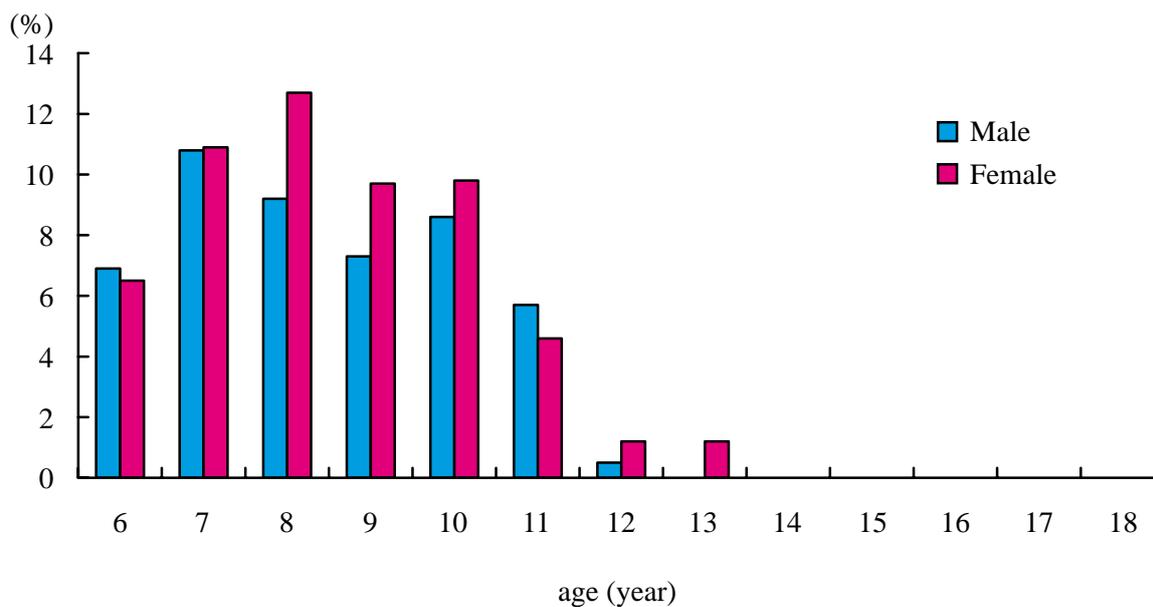


Figure 3-2-48 Proportion of decayed primary teeth filled

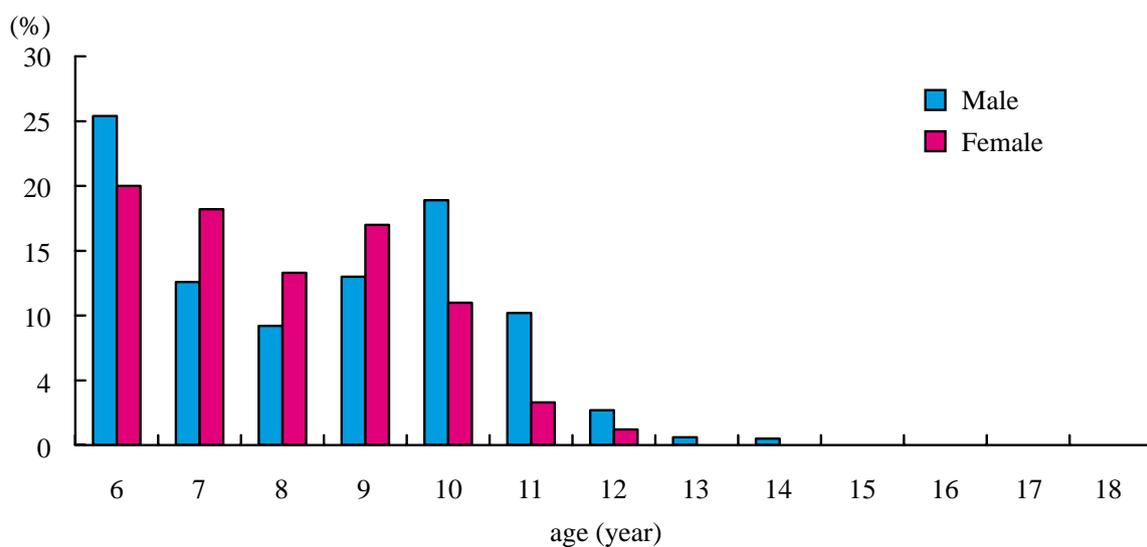


Figure 3-2-49 Proportion of decayed primary teeth loss

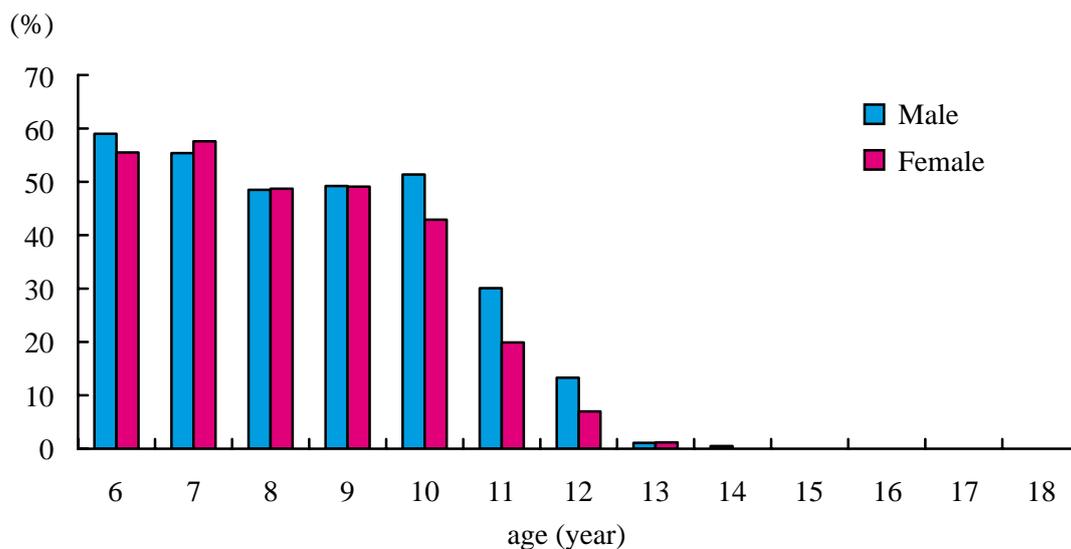


Figure 3-2-50 Proportion of decayed, loss and filled primary teeth (dmf)

### 3.2.6.2 Occurrence of decayed permanent teeth

The occurrence of dental decay in permanent teeth appeared at age 6, with an occurrence of 0.6% between age 6~18, and then increased with age. The percentage of permanent teeth dental decay increased quickly between age 6~7, 8~9, 11~12 and 17~18, reaching the highest percentage (35.8%) by age 18. The changes were larger between age 6~8 and 9~14 for females, reaching the maximum (37.7%) at age 14, and then declined slowly as age increased till age 17, and then increased again to 32.7% at age 18. The proportion of permanent teeth dental decay ranged from 0.6%~35.8% (male) and 0.6%~37.7% (female), respectively (table 4-2-2-2-74).

Females had 1~12% higher dental decay in permanent teeth than males, except at age 7, 9 and 18 (males slightly higher than females). The difference was significant at age 11~16 groups, accounting for 4.2~12.0% ( $P < 0.05$ ) (figure 3-2-51).

The percentage of decayed permanent teeth filled were 1.4% (males) and 1.2% (females) and this appeared only at age 7, and then increased slowly with age. The male percentage increased quickly from 20.1% to 36.7% between age 16 and 17, and then decreased slightly to 34% at age 18. The female percentage increased between age 10~11, 12~13 and 16~17, reaching a maximum of 46.7% at age 17, and then decreased slowly to 40.3% between age 17 and 18. The male and female percentage ranged from 0.0%~36.7% and 0.0%~46.7%, respectively (table 4-2-2-2-74).

Female's percentage of decayed permanent teeth was higher than males, with the exception at age 7 and 10 (males slightly higher than females). For age 13~17 groups, 9.5~13.6% difference was found between males and females ( $P < 0.01$ ) (figure 3-2-52).

The appearance of decayed permanent teeth loss was at age 6 (males) and 7 (females), at the proportion of 1.2% and 0.6%, respectively. The percentage increased slowly with age and reached a maximum of 5.6% and 11.9% by age 18. Percentage increased was obvious at

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age 15~18 females groups (3.0%~11.9%). The male and female decayed permanent teeth loss ranged from 0.0%~5.6% and 0.0%~11.9%, respectively (table 4-2-2-2-74).

The percentage of decayed permanent teeth loss was higher in females than males (except age 6, 13 and 14), but the difference was not significant. However, between age 17~18, females had a significantly higher percentage of decayed permanent teeth loss than males ( $P<0.05$ ). The difference between males and females at other age groups was within 1% (figure 3-2-53).

The occurrence of DMF was seen at age 6 for both males and females, with the proportion of 1.7% and 0.6%, respectively, and then increased gradually. The percentage of DMF for males reached a peak (57.4%) at age 18. The increase was obvious between age 6~7, 8~9, 11~12 and 16~17. The change with age was similar in both females and males. For females, DMF reached the peak (65.9%) at age 17 and was 60.4% at age 18. The male and female DMF ranged from 1.7%~57.4% and 0.6%~65.9%, respectively (table 4-2-2-2-74).

DMF was higher in females than males with the exception at age 6, 7 and 9 (males slightly higher than females). The difference (9.3%~16.5%) in DMF between males and females was significant at age 11~17 groups ( $P<0.05$ ) (figure 3-2-54).

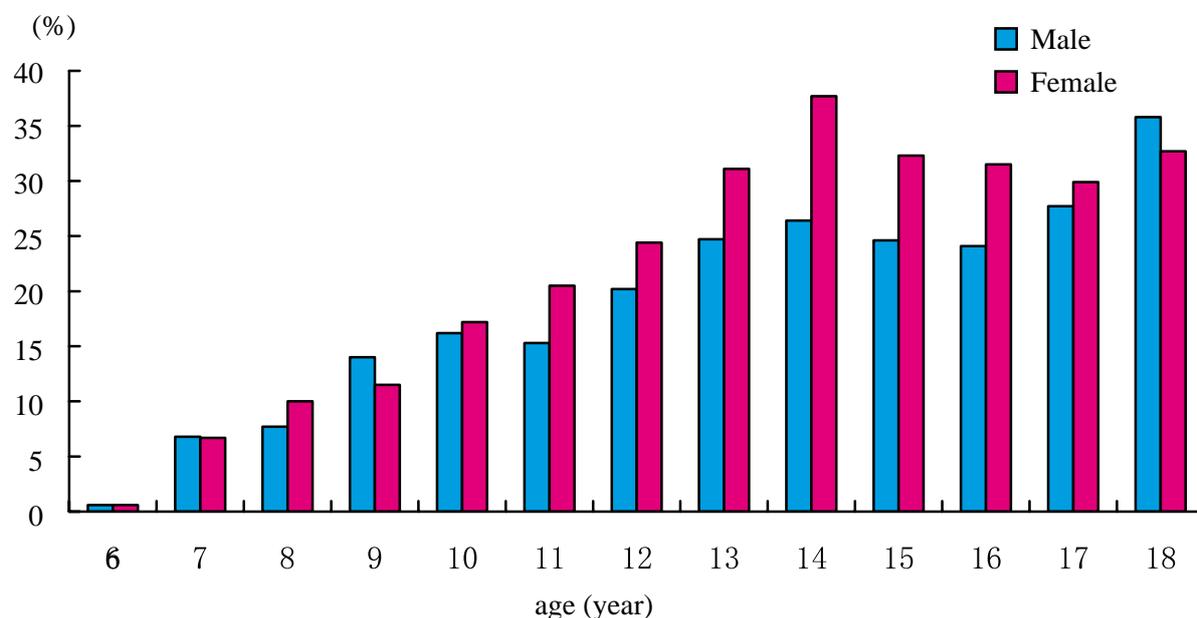


Figure 3-2-51 Proportion of permanent teeth decay

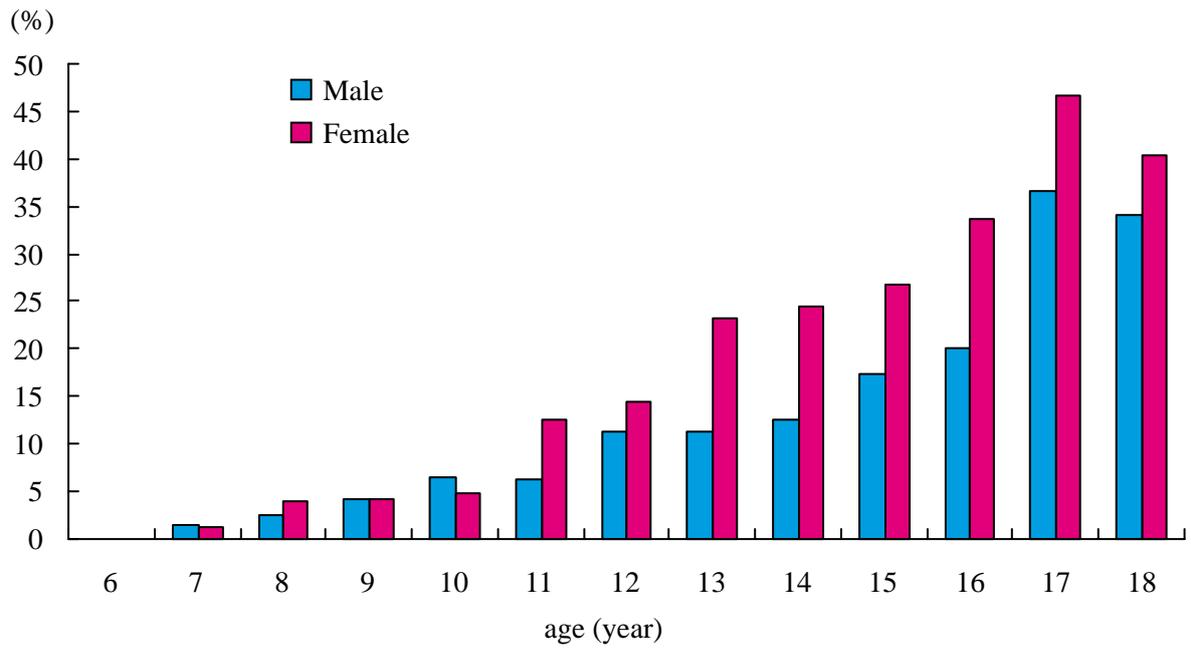


Figure 3-2-52 Proportion of decayed permanent teeth filled

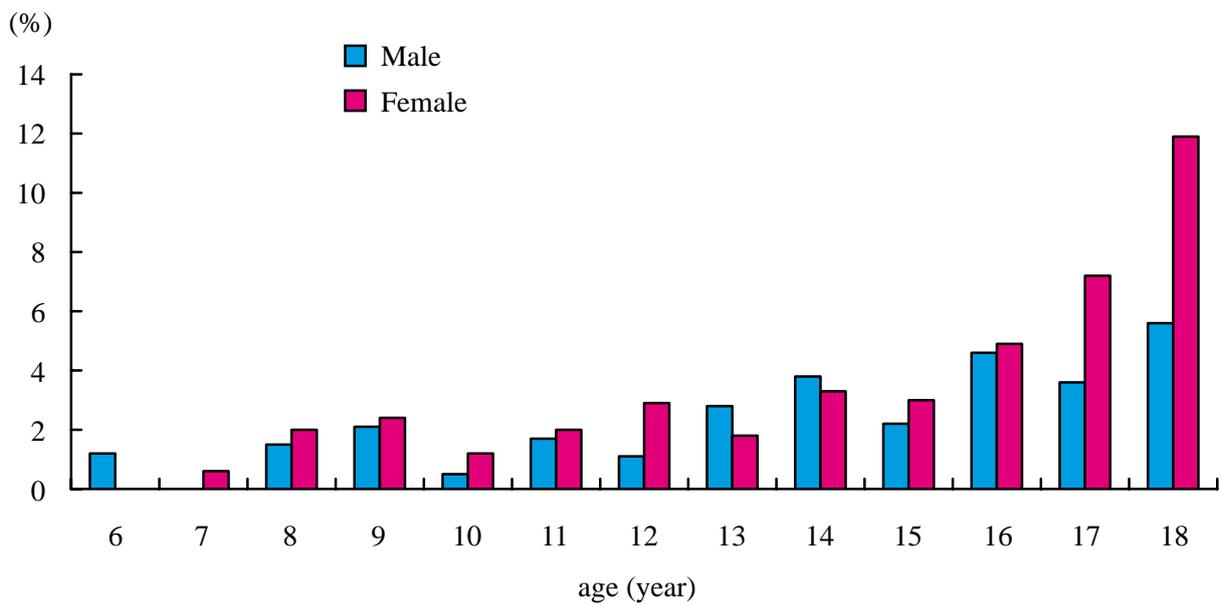


Figure 3-2-53 Proportion of decayed permanent teeth loss

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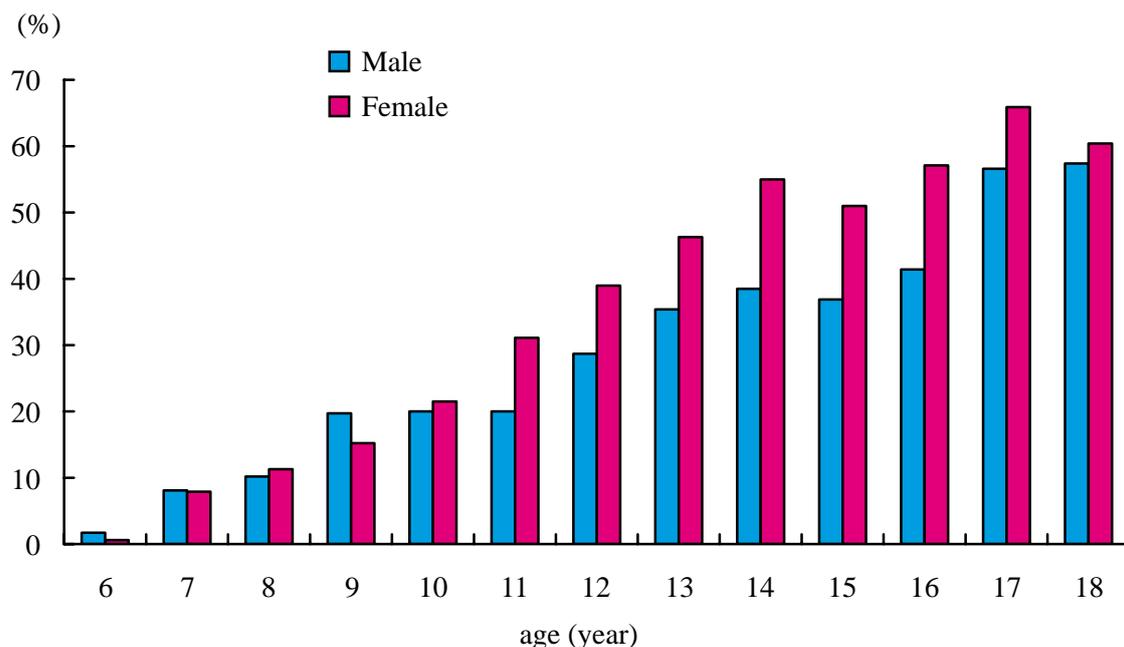


Figure 3-2-54 Proportion of decayed, loss and filled permanent teeth (DMF)

### 3.2.6.3 Poor eyesight

Poor eyesight means the eyesight below 5.0 without using glasses or contact lens. An eyesight of 4.9 is considered as mild poor eyesight, eyesight within 4.6~4.8 is considered as moderate poor eyesight and the eyesight below or equal to 4.5 is severe poor eyesight. If the eyesight was different in different eyes, the one with poorer eyesight was used. A subject was considered as a unit when doing the analysis.

The percent poor eyesight increased slowly from age 6~22, reaching a maximum of 83.3% at age 19 in males. The percent poor eyesight was lowest at age 7 (32.9%), and the increase was greatest in age 9~10 (10.6%) and 11~12 (8.2%) groups. Poor eyesight decreased slightly after age 21, but remained at about 70%. The percent poor eyesight for males ranged from 32.9%~83.3% (table 4-2-2-2-75, figure 3-2-55).

For males, the peak (19.1%) for mild poor eyesight appeared at the age of 6. More than 20% of moderate poor eyesight occurred at age 6, 10, 19 and 22. Severe poor eyesight increased quickly with age, reaching the peak percentage at age 18 (61.7%) and 20 (61.6%). The percentage of mild, moderate and severe poor eyesight ranged from 2.0%~19.1%, 10.6%~22.0% and 7.5%~61.7%, respectively (table 4-2-2-2-76).

For females, percent poor eyesight was 54.2% at age 6, and then decreased slightly to 38.7% at age 8. Percent poor eyesight increased slowly, reached a maximum of 86.6% at age 19 and remained at about 80% at age 18~22. Percent poor eyesight ranged from 38.7%~86.6% (table 4-2-2-2-75, figure 3-2-55).

Percent mild poor eyesight for females was 18.7% at age 6, decreased as age increased.

Moderate eyesight fluctuated among age groups, with the highest percentage at age 6 (28.4%) and the lowest percentage at age 21 (5.8%). Severe poor eyesight increased quickly with age, reaching the peak (73.6%) at age 19 and remained over 65% after age 20. The female percentage of mild, moderate and severe poor eyesight ranged from 1.3%~18.7%, 5.8%~28.4% and 7.1%~73.6% respectively (table 4-2-2-2-76).

Females had higher percentage of poor eyesight compared to males, with the exception at age 8 and 10. The smallest difference (0.9%) between males and females was seen at age 18, and the largest difference (>10%), which was significant, was found at age 7, 13, 14 and 22 (P<0.05) (figure 3-2-55).

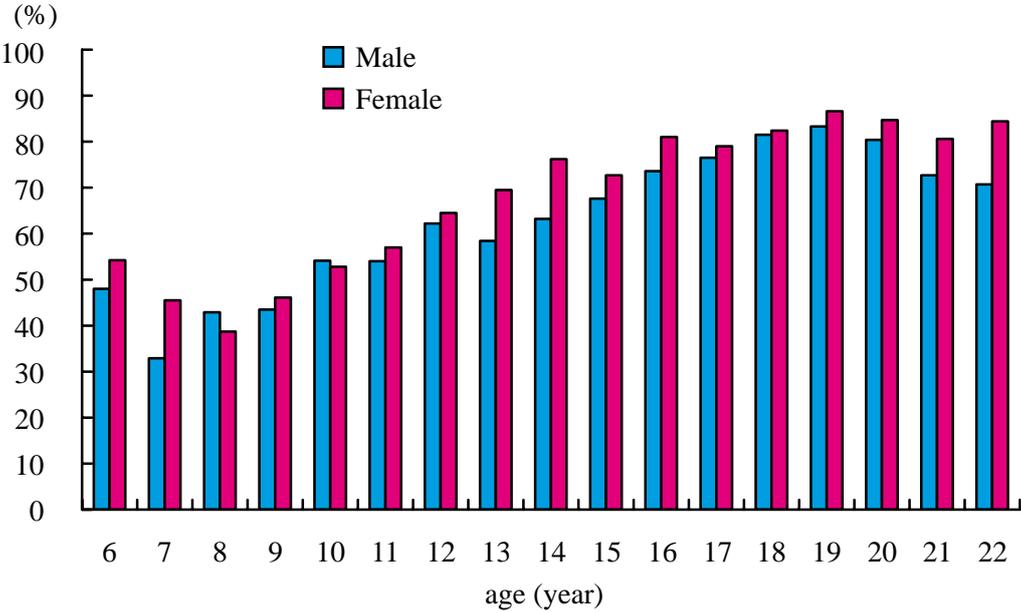


Figure 3-2-55 Proportion of poor eyesight

**3.2.6.4 Nearsightedness**

String mirror is used to test if a person with poor eyesight has refractive errors. When positive eyesight decreases and negative eyesight improves, it is considered as nearsighted. In the study, the change in percent nearsighted with age was similar between males and females. With the exception of a big decrease between age 6 and 7, male percent nearsighted continued to increase between age 7~19 (except at age 13), especially the age 7~8, 9~10 and 11~12 groups, reaching the peak (80.8%) at age 19. Percent nearsighted decreased slowly with age afterwards, but still remained at a high percentage of about 70%. The female ratio of nearsightedness declined slightly between age 7 and 8, then raise quickly to a maximum (85.8%) at age 19, and then remained at a high percentage of about 80%. The male and female percentage of nearsightedness ranged from 29.3%~80.8% and 37.3%~85.8%, respectively (table 4-2-2-2-75).

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The percent of nearsightedness was significantly higher in females than males ( $P < 0.05$ ), except at age 8, 10 and 12. The difference between males and females was greatest (16.1%) at age 22. At age 7, 13 and 14, the difference also exceeded 10% (figure 3-2-56).

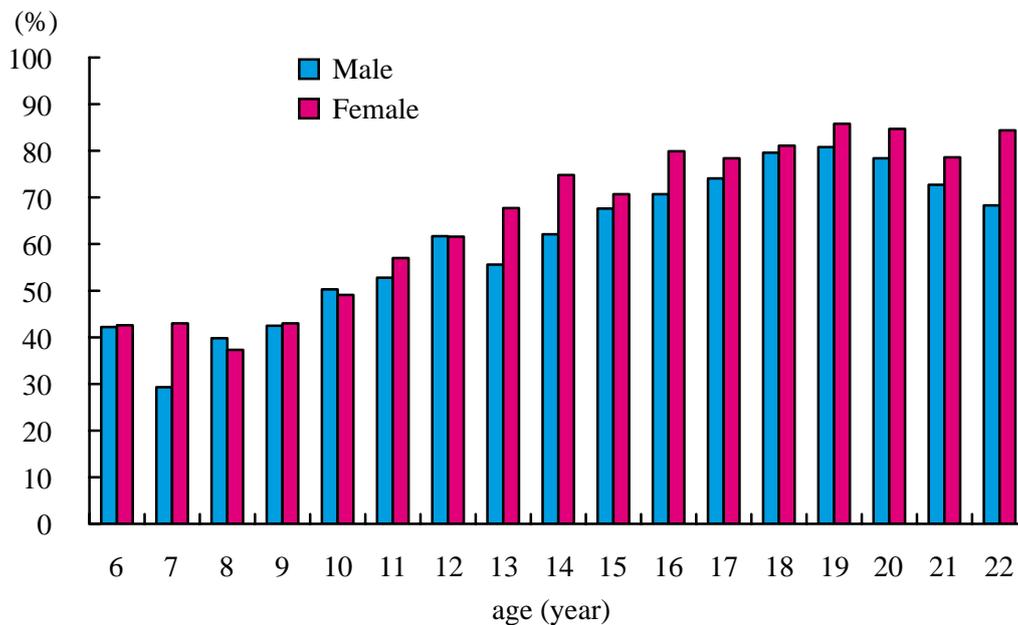


Figure 3-2-56 Proportion of nearsightedness

### 3.2.6.5 Color vision

Color vision is used to reflect the children and adolescents' ability to distinguish colors.

The percent of male with abnormal color vision showed a 'U'-shaped curve across age, and fluctuated among age groups, with a difference from each other. Abnormal color vision accounted for 3.5% for age 6 male students, which declined gradually as age increased, to 0% at age 10, and increased slowly to 2.5% at age 19, and quickly to 4.9% at age 20, then declined slightly to 3.0% at age 21 and then increased again to a maximum of 6.1%. Abnormal color vision of the female students was 0.6% and only appeared at age 6 and 9. For the other age groups, it accounted for 0%. Percent abnormal color vision for male and female students a ranged from 0.0%~6.1% and 0.0%~0.6%, respectively (table 4-2-2-77).

There was a difference in percent abnormal color vision between male and female students (figure 3-2-57).

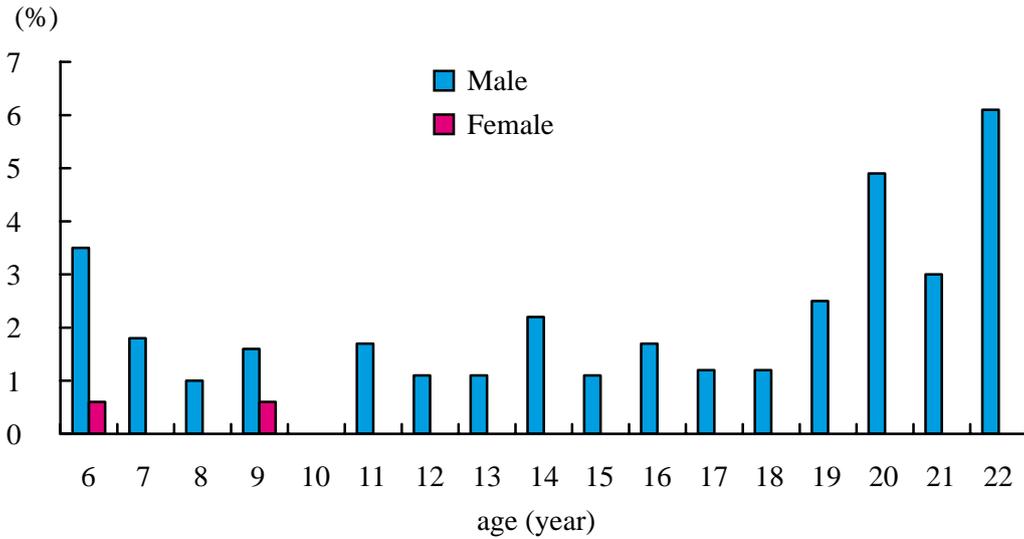


Figure 3-2-57 Color vision

### 3.2.6.6 Hearing

Hearing means a person's hearing ability in a quiet environment.

For age 13~22 groups, the hearing of both male and female students was basically normal, with the exception of some specific age groups, where adolescents' hearing declined. Right ear abnormal hearing was detected in 0.6% and 0.8% of the male students aged 13 and 19, respectively. While 0.5%, 1.0% and 1.1% of aged 16, 21 and 22 female students, respectively, had abnormal hearing in right ears. Other age groups had 0% abnormal hearing (table 4-2-2-2-78, figure 3-2-58, figure 3-2-59).



Figure 3-2-58 Abnormal hearing of left ear

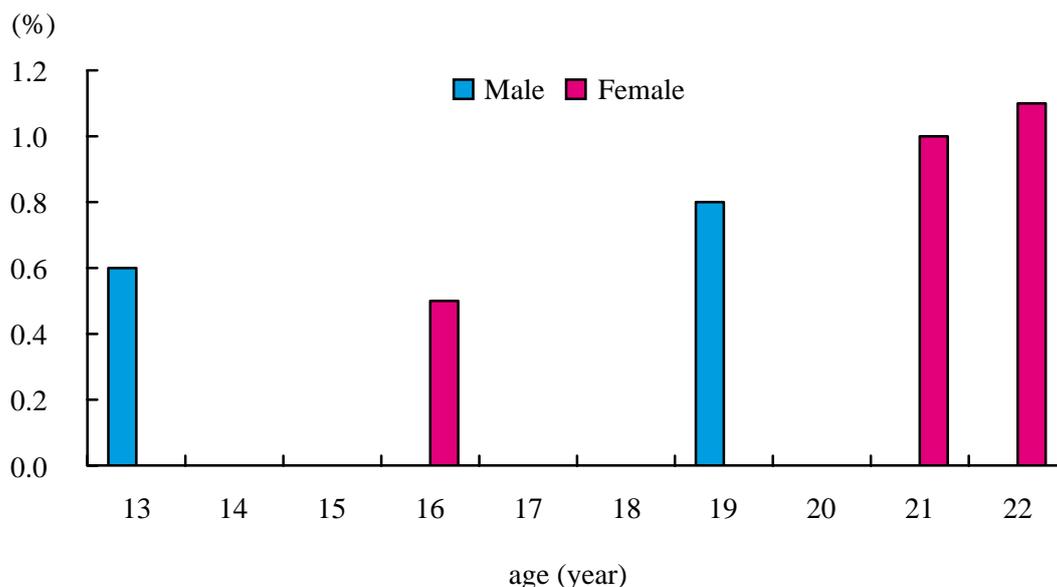


Figure 3-2-59 Abnormal hearing of right ear

### 3.2.7 Summary

To conclude, the growth and development of body shapes of Macao children and adolescents (aged 6~22) was mainly marked by the rapid puberty growth. Height, sitting height, foot length, shoulder and pelvis widths and other indexes had completed or nearly completed growing. Compared with height, the foot length was the first to finish growing. While the growth rate of height slowed down and weight continued to increase promptly, BMI increased year after year. The growth rate of waist circumference was behind that of the hip circumference, resulting in decreased WHR as age increased. Besides, as the hip circumference of males and females were similar, and the waist circumference of males was significantly larger than females, male WHR was significantly larger than females. Percent body fat and skinfold thickness of both males and females varied in the same way with age, but the change in lean weight with age was different. When percent body fat decreased or remained the same in males, the lean weight continued to increase. Lean weight remained constant when percent body fat increased in females. This indicated that when weight increased, it was mainly due to the increase in lean weight in males and the increase in body fat in females.

The overall physiological function increased apparently with age, as displayed by the decreased resting pulse and the increased blood pressure and vital capacity, which were apparent characteristics during the rapid growth of puberty. A significant difference was seen in physiological functions between genders, as indicated by resting pulse, blood pressure and vital capacity. Female physiological functions improved mildly with age.

The physical fitness increased with age, and some indicators expressed 4 folds increased. Among all the physical fitness indexes, speed increased in the same way as explosive force and maximum force. The female strength endurance varied in the same way as the endurance run.

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Speed, strength and respond ability were better in male than female students. However, females had better flexibility than males. There was no significant difference in balance ability between genders. The difference in speed, strength and endurance between males and females increased with age, especially for strength.

In terms of health indexes including permanent teeth decay (D), decayed permanent teeth filled (F), loss (M), DMF and poor eyesight, these proportion increased with age. Some indexes had a significant difference between genders. No obvious change with age was seen in the percent abnormal color vision and hearing. What needed to be emphasized was the apparent increase of nearsightedness with age, which drew the attention of different parties.

### 3.3 Adults

#### 3.3.1 Basic Information of the Subjects

Adult subjects were separated into two groups, labor-intensive and non-labor intensive workers, and further divided according to gender and age, with a five-year difference in each age group, i.e. 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54 and 55-59, altogether 32 groups.

The adult subjects of labor-intensive and non-labor intensive workers were randomly drawn from 30 government and private institutions in Macao (11 government institutions and 19 private ones), of which 941 subjects were from Macao Government (495 males and 446 females) and 2667 subjects were from private institutions (1095 males and 1572 females) (table 4-3-1-3-1). Non-labor intensive workers were mainly composed of technicians and assistant professionals, professionals and office staff. The proportion of the three different types of occupation was 92.7% males and 95.8% females. Labor intensive workers were composed of service representatives, sales and workers of the same category, non-technicians, machine and platform operators, and drivers, assemblers and others. The proportion of the four different types of occupation was 90.6% males and 96.0% females (table 4-3-1-3-2).

In the north area (Paróquia de Nossa Senhora de Fátima), 1227 subjects (518 males and 709 females) were sampled as labor intensive and non-labor intensive workers. In the central area (Paróquia de Santo António and Paróquia de S. Lázaro), 1153 subjects (501 males and 652 females) were sampled as labor intensive and non-labor intensive workers. And in the south area (Paróquia de São Francisco Xavier, Paróquia de Nossa Senhora do Carmo, Paróquia de S.Lourenço and Paróquia da Sé Catedral), 1228 subjects (571 males and 657 females) were sampled as labor intensive and non-labor intensive workers (table 4-3-1-3-3).

The number of subjects in each adult age group was shown in table 3-3-1 and the number of labor intensive and non-labor intensive workers combined was shown in table 3-3-2.

Table 3-3-1 Samples of each adult age group

| Age Group<br>(Years of age) | Occupation          | Male | Female | Total      |
|-----------------------------|---------------------|------|--------|------------|
| 20~24                       | Non-labor intensive | 99   | 103    | <b>202</b> |
|                             | Labor intensive     | 89   | 96     | <b>185</b> |
| 25~29                       | Non-labor intensive | 98   | 131    | <b>229</b> |
|                             | Labor intensive     | 93   | 89     | <b>182</b> |
| 30~34                       | Non-labor intensive | 94   | 130    | <b>224</b> |
|                             | Labor intensive     | 100  | 90     | <b>190</b> |
| 35~39                       | Non-labor intensive | 95   | 120    | <b>215</b> |
|                             | Labor intensive     | 97   | 94     | <b>191</b> |
| 40~44                       | Non-labor intensive | 99   | 178    | <b>277</b> |
|                             | Labor intensive     | 102  | 158    | <b>260</b> |
| 45~49                       | Non-labor intensive | 99   | 175    | <b>274</b> |
|                             | Labor intensive     | 132  | 179    | <b>311</b> |
| 50~54                       | Non-labor intensive | 106  | 133    | <b>239</b> |
|                             | Labor intensive     | 103  | 150    | <b>253</b> |
| 55~59                       | Non-labor intensive | 87   | 94     | <b>181</b> |
|                             | Labor intensive     | 97   | 98     | <b>195</b> |

Table 3-3-2 Sample size of labor intensive and non-labor intensive workers combined

| Age Group<br>(Years of age) | 20~24      | 25~29      | 30~34      | 35~39      | 40~44      | 45~49      | 50~54      | 55~59      |
|-----------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Male                        | 188        | 191        | 194        | 192        | 201        | 231        | 209        | 184        |
| Female                      | 199        | 220        | 220        | 214        | 336        | 354        | 283        | 192        |
| <b>Total</b>                | <b>387</b> | <b>411</b> | <b>414</b> | <b>406</b> | <b>537</b> | <b>585</b> | <b>492</b> | <b>376</b> |

Among the 3,608 adult subjects, 50.3% males and 45.3% females were born in Macao, 40.1% males and 46.5% females were born in Mainland China; and the places of birth had shown an age related trend, i.e., the proportion of people born in Mainland China increased as age increased (table 4-3-1-3-4). As for educational level, secondary education (secondary school and university) accounted for the highest proportion (72.3% for males and 69.7% for females), and elementary education (primary school and under) accounted for the lowest proportion (22.5% for males and 26.5% for females). About 5% (5.2% for males and 3.8% for females) of the subjects possessed master degrees or higher. In addition, a significantly higher proportion of subjects under the age of 39 possessed an associate or university degree than subjects over the age of 40 ( $P < 0.01$ ). Subjects with master degrees were mainly in the 25~45 age groups (table 4-3-1-3-5).

Working indoors accounted for the highest proportion, with 76.6% males and 95.4% females. 53.1% males and 61.4% females worked in “air conditioned” environment for long period of time. The proportion of females working indoors was significantly higher than that of males ( $P < 0.01$ ). As age increased, the proportion of those who worked in “air conditioned” environment tended to decrease while the proportion of those who worked in “naturally ventilated” environment tended to increase. Only 4.6% females normally worked outdoors while 23.3% males worked outdoors (table 4-3-1-3-6).

Among the studied adults, 67.9% males and 53.6% females normally worked for 35~50 hours per week, among which the highest proportion was the 35~45 age group for males and the 25~34 age group for females. However, 9.2% males and 12.2% females worked for an average of less than 20 hours or between 20~35 hours each week. The proportion of “non-working” females (19.2%) was significantly higher than that of the males (4.8%) ( $P < 0.01$ ). The proportion of “non-working” males tended to be “high at both ends” across age. And the proportion of “non-working” females tended to increase as age increased after age 40. In the 55~59 age group, 50% of the females did not work. The proportion for male adults who worked over 50 hours (18.2%) was significantly higher than that of females (14.9%) ( $P < 0.05$ ). The 25~34 age groups had the highest proportion of males who worked over 50 hours. For females, no apparent difference was observed among age groups between 20~54 (table 4-3-1-3-7).

### 3.3.2 Lifestyle

In the adult (age 20~59) category, habit, physical exercise, occurrence of diseases and understanding of the fitness testing were examined.

### 3.3.2.1 Habits

Habits included daily sleeping hours and sleeping quality, accumulated walking and sitting hours, ways of doing activities during leisure time, smoking and alcohol consumption.

Most adults slept for an average of 6~9 hours daily (83.1%), 13.4% slept for less than 6 hours, and only 3.5% slept for 9 hours and above. There was no gender difference in sleeping hours. As age increased, the sleeping hours gradually decreased (table 4-3-1-3-8). 65% of the adults considered their sleeping quality to be satisfactory. More males considered their sleeping quality to be satisfactory than females ( $P<0.05$ ). The proportion of adults who had low sleeping quality went up gradually with age (table 4-3-1-3-9).

As for average daily walking hours (excluding walking during physical exercise), 36.1% walked less than 30 minutes, 33.9% walked for 30~60 minutes, 30% walked for one hour or more. The proportion of females who walked for more than one hour daily was higher than that of males ( $P<0.05$ ). The walking hours tended to increase with age (table 4-3-1-3-10).

16.4% of the adult subjects sat for an average of accumulatively less than 3 hours daily, 40.2% for 3-6 hours, 25.2% for 6~9 hours and 18.2% for above 9 hours. No significant difference was seen between males and females in the average daily sitting time. As age increased, the daily sitting hours tended to decrease (table 4-3-1-3-11).

The most popular activity during leisure time was audio-visual entertainment (67.6%). Other than that, other popular activities in descending orders for males were physical exercise, sleep replenishing, traveling, gathering and housework while the descending order for females was housework, sleep replenishing, gathering and physical exercise.

The types of leisure time activity chosen differed by age groups. With the exception of audio-visual entertainment, the proportion of males choosing traveling, gathering and sleep replenishing decreased as age increased, but housework and physical exercise increased. The major activities for females aged 20~29 were audio-visual entertainment, gathering, and sleep replenishing. After age 35, the most frequent leisure activity for females was housework, followed by audio-visual entertainment. Physical exercise also gradually became one of the major activities for females at age 45~59 (table 4-3-1-3-12).

Our study showed that 27.5% males and 4.3% females currently had smoking habit. The proportion of male smokers of different ages did not vary much, but females tended to smoke less as age increased (figure 3-3-1).

Regarding the daily smoking amount, 46.6% males smoked less than 10 cigarettes per day, 39.2% males smoked 10-20 cigarettes per day and 14.2% males smoked above 20 cigarettes, whereas 71.6% females smoked less than 10 cigarettes per day. As age increased, the proportion of male smokers who smoked less than 10 cigarettes per day decreased, whereas those who smoked above 10 cigarettes per day increased. The amount of smoking in different age groups remained at less than 10 cigarettes per day for females (table 4-3-1-3-13).

Among smokers (current and past smokers), 43.0% males had smoked for over 15 years, accounting for the highest proportion, while most females, 42.7%, had smoked less than 5 years

(table 4-3-1-3-14). As for smoke quitters, 4.9% males had quit smoking for less than 2 years, 15.2% for above 2 years. More males at above age 40 (21.3%) had quit compared to those before age 40 (8.2%) ( $P<0.05$ ). Among female smokers, 2.9% had quit smoking for less than 2 years and 11.7% for above 2 years (table 4-3-1-3-15).

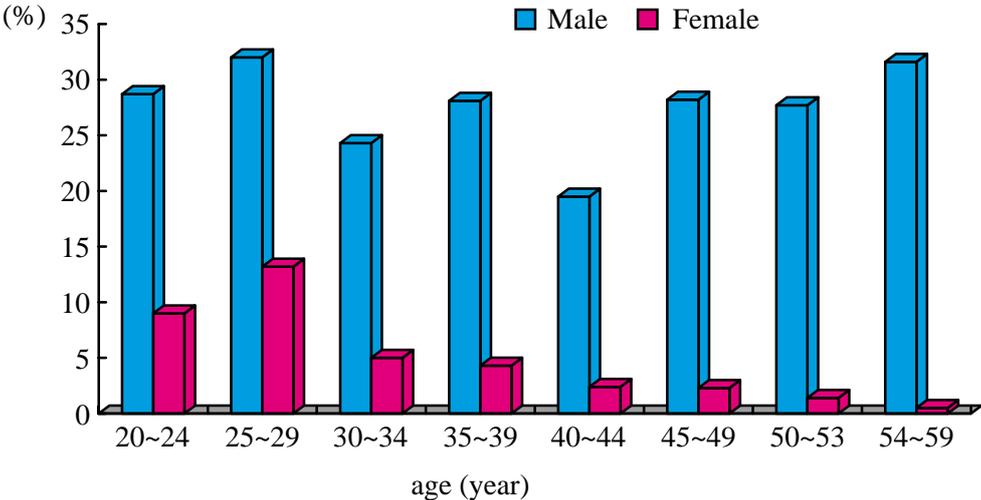


Figure 3-3-1 Current smokers

48.3% males and 17.7% females had drinking history, and the difference between genders was significant ( $P<0.05$ ). Males in the 20~24 and 35~54 age groups accounted for the highest proportion that drank (50%). And the 25~34 and 55~59 age groups accounted for a comparatively low proportion (45%). The proportion of female drinkers decreased as age increased (figure 3-3-2 and table 4-3-1-3-16).

Among drinkers, 34.0% males consumed alcohol 1~2 times a week, 12.1% consumed alcohol 3~4 times a week, and only 10.0% consumed alcohol 5~7 times a week. For females, drinking once a month accounted for the highest proportion (71.2%) (table 4-3-1-3-17). Most adults drank beer (65.7%), followed by wine or fruit wine (19.8%). The types of alcohol chosen by the subjects were generally the same within age groups and between genders. The consumption of wine or fruit wine increased at the age 50~59 (table 4-3-1-3-18).

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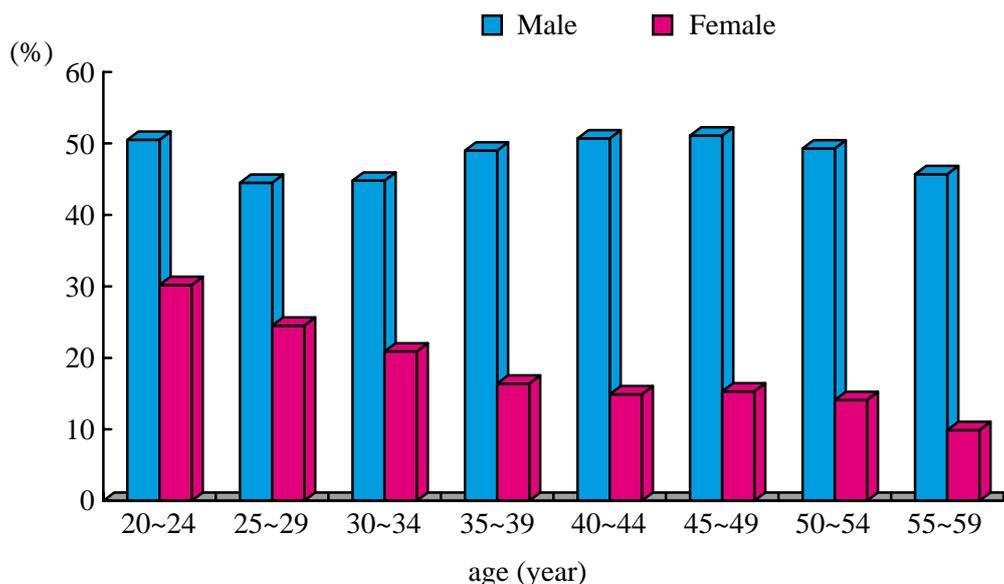


Figure 3-3-2 Alcohol consumption

### 3.3.2.2 Physical exercise

Among the studied adults, 63.6% participated in physical exercise and most of them exercised less than twice a week (61.7%), with each time lasting for more than 30 minutes (61.6%), and with a moderate intensity level (58.1%). In addition, continued exercising for less than 1 year accounted for the highest proportion (47.5%) and 26.4% continued for above 5 years. Exercise frequency and duration differed between genders. More females (39.9%) exercised for more than 3 times a week compared to males (36.6%) ( $P < 0.05$ ). On the other hand, more males (65.4%) exercised for 30 minutes or more each time compared to females (58.3%) ( $P < 0.05$ ). The proportion of males doing high intensity exercise (27.7%) was higher than females (18.6%), and the proportion of males who continued exercising for above 5 years (34.1%) was also higher than females (19.6%) ( $P < 0.05$ ). As age increased, weekly exercising frequency increased, but each exercising duration and intensity tended to decrease. Persistence to continue exercising increased with age (table 4-3-1-3-19, table 4-3-1-3-20, table 4-3-1-3-21 and table 4-3-1-3-22).

The subjects were classified into frequent, occasional and non-exercisers, according to weekly exercise frequency, exercise duration and intensity (see “Part II. Children and Adolescents” for definitions). The result showed that frequent exerciser accounted for 13.6%, occasional exerciser accounted for 50% and non-exerciser accounted for 36.4%. There was a significant gender difference in the proportion of frequent, occasional and non-exercisers. Frequent and occasional exercisers accounted for a higher percentage in males (13.7% and 53.8%, respectively) than females (13.5% and 47.0%, respectively) ( $P < 0.05$ ). Males and females appeared to have different characteristics on physical exercise at different age groups. For males, the proportion of frequent exercisers increased while occasional exercisers decreased as age increased. The percentage of non-exercisers did not vary greatly in each age group

and had a slight increase at age 50~59. For females, the proportion of frequent exercisers increased while occasional exercisers and non-exercisers decreased as age increased (figure 3-3-3 and figure 3-3-4).

Frequent exercisers usually possessed good exercising habits and a long history of exercising. 38.3% of frequent exercisers had been exercising for 1~5 years and 42.8% for above 5 years. Occasional exercisers had a rather short history of exercising, with 55.1% kept exercising for less than 1 year. Compared to females, more males had a history of exercising for more than 3 years ( $P<0.05$ ).

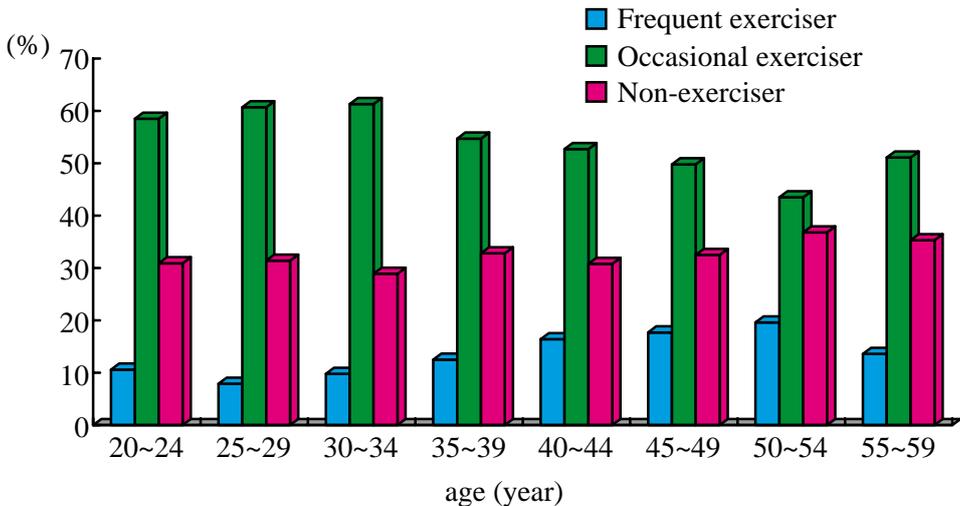


Figure 3-3-3 Frequent, occasional and non-exercisers among adult males

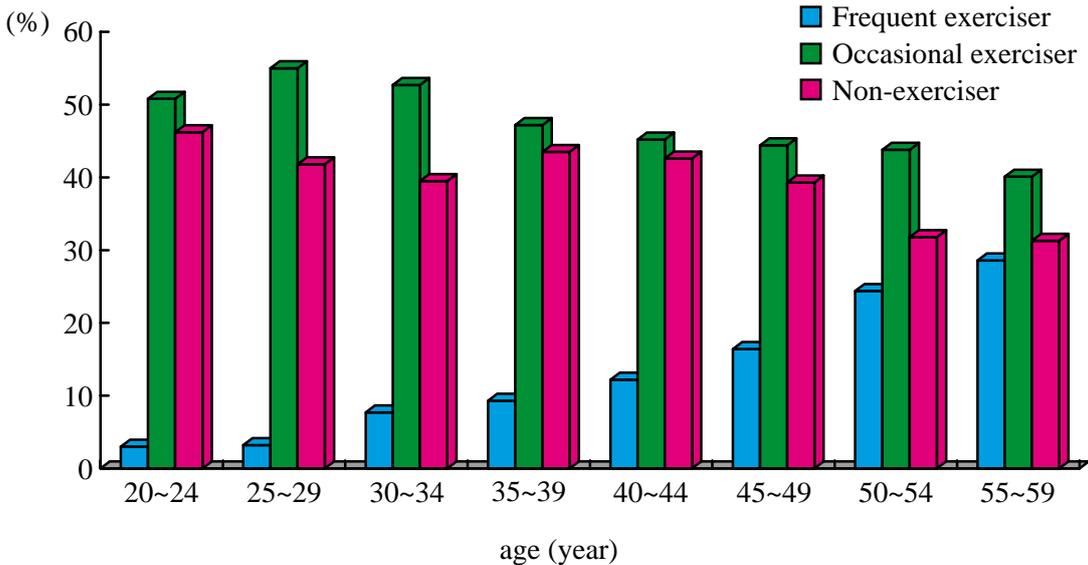


Figure 3-3-4 Frequent, occasional and non-exercisers among adult females

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The primary reasons for males to participate in physical exercise was to improve physical ability (61.9%), cure and prevent diseases (58.6%), relieve pressure and regulate mood (54.1%). The reasons of frequent and occasional exercisers were generally the same. The major reasons of physical exercising for females were to prevent and cure diseases (65.7%) and to relieve pressure (49.8%). Frequent exerciser focused more on improving physical ability and occasional exercisers focused more on losing weight and keeping fit. The reasons for exercising varied with age groups. The major purposes of exercising before age 45 were to improve physical ability, to relieve pressure, to regulate mood, to lose weight and keep fit. For age 45~59, the major purpose was to prevent and cure diseases (table 4-3-1-3-23).

The major locations where adults exercised were park (51.9%), open ground, road or street (40.2%), stadium or gym (32.6%), office or residential area (16.7%), and recreation club (10.6%). Exercising locations chosen were generally the same between males and females. No significant difference was seen in the choices of locations between frequent and occasional exercisers. It was worth to note that, fewer people went to gyms or stadiums and more people went to parks as age increased (table 4-3-1-3-24).

As for the types of sports that the 2,295 exercisers adults participated in, 27.9% participated in 1 type, 33.7% in 2 types, and 38.4% in 3 types of sports. The top 5 sports with high participation were walking (51.3%), jogging (41.3%), ball games (28.0%), swimming (25.4%), and aerobics and yangko (12.5%). There was gender difference in sports choices. Males usually participated in sports such as jogging, walking, ball games, swimming, work out and strength training while females usually chose walking, jogging, swimming, aerobics and yangko, and balls games, etc. Frequent and occasional exercisers generally chose the same types of sports. An association between sports choices and age was seen. As age increased, the proportion of subjects who ran and played ball games reduced while more subjects participated in walking, aerobics and yangko, and martial arts and qigong (table 4-3-1-3-25).

A further examination on the choices of ball games by Macao adults showed that a large percentage of young male participants played football and basketball. Senior male participants played table tennis and badminton more. As for females, the primary choice in each age group was badminton, followed by ping pong (table 4-3-1-3-26).

The study also investigated on 12 obstacles that hindered adults to participate in physical exercise. The major obstacles were lack of time (54.0%), laziness (44.7%) and lack of location and facilities (13.7%). The obstacles for exercising weighed differently among frequent exercisers, occasional exercisers and non-exercisers. Frequent exerciser was unable to exercise due to lack of time while the major obstacle for occasional exercisers was lack of time and laziness. Besides lack of time and laziness, another crucial reason for non-exercisers was a lack of interest. No significant difference in obstacles was seen between males and females (table 4-3-1-3-27).

In addition, the mostly watched sports by Macao male adults were football (56.6%) and basketball (30.3%) while the rest of the 15 items did not exceed 20%. But as age increased, the proportion for those watching football and basketball tended to decrease while the proportion of those watching “other sports”, which was not in the 17 items listed tended to increase. Females

mainly watched swimming (30.8%), volleyball (29.8%) and gymnastics (25.7%) before age 39. After age 40, above 40% females watched “other sports” (table 4-3-1-3-28).

**3.3.2.3 Occurrence of diseases**

Our result showed that 31.8% of the 3,608 subjects (age 20~59) had been diagnosed with diseases by the hospital in the past 5 years. The occurrence of diseases with rather high percentages was diseases of the digestive system (27.5%), hypertension (23.9%) and respiratory diseases (17.7%). A significant difference was seen between genders where 29.3% males and 33.8% females had diseases ( $P < 0.05$ ). The top three diseases diagnosed most for both males and females were diseases of the digestive system, hypertension and respiratory disease, and the fourth was accidental injury. The proportion of subjects diagnosed with disease increased with age (figure 3-3-5), and the types of diseases diagnosed varied with age groups. A comparatively high proportion of subjects at age 20~30 had diseases of the digestive system, respiratory diseases and accidental injury while the proportion with hypertension, cardiovascular disease and cancer quickly increased after 45 years old (table 4-3-1-3-29 and table 4-3-1-3-30).

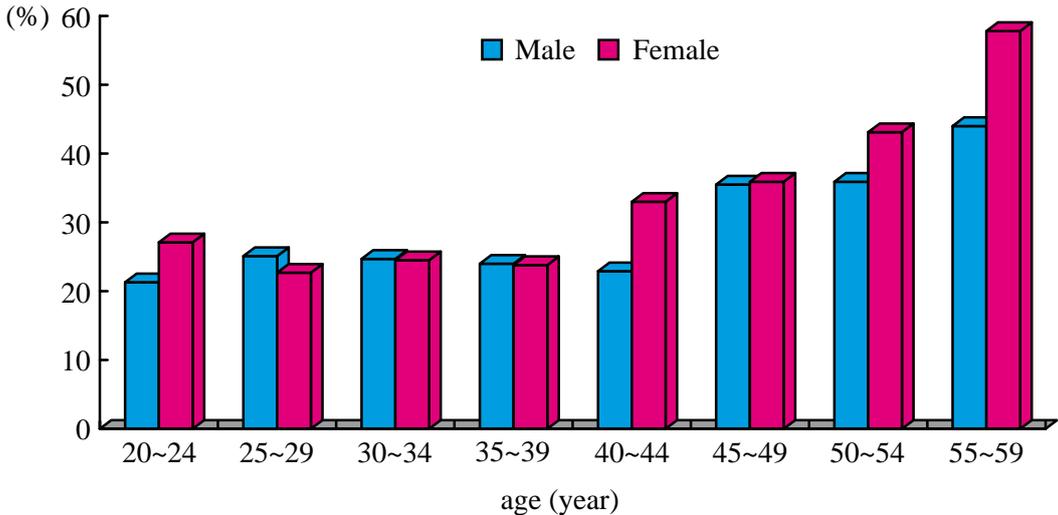


Figure 3-3-5 Adults with disease in the past five years

**3.3.2.4 Understanding of the physical fitness test**

Among age 20~59 adults, 52.5% (50.3% males and 54.3% females) had heard about the physical fitness test. More than 50% adults in the age 20~49 group had heard of the physical fitness test. However the proportion tended to decrease after age 50 (figure 3-3-6 and table 4-3-1-3-31).

Among age 20~59 adults, only 17.2% (15.4% males and 18.6% females) had participated in the physical fitness test. For females, age groups that had higher participation were 20~24 (24.1%), 45~49 (22.6%) and 55~59 (26.6%). Participation of males was highest in the 45~49 age group (20.3%) (table 4-3-1-3-31).

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In regards to the understanding of physical fitness test, 55.4% participants chose multiple answers. 95.3% of the participants considered fitness testing as a venue “to understand their fitness status”, 49.8% considered it helpful “to recognize the importance of physical exercising”, 36.9% felt it can “improve scientific knowledge about fitness”, and 2.9% considered it as “of no significance”. The definition or meaning of the physical fitness test to the subjects was generally the same between genders and among age groups (table 4-3-1-3-32).

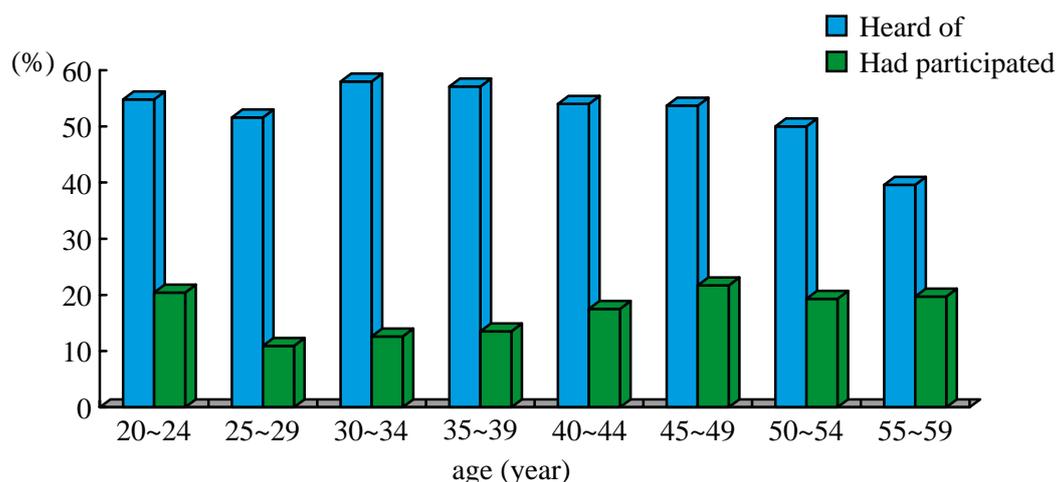


Figure 3-3-6 Adults heard of or had participated in physical fitness test

### 3.3.3 Anthropometric Measurements

#### 3.3.3.1 Length indexes

The height of adult males and females tended to decline as age increased. Not only was this a natural phenomenon, it also reflects that people nowadays with increasing living standard were taller than people of the same age before. The average height of males and females ranged from 170.7~165.8 cm and 158.6~154.4 cm, respectively (table 4-3-2-3-33 and figure 3-3-7).

The sitting height of males and females tended to decrease as age increased. The average sitting height for males and females ranged from 91.5~89.8 cm and 86.1~84.0 cm, respectively (table 4-3-2-3-34 and figure 3-3-8).

Foot length stopped increasing during adolescence, remained stable without much change during adulthood. The average foot length for males and females ranged from 24.3~24.9 cm and 22.5~22.8 cm, respectively (table 4-3-2-3-35 and figure 3-3-9).

The average height, sitting height and foot length varied similarly for males and females, with all three indexes higher in males than females ( $P < 0.01$ ). The differences between males and females are 11.2~12.1cm for height, 5.2~6.0 for sitting height and 1.7~2.2cm for foot length.

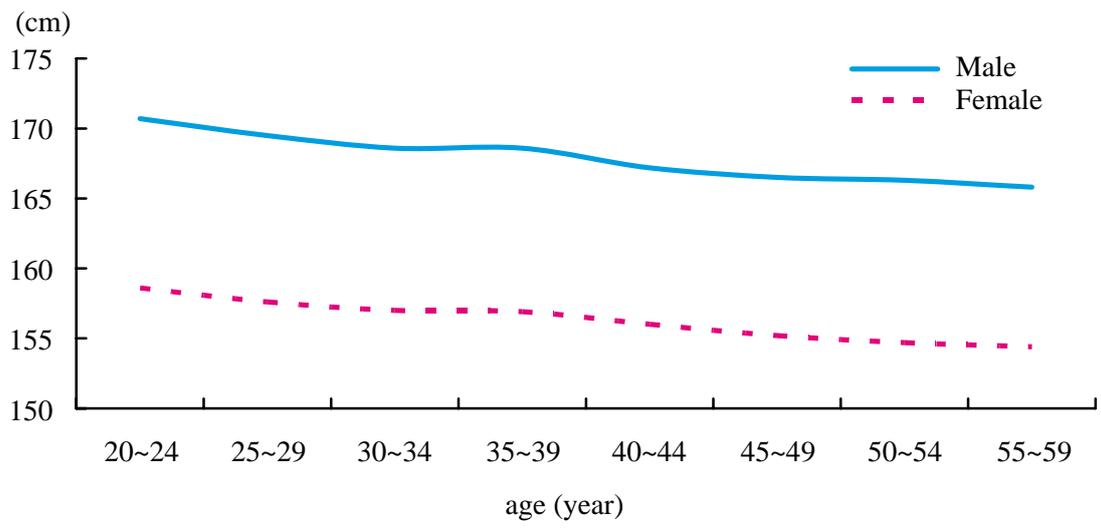


Figure 3-3-7 Height

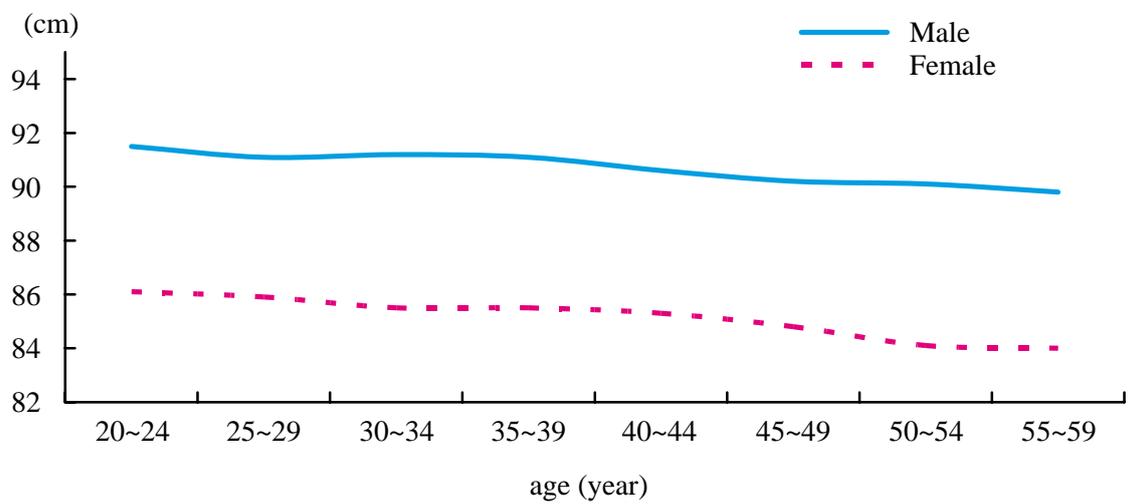


Figure 3-3-8 Sitting height

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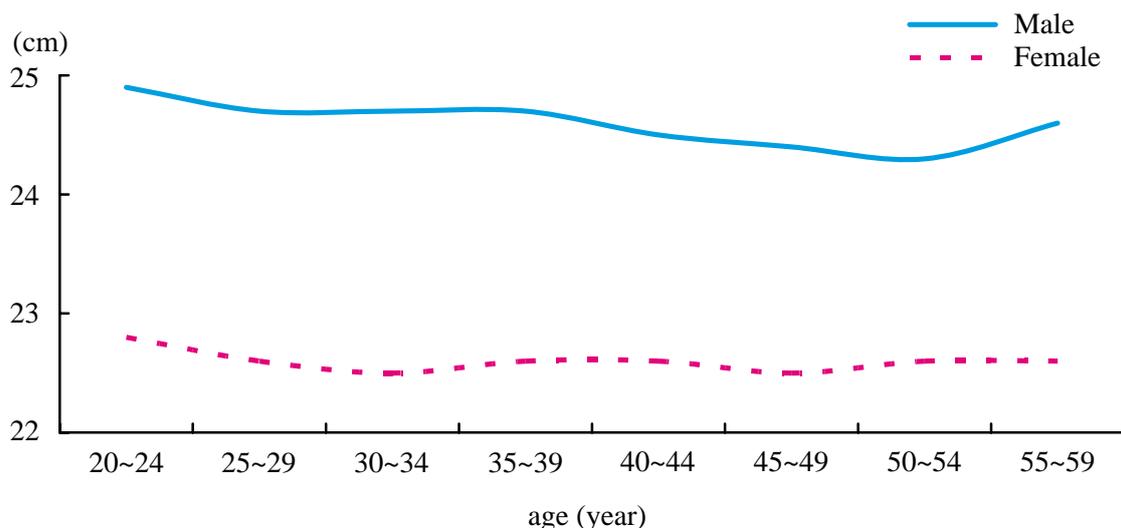


Figure 3-3-9 Foot length

### 3.3.3.2 Weight and BMI

The weight of male adults continued to increase with age before age 40 and tended to decrease gradually afterwards. For females, weight continued to increase with age. The average weight for males and females ranged from 62.8~67.2 kg and 50.3~56.8 kg, respectively (table 4-3-2-3-36). Males had a significantly higher weight than females ( $P < 0.01$ ) and the difference decreased as age increased. The average weight difference between genders ranged from 8.3~14.7 kg (figure 3-3-10).

BMI increased with age before age 35 and remained stable afterwards for males. BMI of females aged 20~59 increased with age. Average BMI for males and females ranged from 21.5~23.8 and 20.0~23.8, respectively (table 4-3-2-3-37). Before age 50, males had a significantly higher BMI than females ( $P < 0.01$ ). The difference in BMI between males and females decreased as age increased and the difference ranged from 0.8~2.4 (figure 3-3-11).

According to the recommended standard of BMI grouping by China Obesity Problem Working Team, underweight is defined as  $BMI < 18.5$ , normal weight is defined as  $18.5 \leq BMI < 24.0$ , overweight is considered as  $24.0 \leq BMI < 28.0$ , and obesity is defined as  $BMI \geq 28.0$ .

Among 20~59 age groups, 3.8%~12.4% males had a  $BMI \geq 28.0$  and the proportions at each age group were: 7.4%, 4.7%, 12.4%, 9.9%, 4.5%, 6.9%, 8.1% and 3.8%, with the lowest proportion at age 55~59 and the highest proportion at age 30~34. As for females, 2.0%~9.9% females were obese and the proportion of obese at each age group were 2.0%, 2.7%, 3.6%, 2.3%, 6.0%, 5.9%, 7.8% and 9.9%, with the lowest proportion at age 20~24 and the highest at age 55~59 (table 4-3-2-3-38 and figure 3-3-12).

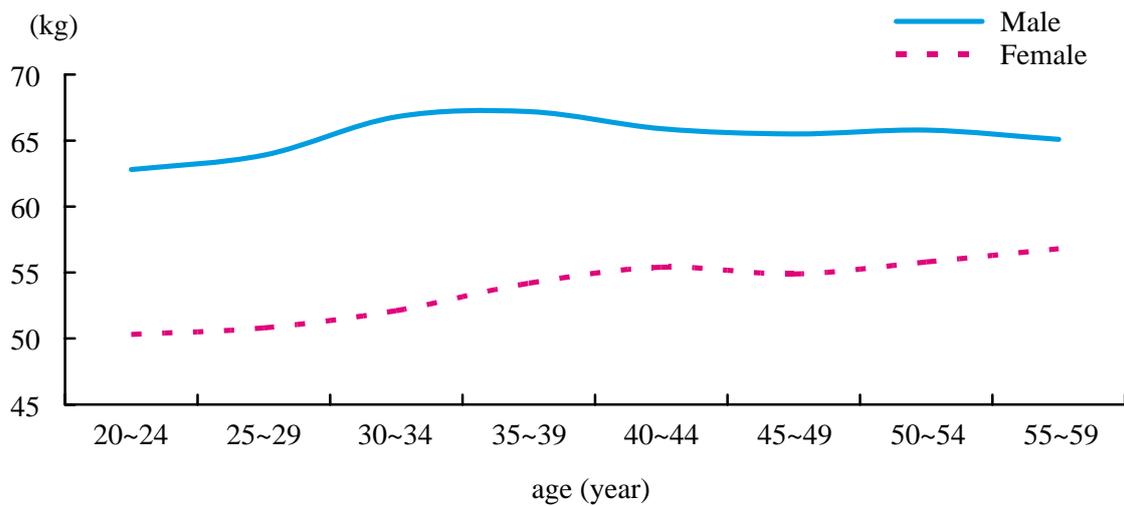


Figure 3-3-10 Weight

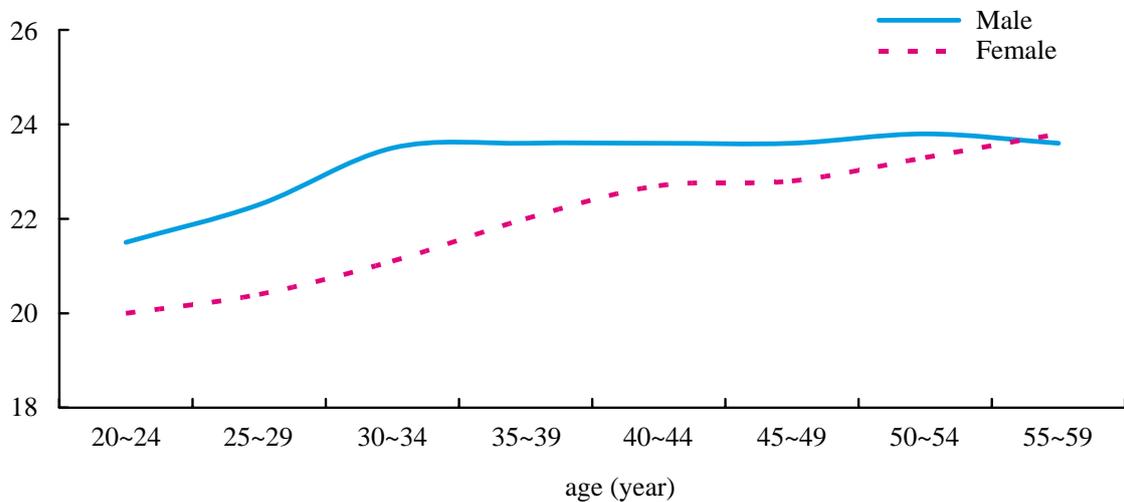


Figure 3-3-11 BMI

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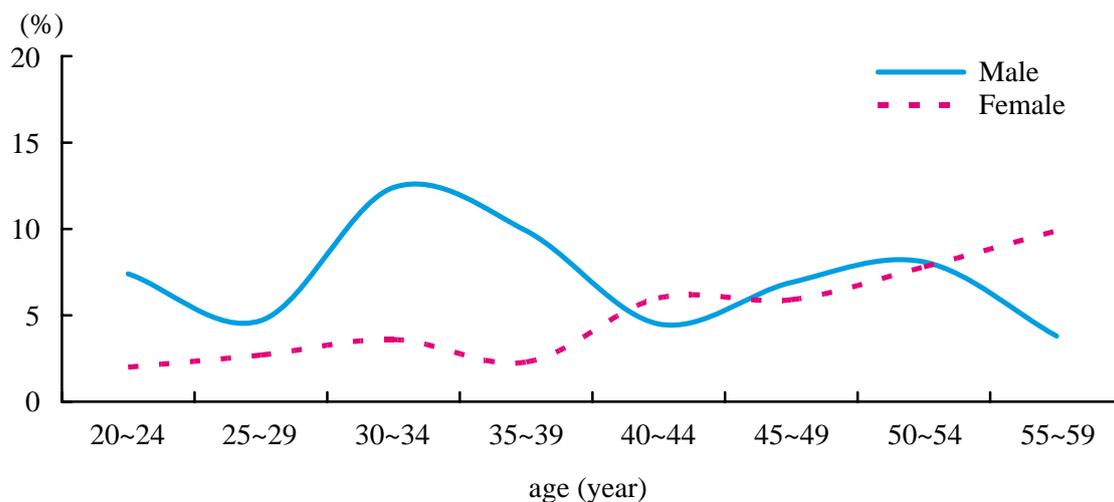


Figure 3-3-12 Percent obese at each age group

### 3.3.3.3 Circumference indexes

The chest, waist and hip circumferences for male increased with age before age 35, and remained stable thereafter. The chest, waist and hip circumferences for females increased with age between age 20~59 groups. The average chest, waist and hip circumferences ranged from 87.7~92.7 cm (males) and 81.0~89.3 cm (females), 76.9~86.6 cm (males) and 68.1~81.7 cm (females) and 90.7~92.9 cm (males) and 88.3~92.5 cm (females), respectively. The chest, waist and hip circumferences of males were significantly higher than females ( $P < 0.01$ ) (except females had a higher hip circumference than males after age 55), but the differences decreased as age increased. The differences between males and females ranged from 2.7~9.1 cm for chest circumference, 4.9~11.8 cm for waist circumference and 0.6~3.8 cm for hip circumference (table 4-3-2-3-39, table 4-3-2-3-40, table 4-3-2-3-41, figure 3-3-13, figure 3-3-14 and figure 3-3-15).

The waist-to-hip ratios (WHR) of males and females increased with age, which ranged from 0.846~0.940 (males) and 0.771~0.882 (females). The WHR of males was significantly higher than females ( $P < 0.01$ ), with a differences ranging from 0.058~0.095. This was due to the fairly small difference in hip circumferences between males and females, and a higher waist circumference of males compared to females (table 4-3-2-3-42 and figure 3-3-16).

According to the internationally recognized ACSM (American College of Sports Medicine) standard, a  $WHR \geq 0.94$  for male adults and a  $WHR \geq 0.82$  for female adults indicates too much fat accumulation around the waist, which will result in a higher risk for diseases (hypertension, type-2 diabetes and dyslipidemia, etc.).

Among the 20~59 age groups, 5.3~45.1% males had a  $WHR \geq 0.94$  and 13.8~82.3% females had a  $WHR \geq 0.82$ .

As age increased, there was a higher risk of cardiovascular disease due to an increase in WHR for both males and females. Special attention should be paid to males above age 45 and

females above age 40 as these groups had increasing proportion of people exceeding the WHR standards.

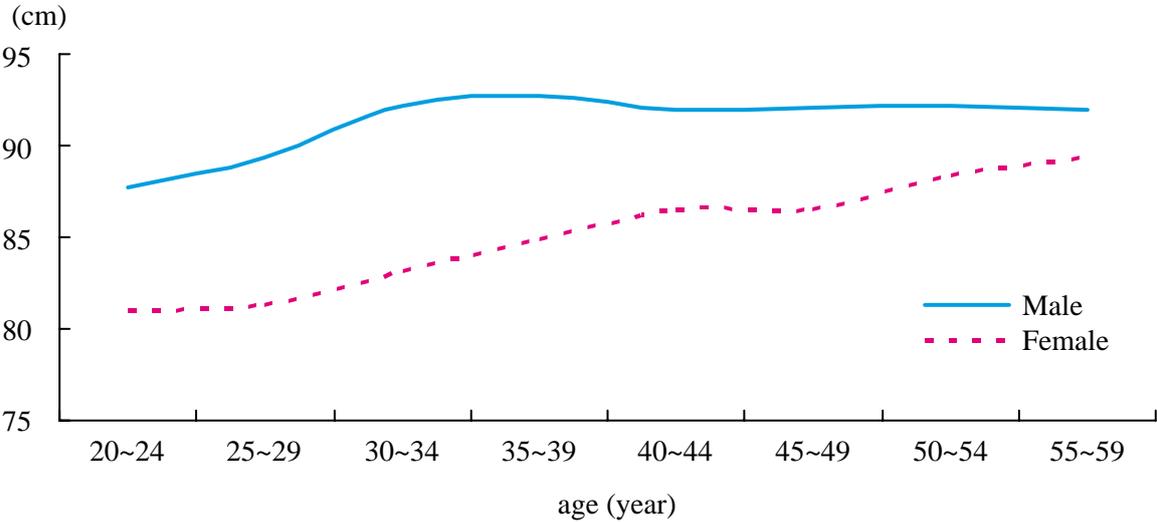


Figure 3-3-13 Chest circumference

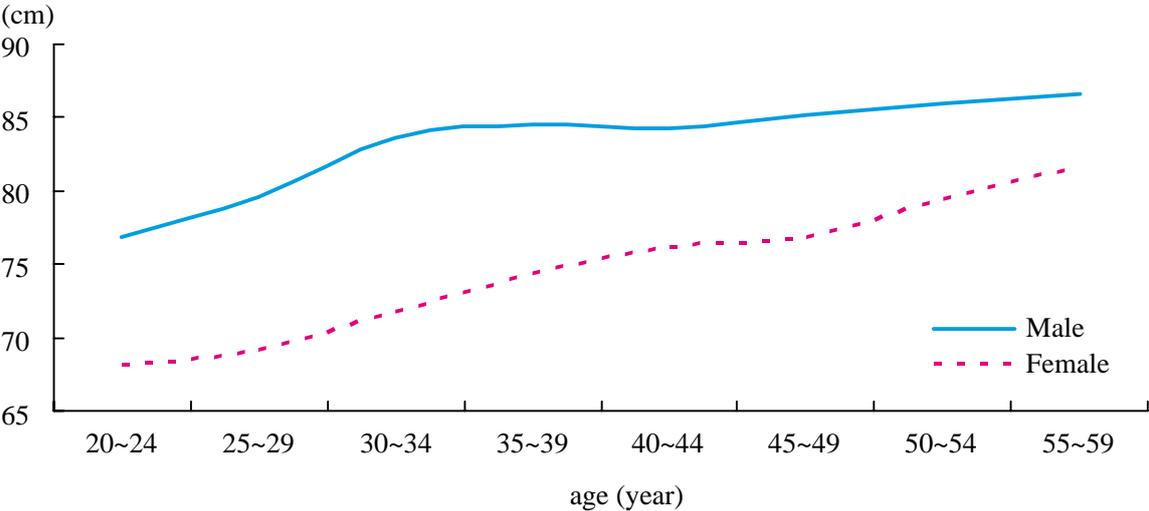


Figure 3-3-14 Waist circumference

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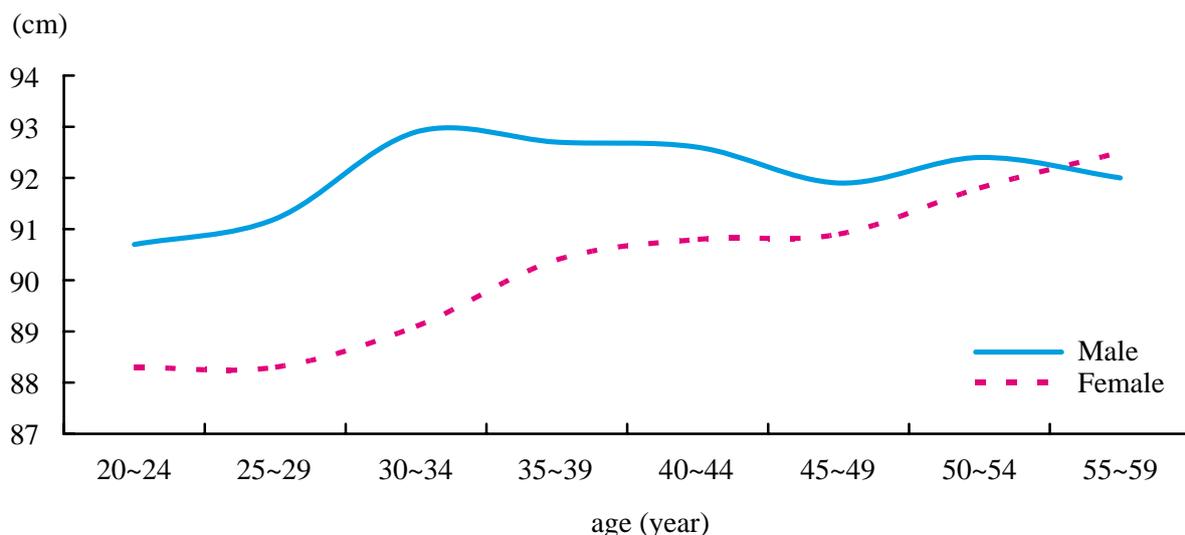


Figure 3-3-15 Hip circumference

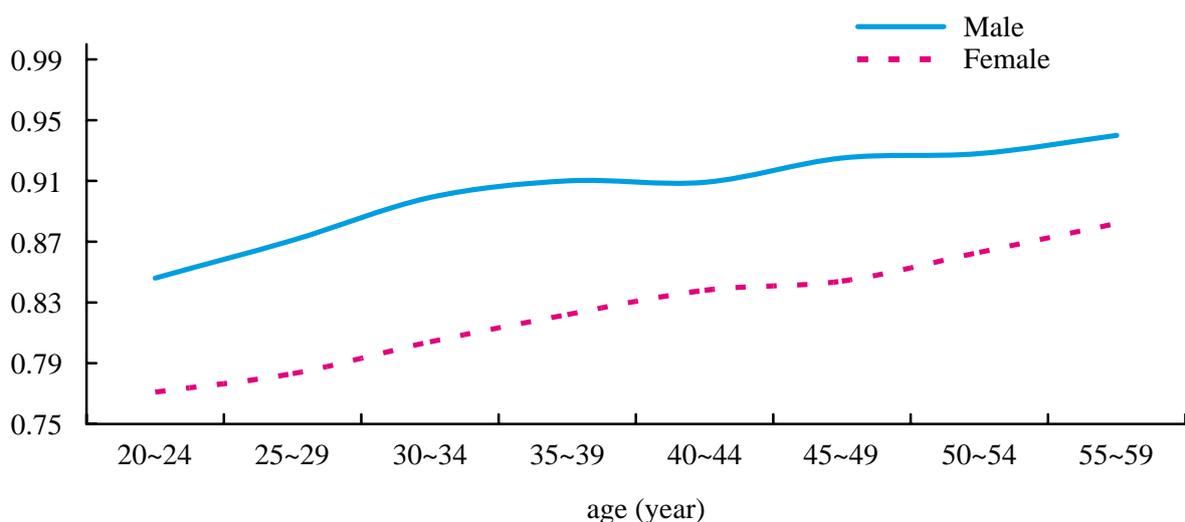


Figure 3-3-16 Waist - Hip Ratio (WHR)

### 3.3.3.4 Width indexes

Shoulder width of male and female adults declined with age. The average shoulder width for males and females ranged from 39.1~37.8 cm and 34.9~34.2 cm, respectively. The average shoulder width of males was 3.6~4.4 cm wider than females, with a significant gender difference ( $P<0.01$ ) (table 4-3-2-3-43 and figure 3-3-17).

Pelvis width of male and female adults increased with age. The average pelvis width for males and females were 27.0~28.1 cm and 26.5~28.2 cm, respectively. The average pelvis width of males was significantly larger than females in the 20~49 age groups ( $P<0.01$ ), and the

differences ranged from 0.3~0.7 cm. The differences decreased as age increased. No significant gender difference was seen after age 50 (table 4-3-2-3-44 and figure 3-3-18).

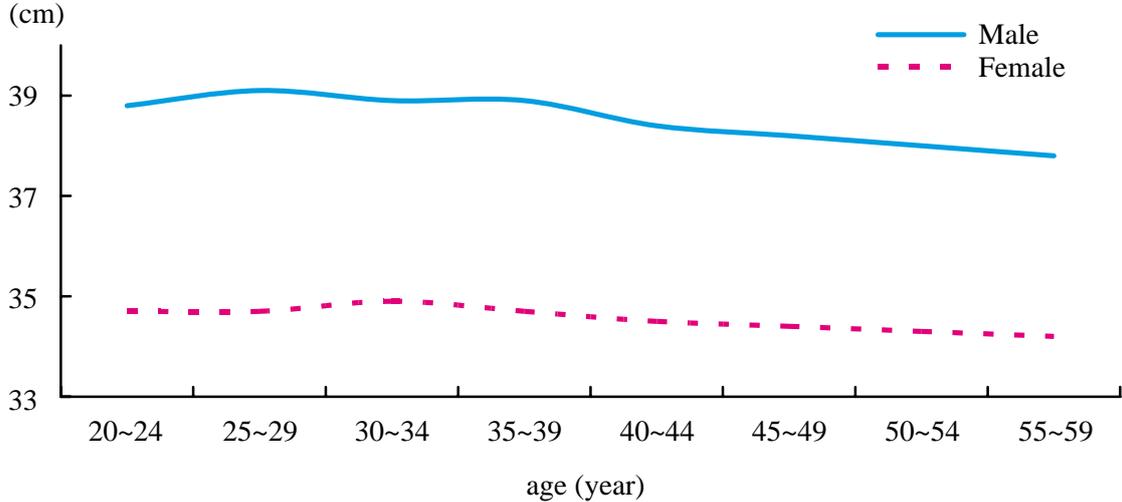


Figure 3-3-17 Shoulder width

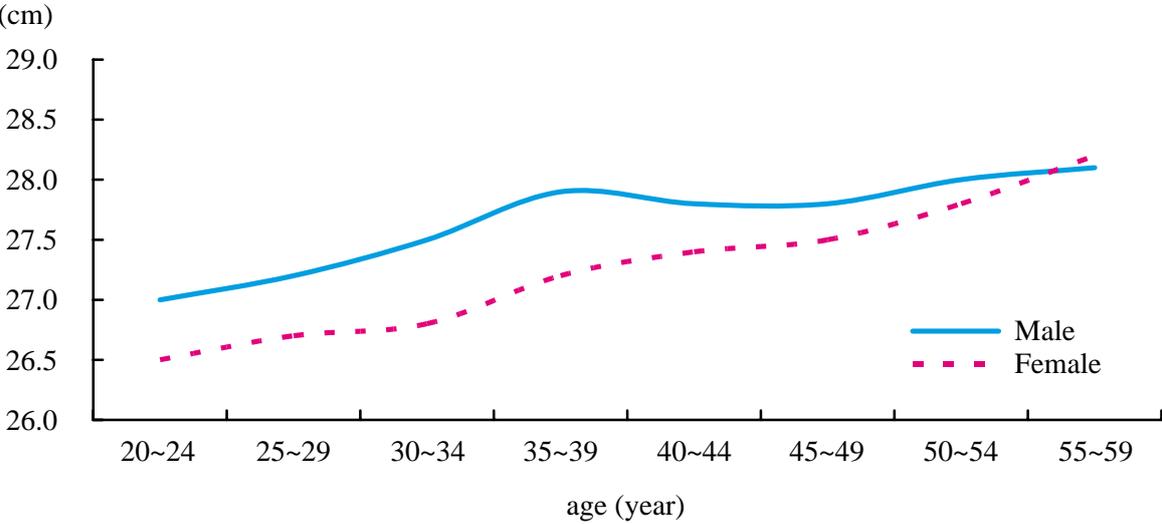


Figure 3-3-18 Pelvis width

**3.3.3.5 Body composition**

Between age 20~34, the skinfold thickness of upper arm, subscapular and abdominal increased with age in males, then decreased thereafter and remained stable after age 40. For females, the skinfold thickness of the three measuring sites increased with age. Among the three sites, abdominal skinfold was the thickest, followed by subscapular skinfold, and then

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upper arm skinfold being the thinnest in both male and female adults. The average upper arm, subscapular and abdominal skinfold ranged from 11.3~14.7 mm (males) and 18.4~23.5 mm (females), 15.6~21.3 mm (males) and 18.9~26.9 mm (females), and 17.8~25.1 mm (males) and 23.6~32.3 mm (females), respectively (table 4-3-2-3-45, table 4-3-2-3-46 and table 4-3-2-3-47).

The average female skinfold thickness of the three measuring sites were significantly higher than males ( $P<0.01$ ) (except for the abdominal skinfold thickness at age 30~34). The difference in skinfold thickness between males and females tended to increase as age increased. The differences in upper arm, subscapular and abdominal skinfold thickness between males and females ranged from 4.6~10.9 mm, 0.1~5.7 mm and 1.5~7.6 mm, respectively (figure 3-3-19, figure 3-3-20 and figure 3-3-21).

Between age 20~34, the males percent body fat increased with age and remained stable at about 20%. As for females aged 20~59, percent body fat increased with age. Percent body fat of male and female adults ranged from 17.0%~21.3% and 25.3%~32.8%, respectively (table 4-3-2-3-48).

Percent body fat was significantly higher in females than males in the 20~59 age groups, with about 5.9~12.5% difference ( $P<0.01$ ) (figure 3-3-22).

The lean body mass for male and female adults remained stable after adolescence. The average lean body mass for males and females ranged from 51.5~52.8 kg and 37.2~38.1 kg, respectively (table 4-3-2-3-49).

The lean body mass was significantly higher in males than females of the 20~59 age groups ( $P<0.01$ ), and the difference ranged from 14.0~14.8 kg (figure 3-3-23).

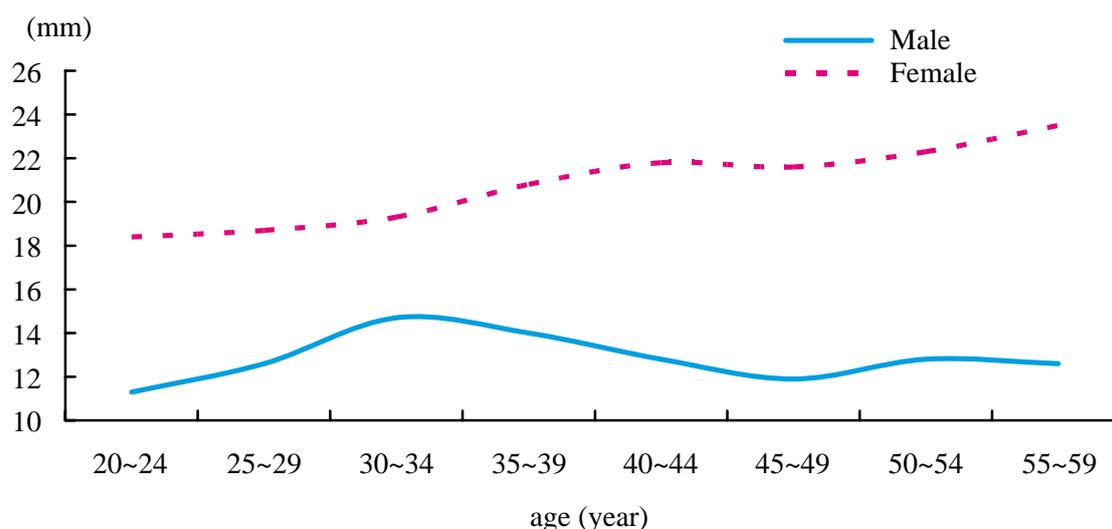


Figure 3-3-19 Upper arm skinfold thickness

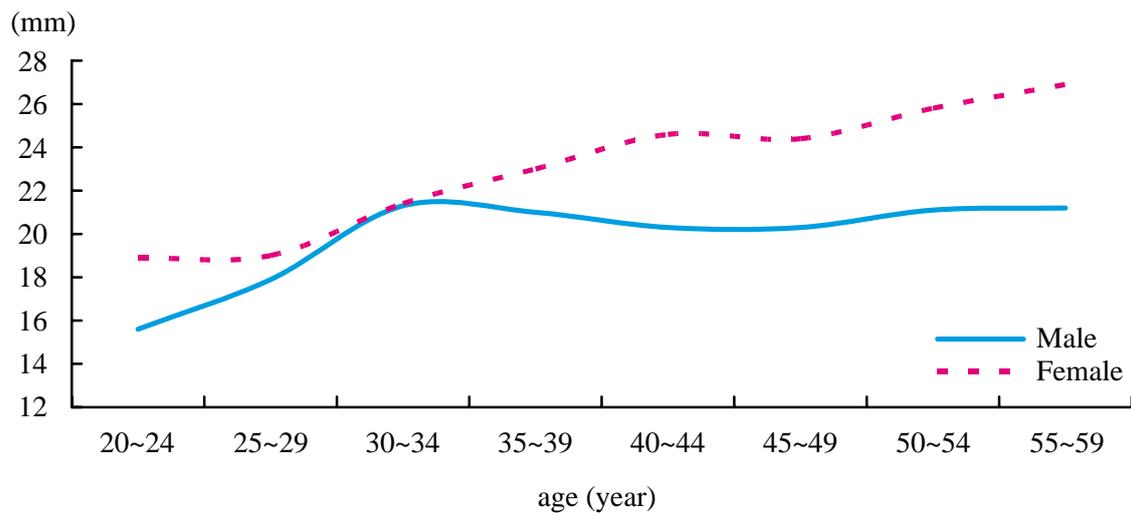


Figure 3-3-20 Subscapular skinfold thickness

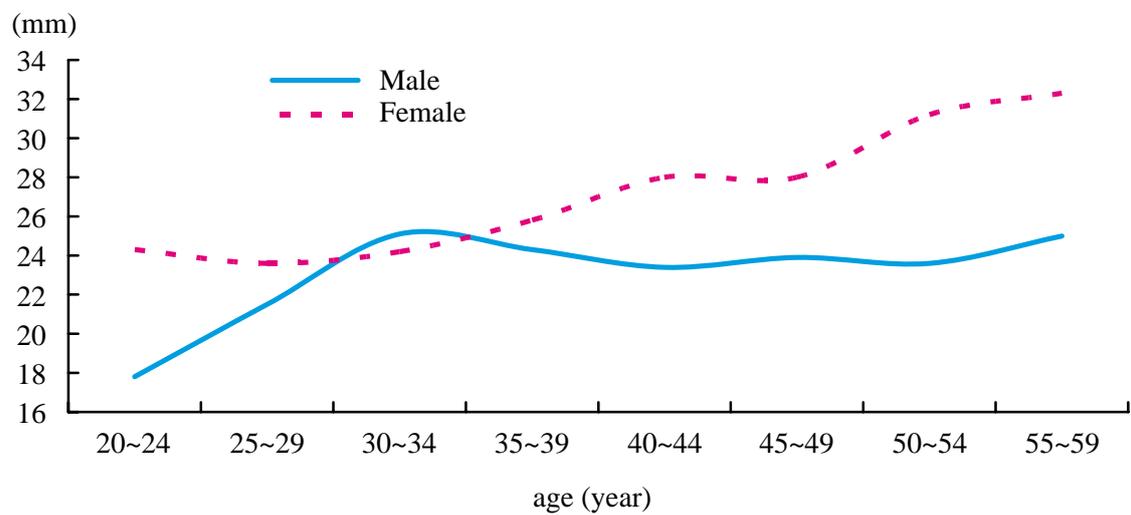


Figure 3-3-21 Abdominal skinfold thickness

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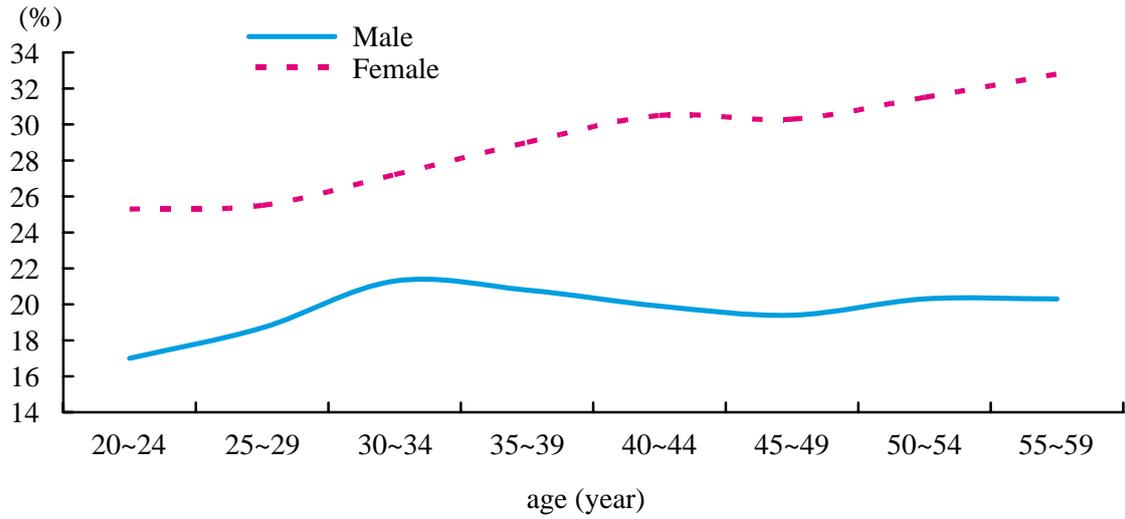


Figure 3-3-22 Percent body fat

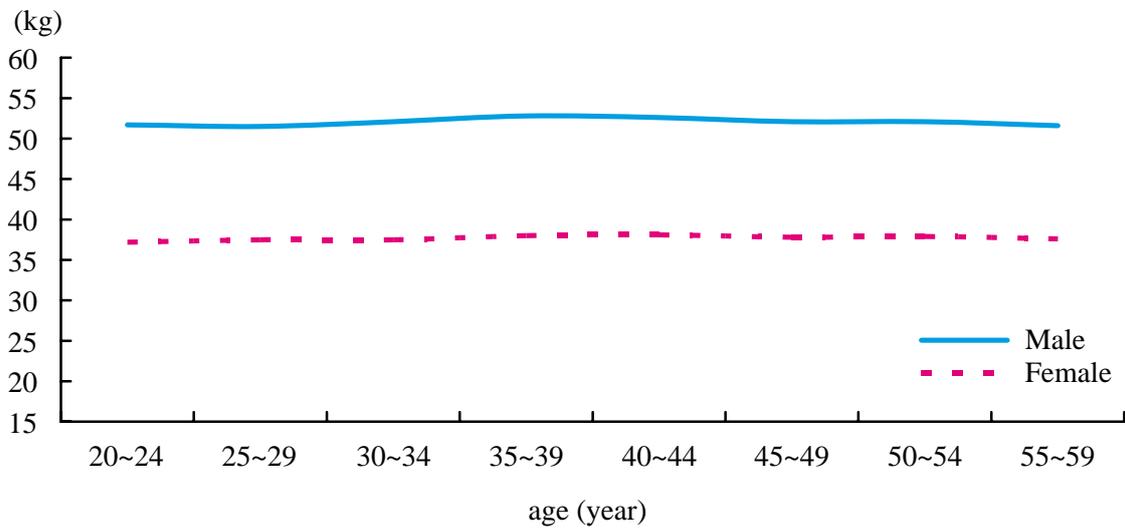


Figure 3-3-23 Lean body mass

### 3.3.4 Physiological Function

Physiological function is reflected by resting pulse, blood pressure (systolic pressure and diastolic pressure), vital capacity and step test index.

#### 3.3.4.1 Resting pulse

The average resting pulses for males and females at age 20~59 were relatively stable as age increased. Resting pulse was 74.6~77.6 times/minute for males and 74.7~79.0 times/minute for females with no gender difference (table 4-3-2-3-50 and figure 3-3-24).

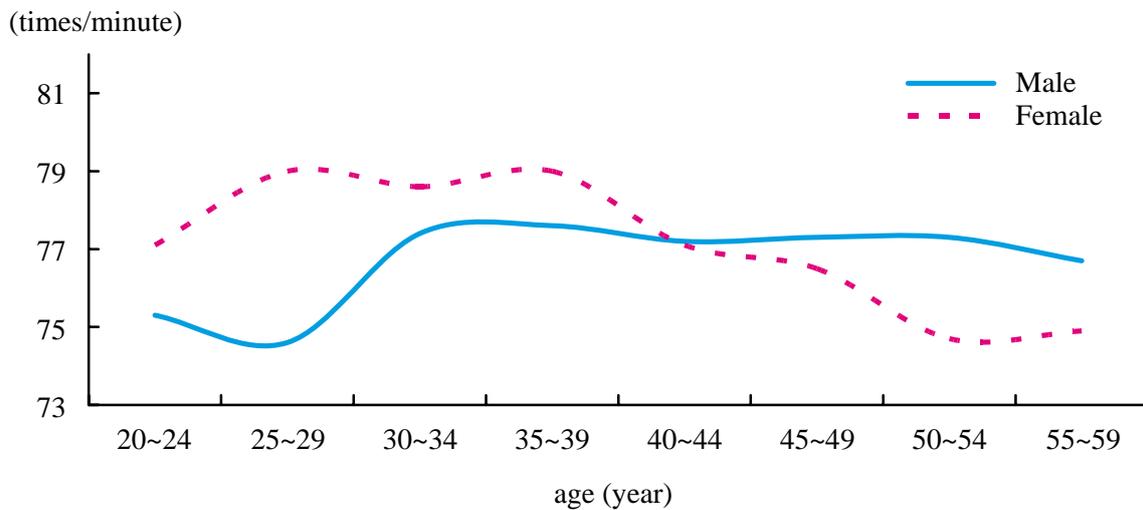


Figure 3-3-24 Resting pulse

#### 3.3.4.2 Blood pressure

In the 20~59 age groups, the average systolic pressure of both males and females tended to increase slowly as age increased. There was no difference in the rate of increase between age groups. The average systolic pressure was 116.5~131.3 mmHg for males and 104.4~127.7 mmHg for females. The average systolic pressure of males was usually higher than females, and it was significantly higher in the 20~39 age groups (with more than 10 mmHg) ( $P<0.01$ ) (table 4-3-2-3-51 and figure 3-3-25).

The average diastolic pressure of the 20~59 age groups tended to increase slowly as age increased. The rate of increase between age groups was of no significant difference. The average diastolic pressure was 75.1~83.1 mmHg for males and 67.3~79.1 mmHg for females. The average diastolic pressure of males was significantly higher than that of the females, with about 4~9.2 mmHg difference ( $P<0.01$ ) (table 4-3-2-3-52 and figure 3-3-26).

In the 20~59 age groups, the average pressure difference of males and females remained fairly stable as age increased. There was some difference between age 50~54 and 55~59, but

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no significant difference between age groups was found. The average pressure difference was 41.2~48.6 mmHg for males and 35.8~48.6 mmHg for females. The average pressure difference of males was usually higher than females, and the difference was significant at age 20~39 ( $P<0.05$ ) (table 4-3-2-3-53 and figure 3-3-27).

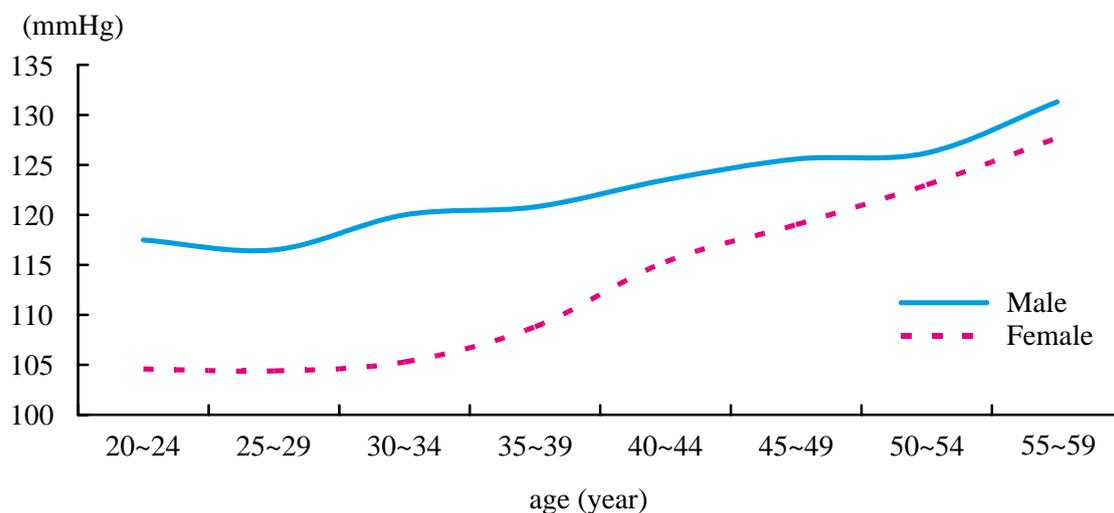


Figure 3-3-25 Systolic pressure

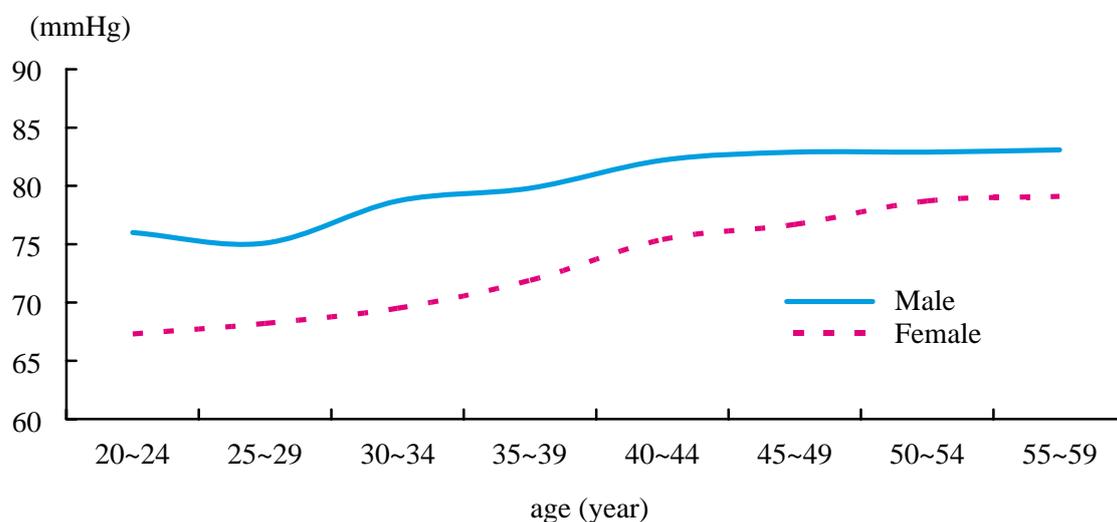


Figure 3-3-26 Diastolic pressure

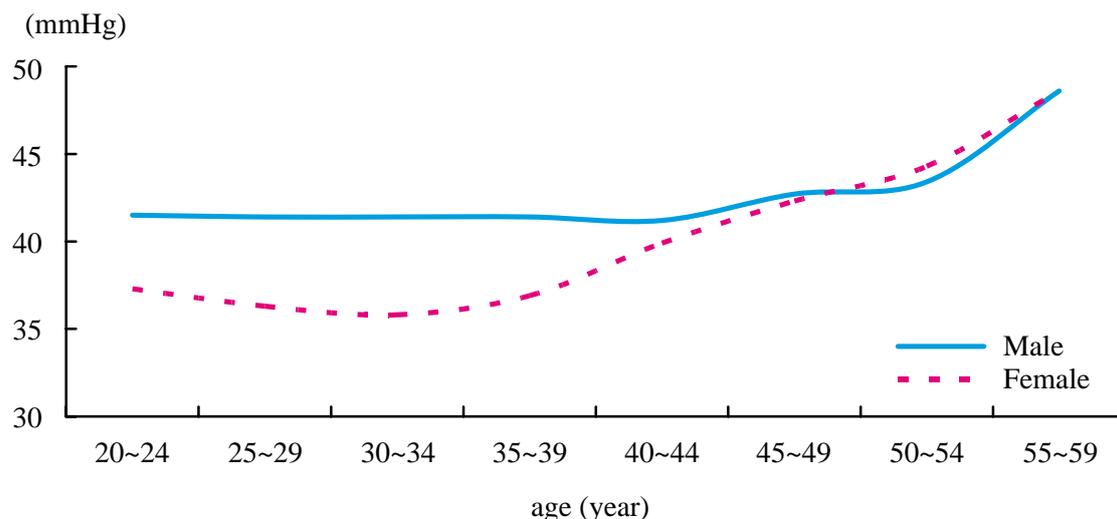


Figure 3-3-27 Pressure difference

### 3.3.4.3 Vital capacity

The average vital capacity of males and females at age 20~59 decreased apparently as age increased. The vital capacity of both males and females decreased after 30 years old. The decrease ranged from 116.3~214.7 ml for males (with the exception in the age 35~39 age groups) and 44.5~123.9 ml for females. The average vital capacity ranged from 3,167.6~3,942.7 ml for males and 2,140.8~2,801.6 ml for females. Males has a significantly higher vital capacity than females in all age groups of the adult category, and the difference was more than 1,000 ml ( $P < 0.05$ ) (table 4-3-2-3-54 and figure 3-3-28).

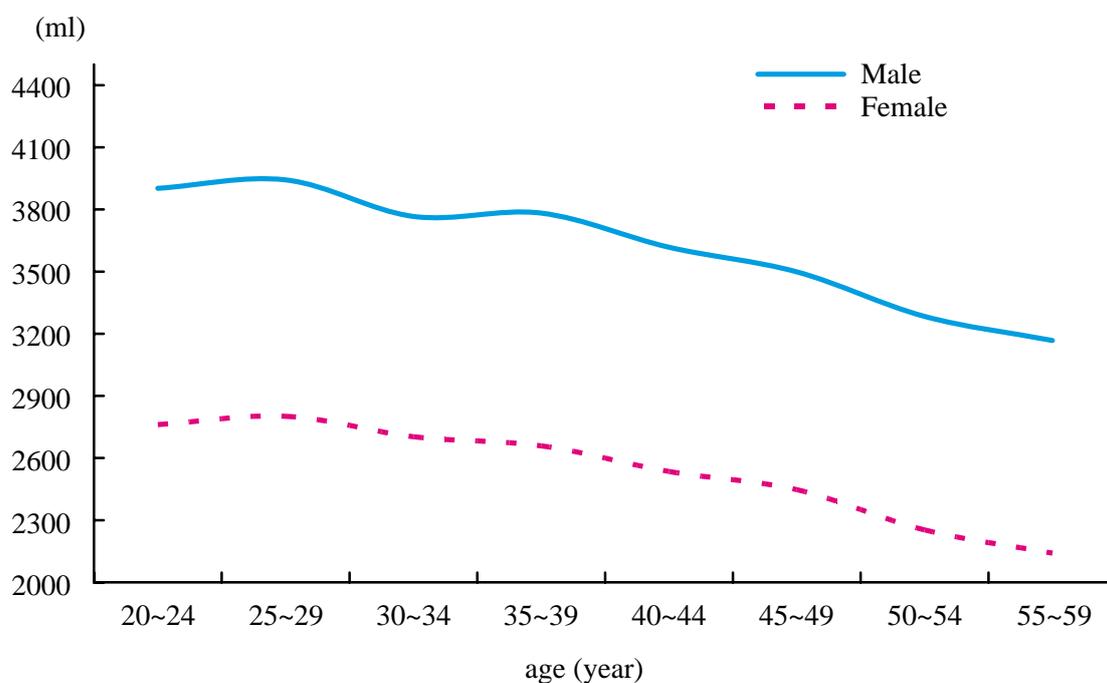


Figure 3-3-28 Vital capacity

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The average vital capacity/weight for males and females among 20~59 tended to decrease slowly as age increased. The rate of decrease was of no significant difference between age groups. The average vital capacity/weight was 49.3~63.0 ml/kg for males and 38.5~55.7 ml/kg for females. Males had higher vital capacity/weight than females, and the difference was significant after age 40 ( $P < 0.05$ ) (table 4-3-2-3-55 and figure 3-3-29).

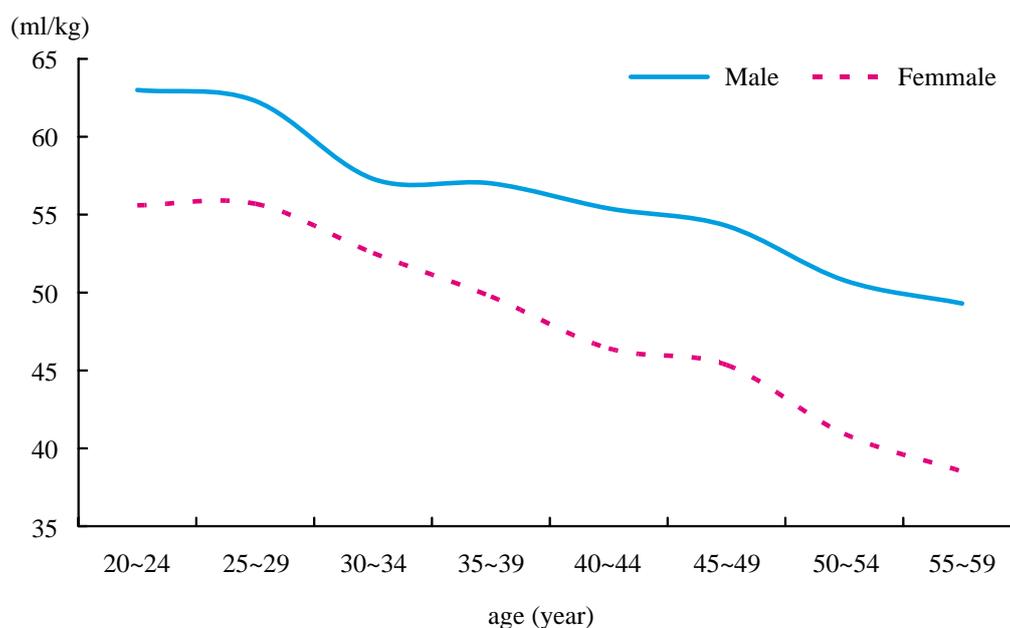


Figure 3-3-29 Vital capacity/weight

### 3.3.4.4 Step test index

Step test is a simple quantitative load experiment to evaluate the cardiovascular function. By observing the relationship of the time in doing a set of continued load exercise and the cardiovascular respond and heart rate recovery speed after the exercise (step test index), the cardiovascular function can be assessed.

The average step index of male and female adults between 20~59 increased with age, in which it remained fairly stable at age 20~29, increased slightly at age 30~49 and gradually decreased after age 50. No significant difference was seen between age groups. The average step test index ranged from 50.1~58.6 for males and 53.5~61.9 for females. The step test index was slightly higher in females than males, and reached significance in the 30~34 age groups and above 50 age group ( $P < 0.05$ ). No significant gender difference was seen in other age groups (table 4-3-2-3-56 and figure 3-3-30).

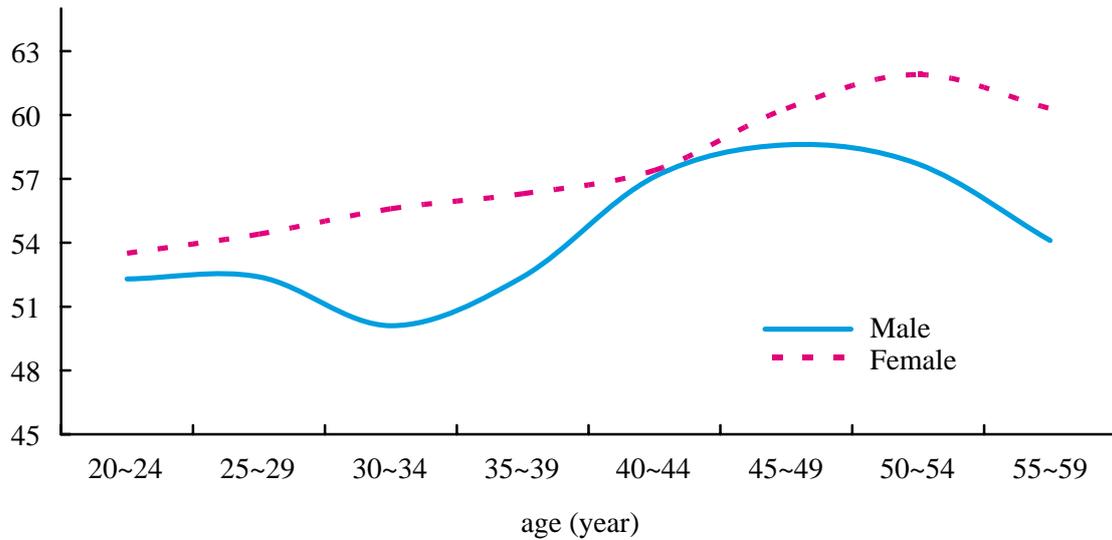


Figure 3-3-30 Step test index

### 3.3.5 Physical Fitness

#### 3.3.5.1 Strength

Strength was reflected by four different indexes - vertical jump, push-ups (male)/ one-minute sit-ups (female), grip strength and back strength for age groups under 39 years old. For 40 years old and above, grip strength was used to reflected strength.

The indexes for vertical jump, push-ups (male) and one-minute sit-ups (female) reached maximum at age 20~24, then tended to decrease with age. Grip strength and back strength for both males and females increased with age, however tended to decline as subjects aged. The indexes for grip and back strength increased first and then decreased with age. Grip strength and back strength reached maximum at age 30~39 for males and at 35~39 for females. The indexes for vertical jump, push-ups, grip and back strength in males ranged from 34.2~38.8 cm, 18.3~24.2 times, 39.7~43.7 kg and 118.7~122.5 kg, respectively. For females, the indexes for vertical jump, sit-ups, grip and back strength ranged from 22.1~24.6cm, 15.5~22.2 times/minute, 22.6~25.8 kg and 62.4~70.0 kg, respectively (table 4-3-2-3-57, table 4-3-2-3-58, table 4-3-2-3-59 and table 4-3-2-3-60).

The strength of males was significantly larger than females ( $P < 0.05$ ) where the strength of females was 60% of males. As age increased, the strength of both males and females decreased accordingly (figure 3-3-31, figure 3-3-32, figure 3-3-33 and figure 3-3-34).

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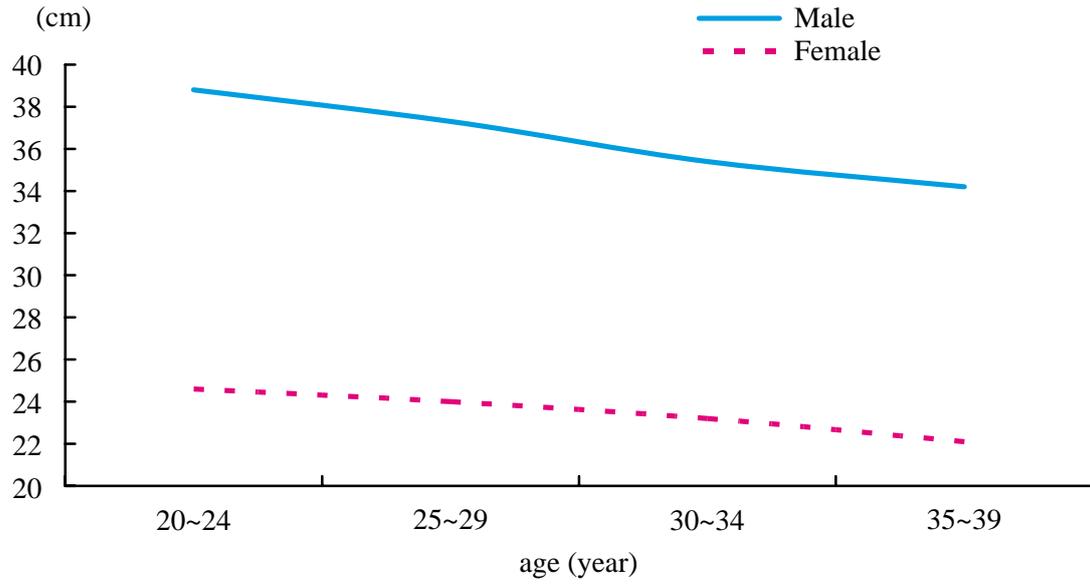


Figure 3-3-31 Vertical jump

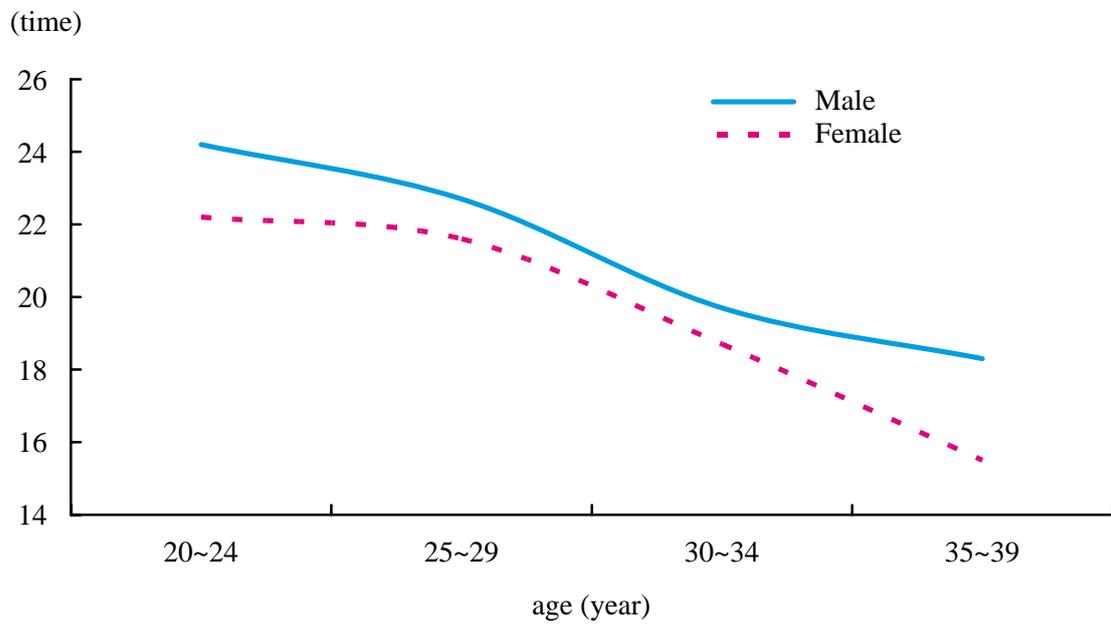


Figure 3-3-32 Push-ups (male)/ One-minute sit-ups (female)

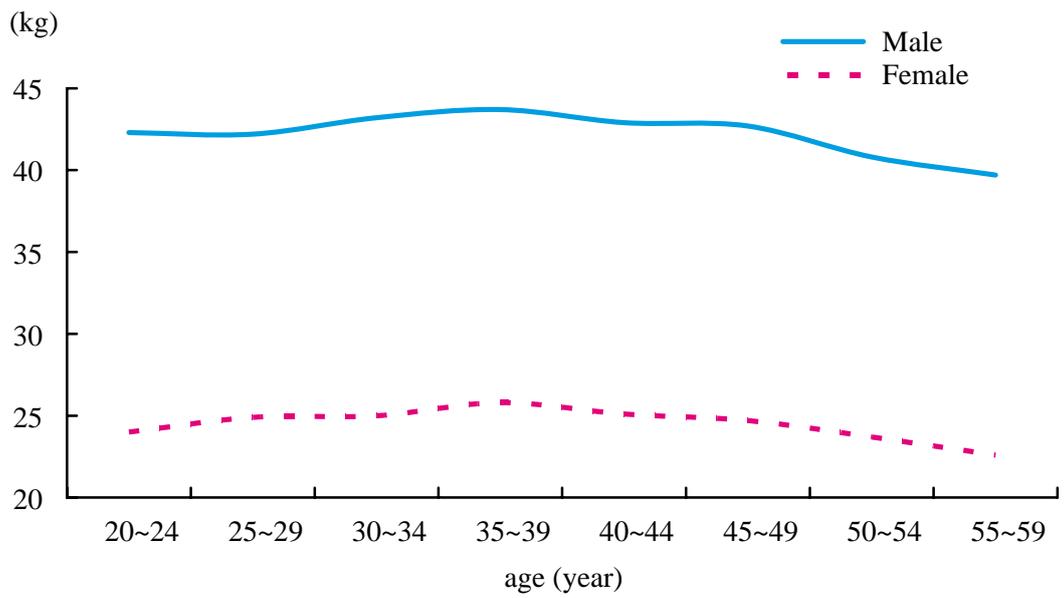


Figure 3-3-33 Grip strength

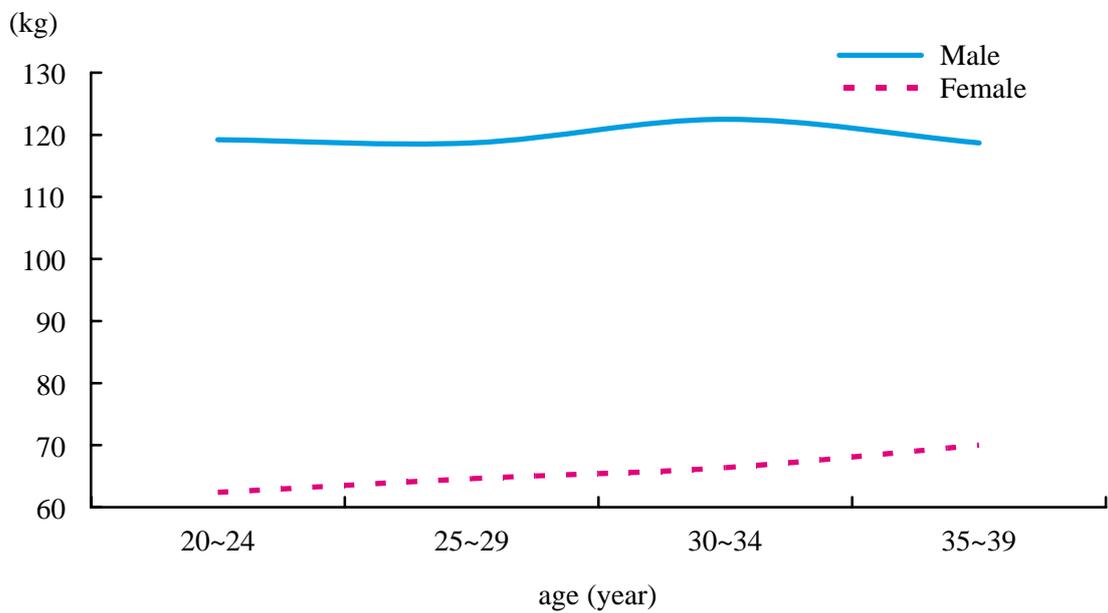


Figure 3-3-34 Back strength

### 3.3.5.2 Flexibility

Sit and reach was used to test flexibility.

Between age 20~59, the average sit and reach for males decreased 11-fold from 3.4 cm to 0.3 cm, indicating flexibility declined in male adults as age increased. The decline of flexibility mainly appeared after age 50 with a comparatively rapid decline. However, the difference seen between age 20~49 was not significantly different. As for females, flexibility index fluctuated between 5.4~6.9 cm and there was no significant different between age groups, indicating that flexibility did not vary during adulthood in females (table 4-3-2-3-61).

Flexibility is significantly higher in females than males ( $P < 0.05$ ), where the biggest difference (5.9 cm) occurred in the 55~59 age group. Flexibility of females was obviously better than males (figure 3-3-35).

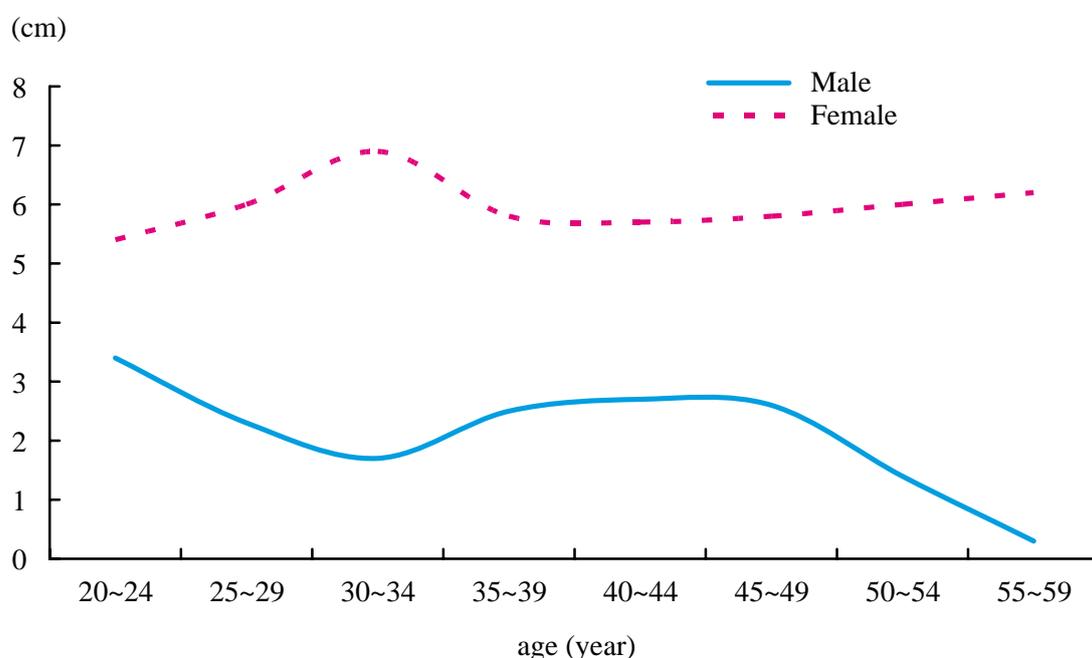


Figure 3-3-35 Sit and reach

### 3.3.5.3 Respond

Selective respond time was used to reflect respond ability.

Among the 20~59 age groups, 20~24 age group had the fastest respond time, whereas the 55~59 age group had the slowest respond time. This showed that respond ability decreased as age increased. The average respond time for males and females ranged from 0.39~0.45 seconds and 0.42~0.50 seconds, respectively (table 4-3-2-3-62). Compared with the same age group, males had a significantly shorter respond time than females, with a difference of 0.03 second ( $P < 0.05$ ). The rate of decrease in respond time with age was generally the same for both males and females (figure 3-3-36).

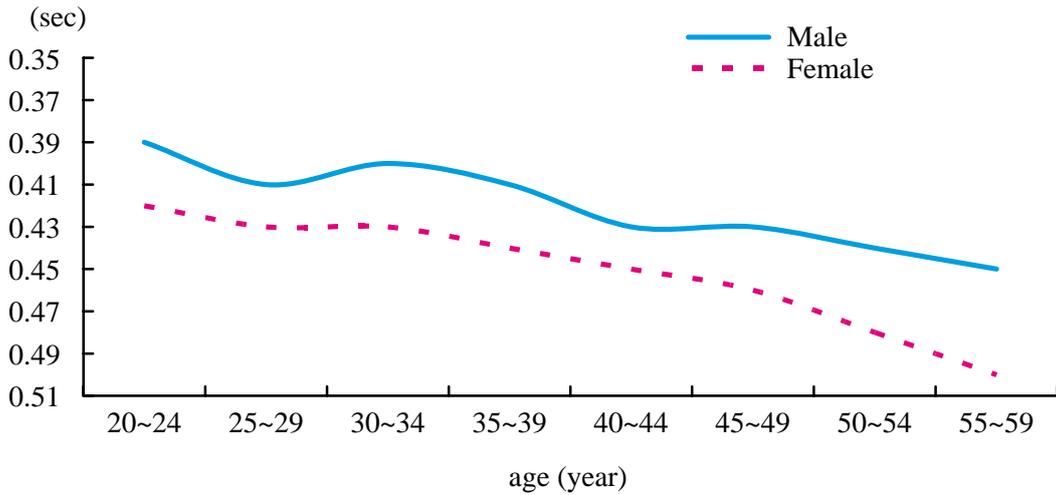


Figure 3-3-36 Respond time

### 3.3.5.4 Balance

One foot stands with eyes closed test (OFSEC) was used to test balance ability.

Among the 20~59 age groups, the 20~24 age group had the longest balance time, whereas the 55~59 age group had the shortest time, reflecting that balance ability decreased with age. The average OFSEC ranged from 17.7~48.3 seconds for males and 12.1~46.1 seconds for females (table 4-3-2-3-63). After age 50, males had better balance ability than females, but the difference was insignificant (figure 3-3-37).

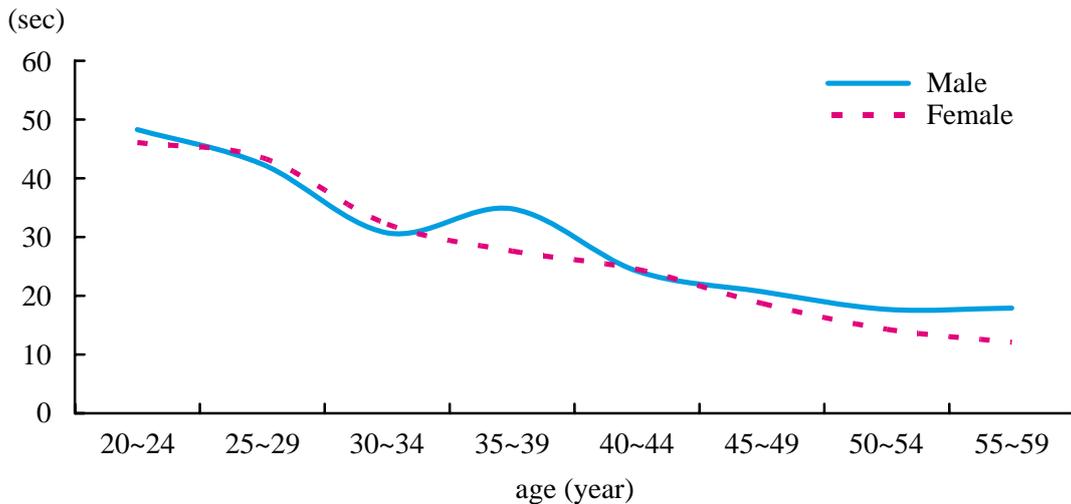


Figure 3-3-37 One foot stands with eyes closed (OFSEC)

### 3.3.6 Hearing

Among the 20~59 age groups, the occurrence of abnormal hearing for left and right ears was 0.4% and 0.2% for males, respectively, and 0.5% and 0.2% for females, respectively. Among age 20~39, abnormal hearing was only found in the 30~34 age group (0.5%) for males and 35~39 age group (0.9%) for females. At age 40~59, abnormal hearing was found almost in each age group for males and females, ranging from 0%~1.6%. The percentage of abnormal hearing tended to increase with age, which basically conformed to the normal physiology that hearing declined with age. No significant difference was seen between genders (table 4-3-2-3-64, figure 3-3-38 and figure 3-3-39).

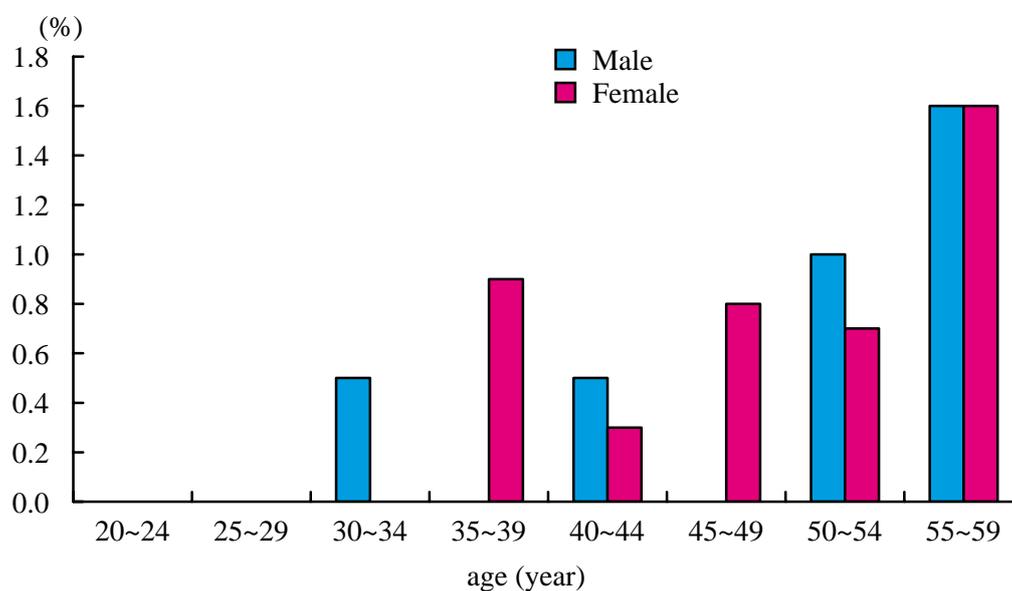


Figure 3-3-38 Left ear abnormal hearing

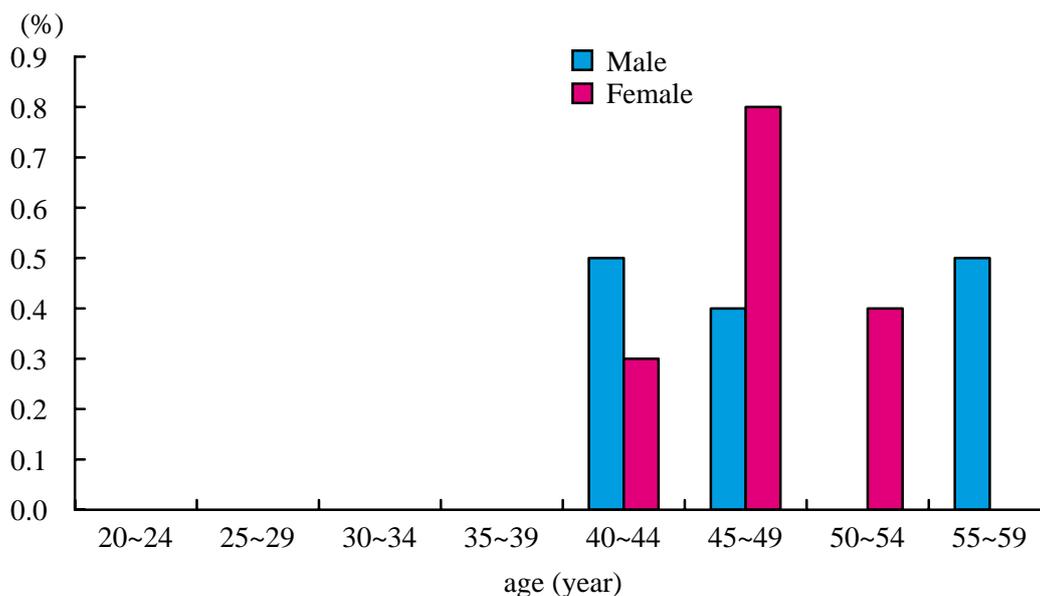


Figure 3-3-39 Right ear abnormal hearing

### 3.3.7 Summary

To conclude, anthropometric indexes including length and width indexes of both males and females were fully developed and tended to decrease as age increased between age 20~59. Weight, circumference measurements, skinfold thickness, BMI and percent body fat of males continued to increase before age 40, and then remained stable or decreased thereafter. But for females, the indexes continued to increase. Lean body mass of male and female adults remained stable, which showed that the increase in weight was mainly due to fat increase. The waist circumference increased faster than hip circumference, which resulted in an increase in WHR.

As for adults of age 20~59, their overall physiological function gradually declined with age as shown by the decrease in heart and lung function, gradual increase of blood pressure and significant decrease of vital capacity. No significant difference was seen for physiological functions between age groups (except vital capacity). Males generally had better physiological functions than females of the same age, especially with systolic pressure and vital capacity.

Physical fitness tended to decline with age. This natural phenomenon was verified again by our results, which showed decline physical fitness indexes with age for both males and females. However, the decline of physical fitness varied depending on age, gender and the indexes. Grip and back strength varied slightly with age and remained at their maximum for a fairly long period. On the other hand, explosive force, muscle strength endurance and balance declined rather quickly with age. Flexibility remained basically the same for females during adulthood, except for certain age groups. Compared between males and females, flexibility of females was better than males. For the others physical fitness indexes, males were better than females, with the exception of balance ability, where no gender difference was observed.

### 3.4 Seniors

#### 3.4.1 Basic Information of the Subjects

Subjects were divided into two groups according to gender and then further classified according to age, with a five years difference in each age group, i.e. 60~64 and 65~69, having a total of 4 groups. Table 3-4-1 showed the number of subjects in each group.

In the north area (Paróquia de Nossa Senhora de Fátima), 158 subjects (58 males and 100 females) were randomly drawn from 7 senior community centers - Centro de Convívio do Bairro do Hipódromo, Bairro da Areia Preta e Iao Hon, Centro de Convívio do C.H.T. Patane da UGAM, Centro de Dia da Ilha Verde, Asilo de Betânia and other supplementary sampling sites (including Centro de Convívio “Hong Nin Chi Ka” da Associação de Agricultores de Macao, Centro de Dia de Mong - Há, Centro de Cuidados Especiais Rejuvenescer); In the central area (Paróquia de Santo António and Paróquia de S. Lázaro), 168 subjects (72 males and 96 females) were randomly selected at 5 senior community centers - Casa para Anciãos da Paróquia de Santo António, Centro de Convívio da Associação de Mútuo Auxílio dos Moradores do Bairro de San Kio, Centro de Convívio da Associação de Mútuo Auxílio dos Moradores do Sam Pá Mun and other supplementary sampling sites (including Centro de Lazer e Recreação dos Anciãos da Associação de Beneficência e Assistência Mútua dos Moradores do Bairro “Tai O”, Centro de Convívio Casa dos “Pinheiros”); In the south area (Paróquia de São Francisco Xavier, Paróquia de Nossa Senhora do Carmo, Paróquia de S.Lourenço and (Paróquia da Sé Catedral), 160 subjects (70 males and 90 females) were randomly drawn at 11 senior community centers - Centro de Dia do Porto Interior, Centro para Idosos da Casa Ricci, Centro de Convívio “Missão Luterana de Hong Kong e Macao/Centro de Terceira Idade Yan Kei”, Centro de Cuidados Especiais Longevidade and other supplementary sampling sites (including o Centro de Lazer e Recreação das Associações dos Moradores da Zona Sul de Macao, Centro de Lazer e Recreação dos Anciãos da Associação dos Residentes do Bairro da Praia do Manduco, Associação dos Residentes da Rua. 5 de Outubro, Centro de Lazer e Recreação dos Anciãos da União Geral das Associações dos Moradores de Macao, Centro de Convívio da Associação dos Habitantes das Ilhas Kuan Iek, Centro de Simiao and Centro do Bairro de Taipa ) (table 4-4-1-4-1). Table 4-4-1-4-2 showed the distribution of the senior subjects in the seven communities.

Table 3-4-1 Number of subjects in each age group

| Age group<br>(Year) | 60~64      | 65~69      |
|---------------------|------------|------------|
| Male                | 101        | 99         |
| Female              | 154        | 132        |
| <b>Total</b>        | <b>255</b> | <b>231</b> |

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Among the 486 senior subjects, 68.5% males and 73.1% females were born in Mainland China, while only 20.0% males and 18.2% females were born in Macao. No significant gender difference was seen in the birth place of the subjects (table 4-4-1-4-3). Most of the senior subjects had elementary level education (primary school and below) (54.5% for males and 77.6% for females), followed by 45.0% males and 22.3% females having secondary education (secondary school or university degree). Education levels of males and females were significantly different between age groups ( $P<0.05$ ). For example, the education level of the 60-64 age group was generally higher than that of the 65-69 age group (table 4-4-1-4-4). Having a labor intensive occupation before retirement accounted for the highest proportion in the senior subjects, with 80.5% males and 87.3% females. The proportion of senior subjects having a non-labor intensive work before retirement was 19.5% for males and 12.7% for females. The proportion of labor intensive senior subjects tended to increase with age for both males and females (table 4-4-1-4-5). Working indoor before retirement accounted for a larger proportion (72.0% males and 85.3% females), in which the highest proportion of the senior subjects worked in “naturally ventilated” environment (47.5% males and 57.0% females). No significant difference in working environment between age groups was observed (table 4-4-1-4-6).

In addition, among the studied seniors, 67.0% males and 74.5% females did not work, which accounted for the highest proportion. Nevertheless, the proportion of males in the 60-64 age group who did not work was lower than that of females of the same age group ( $P<0.05$ ). About 10% males and 5.6% females still worked for an average of above 50 hours per week (table 4-4-1-4-7).

### **3.4.2 Lifestyle**

Habit, physical exercise, occurrence of diseases and understanding of physical fitness test were examined in the senior subjects (age 60~69).

#### **3.4.2.1 Habits**

Habits included daily sleeping hours and sleeping quality, accumulated walking and sitting hours, ways of activities during leisure time, smoking and alcohol consumption.

The result showed that 71.8% seniors slept for an average of 6~9 hours daily, 21.4% slept for less than 6 hours, and 6.8% for 9 hours or above. The amount of sleeping time differed between males and females. More female seniors slept for an average of less than 6 hours daily than males ( $P<0.01$ ). While more males slept for 6~9 hours compared to females ( $P<0.05$ ). Males who slept for 9 hours or above was 2 % higher than females. As age increased, the percentage of subjects sleeping for less than 6 hours or more than 9 hours increased (figure 3-4-1, figure 3-4-2 and table 4-4-1-4-8).

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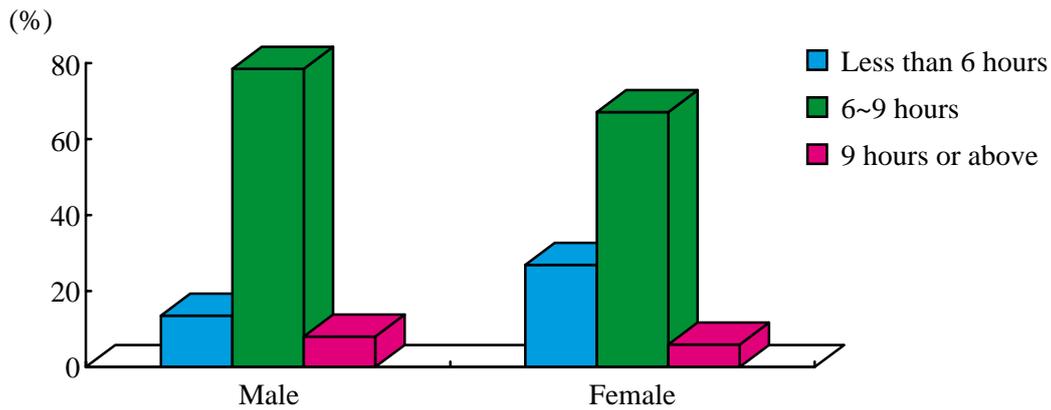


Figure 3-4-1 Sleeping hours between genders

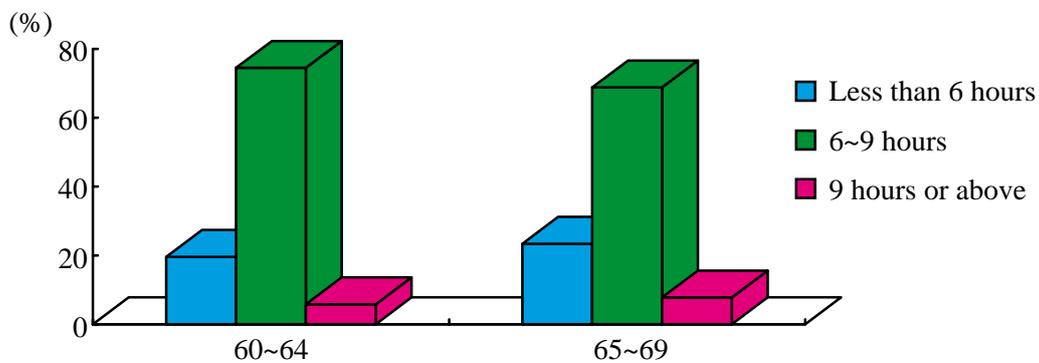


Figure 3-4-2 Sleeping hours among age groups

Good quality sleep refers to quickly falling asleep with a fair amount of deep sleeping time and no signs of insomnia. Among the senior subjects, 32.5% considered themselves slept fairly well while 49.6% considered themselves having an average sleeping quality. Males and females had a significant difference in sleeping quality ( $P < 0.05$ ). Most males (58.0%) considered themselves having an average sleeping quality while significantly more females considered themselves slept either badly or well (figure 3-4-3 and table 4-4-1-4-9).

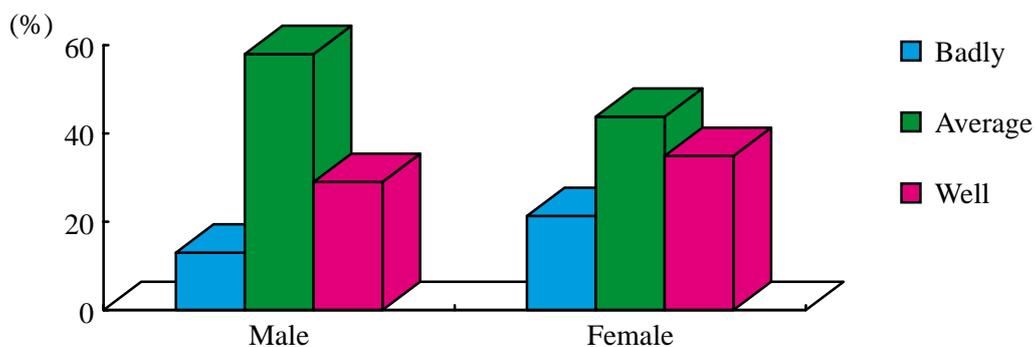


Figure 3-4-3 Sleeping quality

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The result for average daily walking hours showed that 8.2% seniors walked for less than 30 minutes, 30.7% walked for 30~60 minutes, 30.7% walked for 1~2 hours and 30.4% above 2 hours. There was no significant difference between males and females in walking hours. As age increased, less people walked long hours (above 2 hours) while the proportion of seniors walking for 1~2 hours increased (table 4-4-1-4-10).

Among the senior subjects, 30.2% sat for an average of less than 3 accumulated hours per day, 52.9% sat for 3~6 hours, 13.2% sat for 6~9 hours and 2.7% sat for 9 hours or above. Overall, there was a significant difference between males and females in sitting time ( $P < 0.05$ ). More females sat for short period of time (less than 3 hours daily) ( $P < 0.01$ ) while less females sat for more than 6 hours daily compared to males ( $P < 0.05$ ). No significant difference was seen among age groups in accumulative sitting time (table 4-4-1-4-11).

Among the 486 studied seniors, only 18.9% smoked or had smoked, and in which 30.4% smoked less than 10 cigarettes daily and 37.0% smoked 10-20 cigarettes daily. However, 4.3% had quitted smoking for less than 2 years and 24.0% had quitted for 2 years or more. Among the smokers, 89.1% had smoked for more than 15 years. A significantly higher percentage of males (41%) smoked compared to females (3.5%) ( $P < 0.01$ ). The percentage of senior smokers decreased as age increased (table 4-4-1-4-12 and table 4-4-1-4-13).

Among the subjects, 20.8% consumed alcohol, in which 45.5% drank once a month (occasionally), 28.7% drank 5~7 times a week. The above characteristics existed between genders and age groups. The types of alcohol chosen were mainly beer (34.7%), rice wine (23.8%), wine or fruit wine (20.8%) and mixed wine (11.9%). Difference in alcohol types drank existed between genders but not between age groups ( $P < 0.05$ ). The most common alcohol drank by males was beer (45.8%) and rice wine (44.8%) for females (table 4-4-1-4-14, table 4-4-1-4-15 and table 4-4-1-4-16).

Seniors spent most of their leisure time on housework (67.7%), audio-visual entertainment (52.9%), physical exercises (46.9%) and gathering (38.1%). Males and female seniors had different activity choices during their leisure time. Males had more fun activities during leisure time such as audio-visual entertainment (57.0%), physical exercises (44.0%), housework (44.0%), gathering (33.5%), chess and card playing (13.0%) while females mainly focused on housework (84.3%), audio-visual entertainment (50.0%), physical exercises (49.0%) and gathering (41.3%). Leisure activities were generally the same between different age groups (table 4-4-1-4-17).

### **3.4.2.2 Physical exercise**

Information regarding the purpose of doing physical exercise, major types of exercise, exercise frequency, exercise duration, persistence on exercising, feelings during exercise, location of exercise, major obstacles of exercising, and most often watched sport were examined in the senior subjects (table 4-4-1-4-18 to table 4-4-1-4-26).

Among the studied seniors, 79.4% participated in physical exercises, in which most did physical exercises 5 times a week or more (74.4%), each time more than 30 minutes (80.1%)

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and with a moderate level of intensity or above during exercise (60.9%). In addition, most seniors had persisted to continue exercising for 5 years or above (53.4%), followed by those who had continued exercising for 1-3 years (20.2%). The above-mentioned trend existed between male & female seniors. The proportion of seniors who exercised 5 times a week or above and who had continued exercising for 5 years or above increased with age ( $P<0.05$ ) (table 4-4-1-4-18, table 4-4-1-4-19, table 4-4-1-4-20 and table 4-4-1-4-21).

Subjects were classified into frequent, occasional and non-exercisers according to weekly exercising frequency, exercise duration and intensity (see “Part II. Children and Adolescents” for definitions). Among the 486 studied seniors, 34.6% was frequent exercisers, 20.6% was non-exercisers and 44.9% was occasional exercisers. The percentages of the three groups were of no significant difference between genders but were significantly different between age groups. The proportion of frequent and occasional exercisers were higher in the above 65 age group than the 60-64 age group ( $P<0.05$ ).

Frequent exercisers usually possessed good exercising habits and a long exercise history. 59.5% frequent exercisers and 48.6% occasional exercisers had continued exercising for 5 years or more. The time that the seniors persisted to continue exercising differed between age groups, but not differed between genders. As age increased, the percentage of seniors persisted to exercise for 5 or more years increased, and the percentage of those between 1~3 years and 3~5 years decreased.

The primary purpose for seniors to participate in physical exercise was to prevent and cure diseases (88.1%), followed by to improve exercise ability (49.0%), to relieve pressure and regulate mood (21.2%) and to socialize (16.1%). The purpose of physical exercising differed between males and females in the 60-64 age group. The purpose of exercising for most females (91.6%) was to prevent and cure diseases, which was higher than males (80.0%). As age increased, subjects who wanted to improve exercise ability as the purpose of exercising increased, accounting for 43.8% in the 60-64 age group and 54.2% in the 65-69 age group ( $P<0.05$ ) (table 4-4-1-4-22).

The major locations for seniors to exercise were park (71.5%), gym and stadium (17.4%), office or residential area (14.8%), road or street (13.7%) and open ground (13.2%) (table 4-4-1-4-23).

Frequent exercisers chose park, gym and stadium as their major exercising locations. Males and females chose different types of locations to exercise. Males usually chose park, road or street, open ground, gym and stadium. Females usually chose park, gym and stadium, office or residential area. As age increased, the percentage of seniors choosing park, office or residential area to exercise increased, whereas those choosing gym, stadium, road or street to exercise decreased.

The major types of exercise seniors participated were walking (66.3%), martial arts and qigong (25.6%) and aerobics and yangko (25.6%). Gender difference in the types of exercise participated was found. For male seniors, the types of exercises participated were walking (68.8%), martial arts and qigong (17.2%), swimming (14.0%) and jogging (12.7%). For females, exercises participated

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included walking (64.6%), aerobics and yangko (35.8%), martial arts and qigong (31.4%) and swimming (10.5%). The percentage of seniors participated in walking increased with age, 58.8% in the 60~64 age group and 74% in the 65~69 group ( $P<0.05$ ) (table 4-4-1-4-24). No difference in the type of exercise participated between frequent exercisers and occasional exercisers were seen.

Various obstacles affected seniors to exercise, among which lack of time (27.8%) and laziness (18.1%) were commonly considered to be the major ones (table 4-4-1-4-25). The obstacles that affected both gender, both age groups and frequent exercisers to exercise were stated as above. The major obstacles that hindered the non-exercisers to exercise were lack of time (50.0%), laziness (28.0%), without interest (19.0%) and no need to exercise because they considered themselves labor-intensive workers already (15.0%).

Among the 486 senior subjects, the mostly watched sports was “other sports” (55.3%), then followed by football (25.9%), basketball (16.3%) and swimming (12.6%). The same applied to seniors of both gender and both age groups. The mostly watched sport by females and seniors above age 65 was “other sports” ( $P<0.05$ ) (table 4-4-1-4-26).

### **3.4.2.3 Occurrence of diseases**

Among the subjects, 65% seniors were diagnosed with diseases. Hypertension was the most common disease (52.8%), followed by cardiovascular disease (15.2%) and diabetes (14.2%). No significant gender difference was seen in the occurrence of diseases. As age increased, the proportion of seniors diagnosed with diseases increased, in which 58.8% in the 60~64 age group and 71.9% in the 65~69 age group were diagnosed with disease. The top three diseases diagnosed in the two age groups were hypertension, cardiovascular disease and diabetes (table 4-4-1-4-27 and table 4-4-1-4-28).

### **3.4.2.4 Understanding of the physical fitness test**

Among the senior subjects, 25.7% seniors had heard about the physical fitness test. Similar percentages of male and female seniors from the two age groups had heard about the test. 21% of the seniors participated in the test before. More females (27.3%) had participated in the test than males (12.0%) ( $P<0.05$ ). 12.0% males participated in the fitness test while 27.3% females did so. As age increased, the proportion of subjects who had participated in the physical fitness test increased. As for the meaning of the test, 94.9% seniors considered it “to understand their fitness status”, 40.7% considered it “to recognize the importance of physical exercising” and 20.4% considered it “to improve scientific knowledge of fitness”. The definition or meaning of the physical fitness test was the same for both male and female seniors of the two age groups (table 4-4-1-4-29 and table 4-4-1-4-30).

## **3.4.3 Anthropometric Measurements**

### **3.4.3.1 Length indexes**

The average height, sitting height and foot length decreased slightly as age increased

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in both male and female seniors. The average height, sitting height and foot length ranged from 164.5~163.1 cm (males) and 152.7~150.7 cm (females), 88.7 cm~87.4 cm (males) and 82.7~81.3 cm (females), and 24.3~24.1 cm (males) and 22.5~22.3 cm (females), respectively (table 4-4-2-4-31, table 4-4-2-4-32 and table 4-4-2-4-33).

The average height, sitting height and foot length of males were significantly higher than those of the females ( $P<0.01$ ) (figure 3-4-4, figure 3-4-5 and figure 3-4-6).

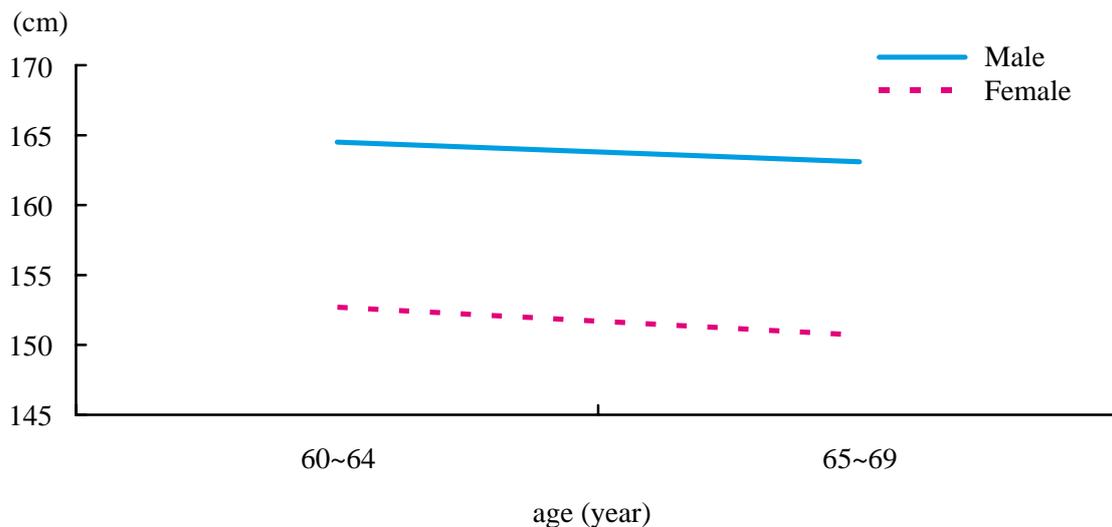


Figure 3-4-4 Height

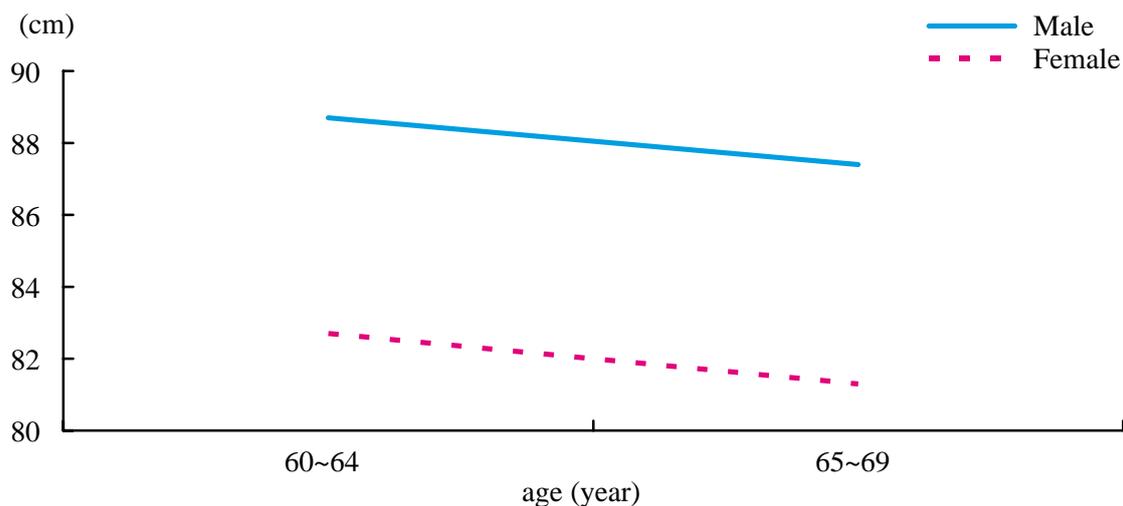


Figure 3-4-5 Sitting height

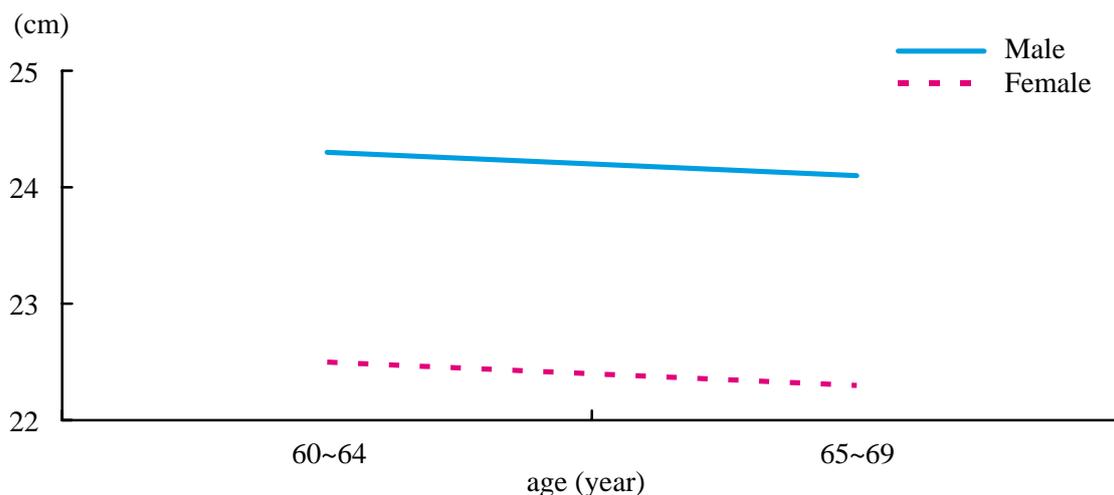


Figure 3-4-6 Foot length

### 3.4.3.2 Weight and BMI

The weight of male and female seniors decreased slightly as age increased. The average weight for males and females ranged from 63.0~62.2 kg and 56.5~55.4 kg, respectively (table 4-4-2-4-34).

BMI for male and female seniors remained fairly constant and change only slightly as age increased. The average BMI for males and females ranged from 23.3~23.4 and 24.2~24.4, respectively (table 4-4-2-4-35).

The average weight of males was higher than females but their BMI was lower than females. The weight and BMI difference between males and females ranged from 6.5~6.8 kg and 0.9~1.0, respectively and the difference was significant ( $P < 0.05$ ) (figure 3-4-7 and figure 3-4-8).

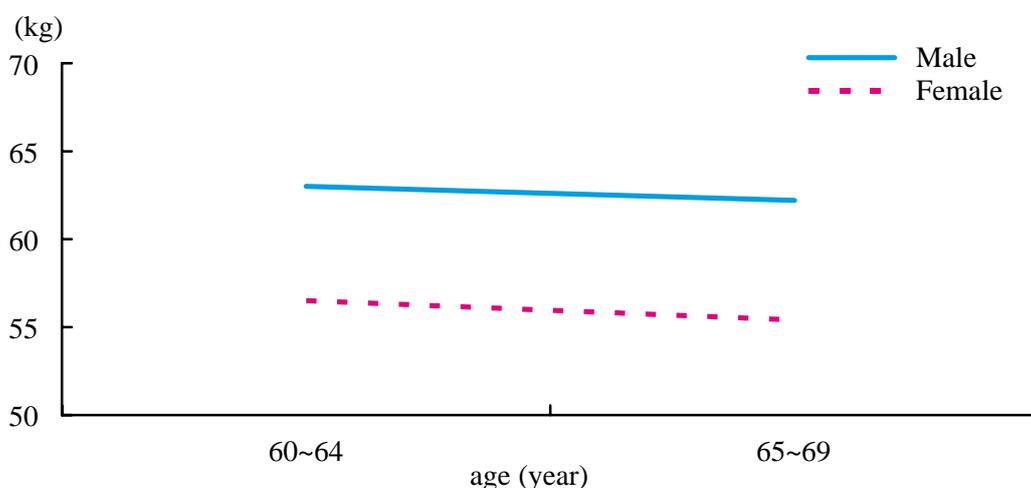


Figure 3-4-7 Weight

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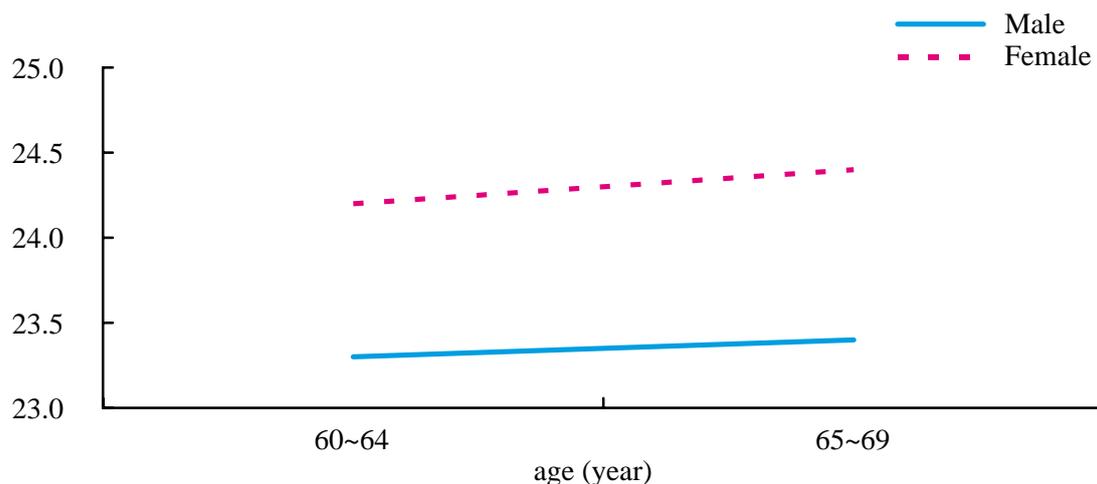


Figure 3-4-8 BMI

BMI increased with age in the 60~69 age groups. According to the recommended standard for BMI grouping by the Chinese Obesity Problem Working Team, a BMI of  $\geq 28.0$  is considered obese. The percentages of seniors with BMI  $\geq 28.0$  were 4.0% for males and 14.3% for females in the 60~64 age groups, 7.1% males and 15.2% females in the 65~69 age group. The percent obese was higher in females than males ( $P < 0.01$ ) (table 4-4-2-4-36 and figure 3-4-9).

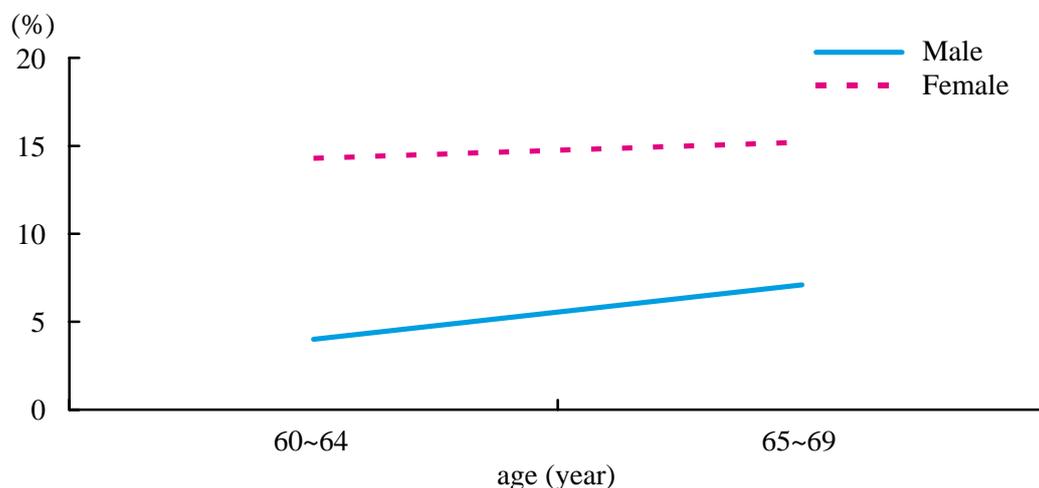


Figure 3-4-9 Obesity

### 3.4.3.3 Circumference indexes

The average chest and hip circumferences of male and female seniors decreased while waist circumference increased as age increased. The average chest, waist and hip circumferences ranged from 91.4~89.6 cm (males) and 90.6~90.4 cm (females), 85.5~86.4 cm (males) and 85.0~86.4 cm (females) and 90.6~90.2 cm (males) and 92.3~91.7 cm (females), respectively (table 4-4-2-4-37, table 4-4-2-4-38 and table 4-4-2-4-39).

WHR of males and female seniors increased with age, ranging from 0.943~0.956 and 0.920~0.942, respectively (table 4-4-2-4-40).

The chest, waist, hip circumference and WHR of males and females were similar and of no significant difference. However, significant gender difference was observed in hip circumference and WHR of the 60-64 age group ( $P < 0.05$ ) (figure 3-4-10, figure 3-4-11, figure 3-4-12 and figure 3-4-13).

According to the internationally recognized ACSM (American College of Sports Medicine) standard, when  $WHR \geq 1.03$  for male seniors and  $\geq 0.90$  for female seniors, it indicates too much fat accumulation around the waist area, which will result in a higher risk of having diseases (hypertension, type II diabetes and dyslipidemia, etc.).

In the 60~69 age group, males with a  $WHR \geq 1.03$  ranged from 5.0~10.1% and females with a  $WHR \geq 0.90$  ranged from 57.1~70.5%.

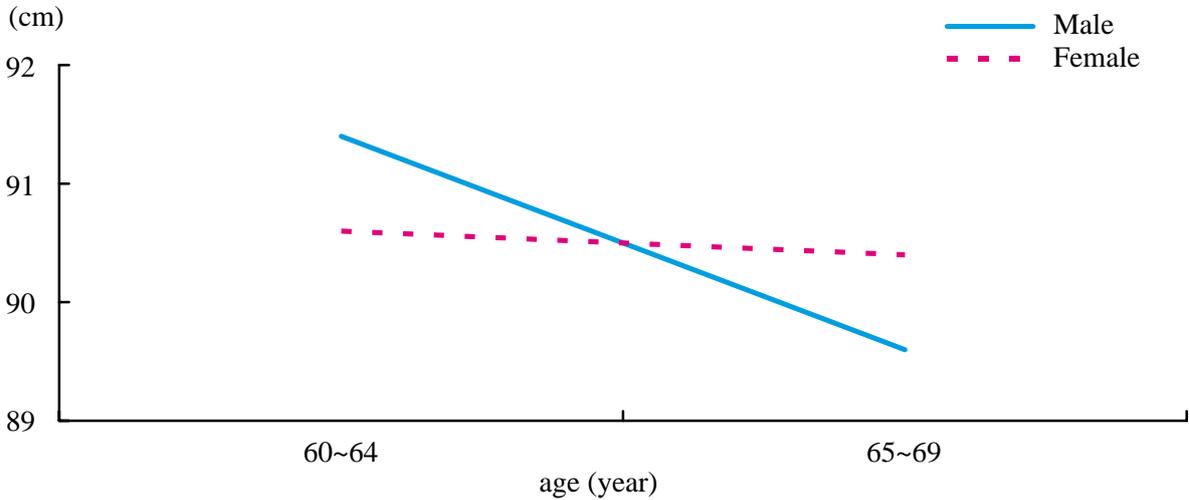


Figure 3-4-10 Chest circumference

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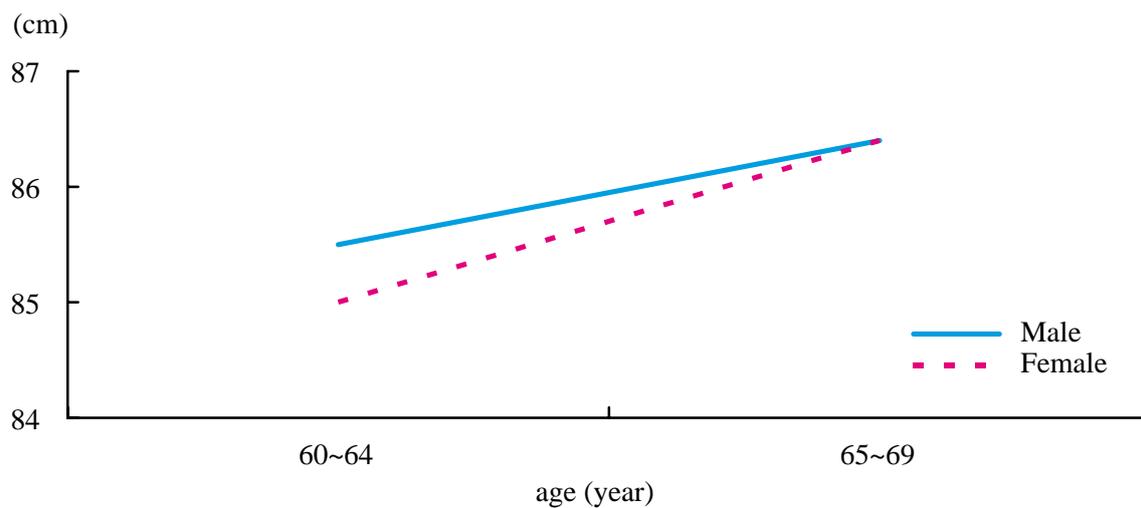


Figure 3-4-11 Waist circumference

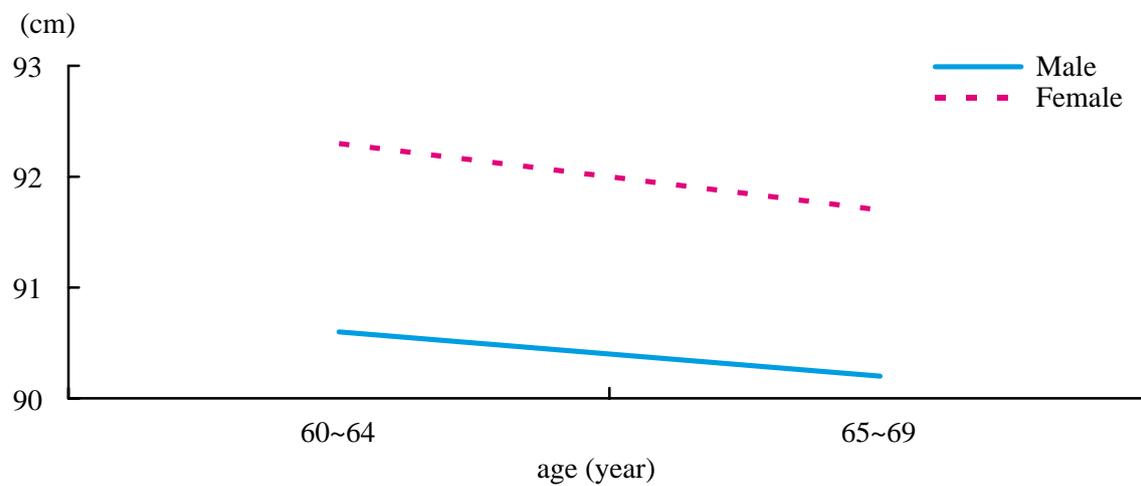


Figure 3-4-12 Hip circumference

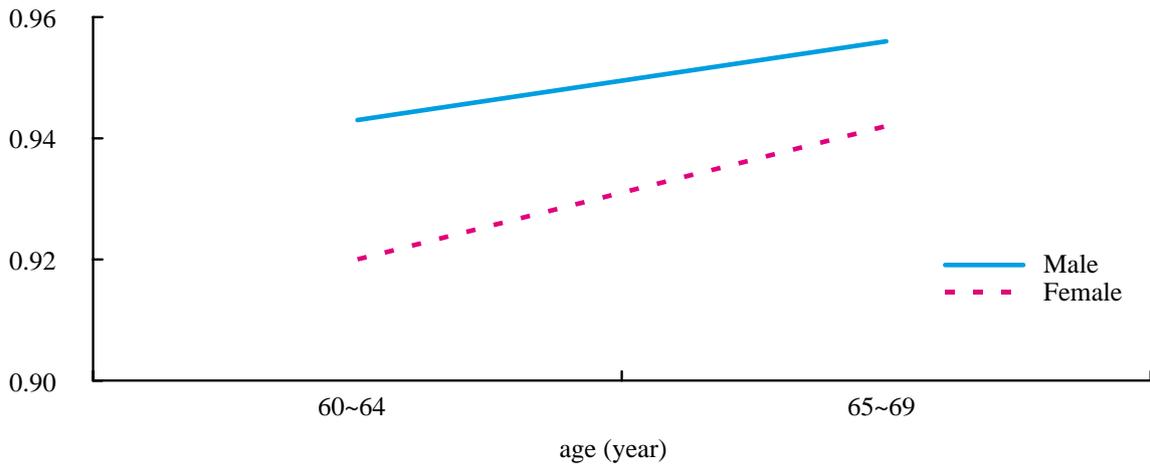


Figure 3-4-13 WHR

### 3.4.3.4 Width indexes

The average shoulder and pelvis width of male and female seniors remained constant and change only slightly with age. The average shoulder widths for males and females ranged from 37.3~37.4 cm and 33.6~34.0 cm, respectively. The average pelvis width was stable at about 28 cm (table 4-4-2-4-41 and table 4-4-2-4-42).

The average shoulder width of males was 3.4~3.7 cm higher than females ( $P < 0.01$ ) while the average pelvis width was similar between males and females with no significant difference (figure 3-4-14 and figure 3-4-15).

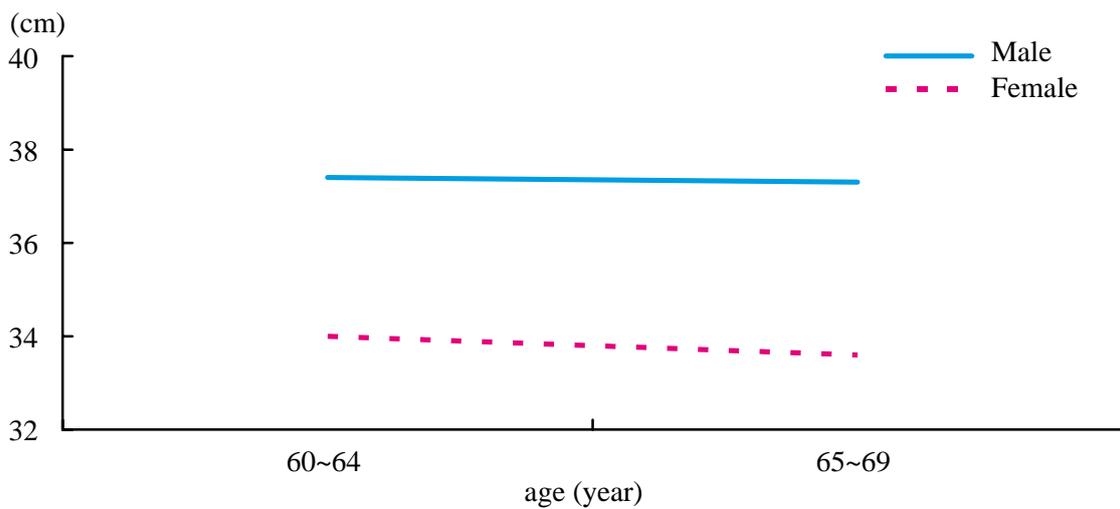


Figure 3-4-14 Shoulder width

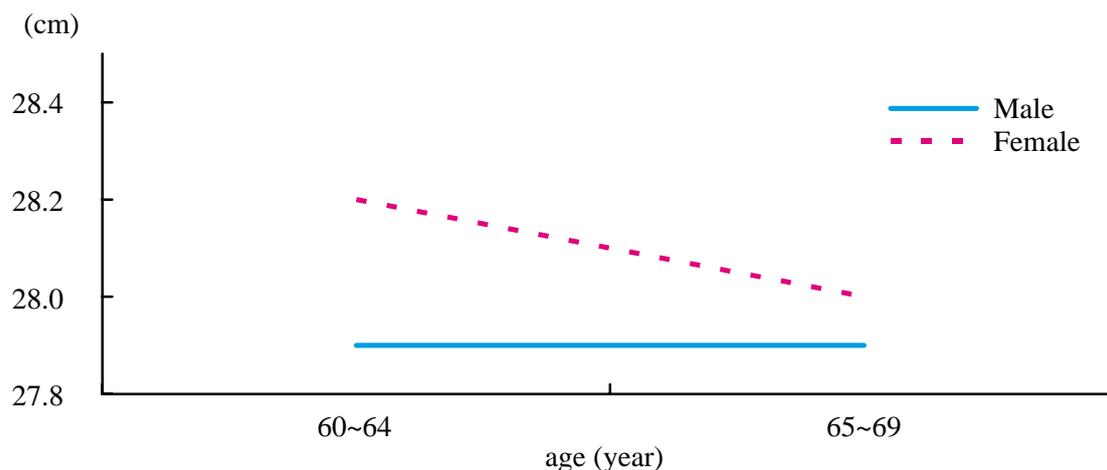


Figure 3-4-15 Pelvis width

### 3.4.3.5 Body Composition

As age increased, the average skinfold thickness of the upper arm, subscapular and abdominal did not vary much for male seniors while the three skinfold thickness decreased in females. The average skinfold thickness of the upper arm, subscapular and abdominal ranged from 12.3~12.7 mm (males) and 22.2~20.7 mm (females), 20.6~20.5 mm (males) and 23.7~22.3 mm (females) and 23.2~24.1 mm (males) and 31.5~31.1mm (females), respectively (table 4-4-2-4-43, table 4-4-2-4-44 and table 4-4-2-4-45).

The average skinfold thickness of the three measuring sites were higher in females than males, but the difference decreased as age increased. The differences in upper arm, subscapular and abdominal skinfold thickness between male and female seniors ranged from 8.0~9.9 mm, 1.8~3.1 mm and 7.0~8.3 mm, respectively ( $P < 0.01$ ) (except the subscapular skinfold in the 65~69 age group) (figure 3-4-16, figure 3-4-17 and figure 3-4-18).

As age increased, percent body fat did not vary much in males, but decreased in females. Percent body fat of males and females ranged from 19.8%~20.0% and 30.2%~28.5%, respectively (table 4-4-2-4-46). The percent body fat of females was significantly higher than males, and the difference ranged from 8.5~10.4% ( $P < 0.01$ ) (figure 3-4-19).

The lean body mass of the male and female seniors remained stable after aging. The average lean body mass for males and females ranged from 49.3~50.2 kg and 39.0~39.1 kg, respectively (Table 4-4-2-4-47). Lean body mass of males was significantly higher than females, with differences ranging from 10.2~11.2 kg ( $P < 0.01$ ) (figure 3-4-20).

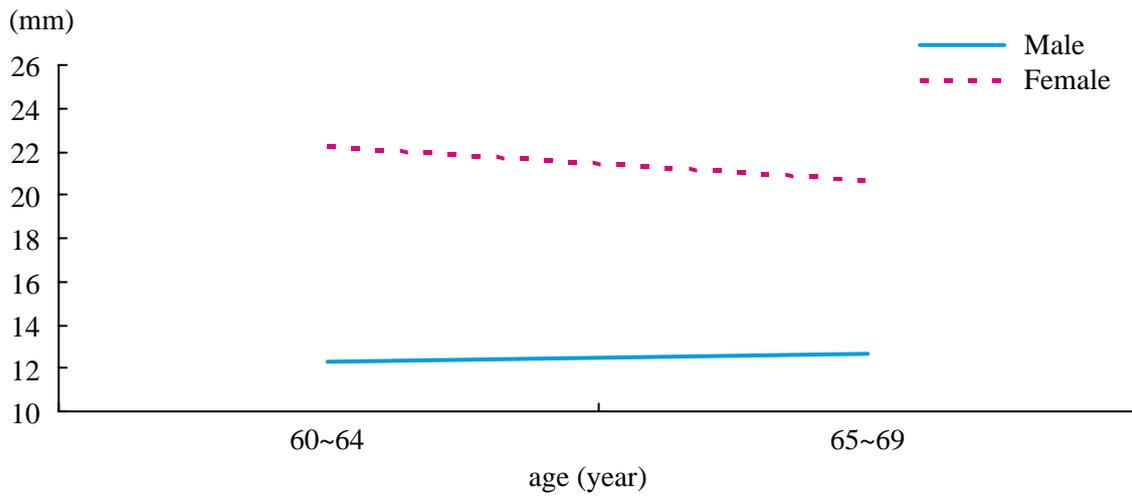


Figure 3-4-16 Upper arm skinfold thickness

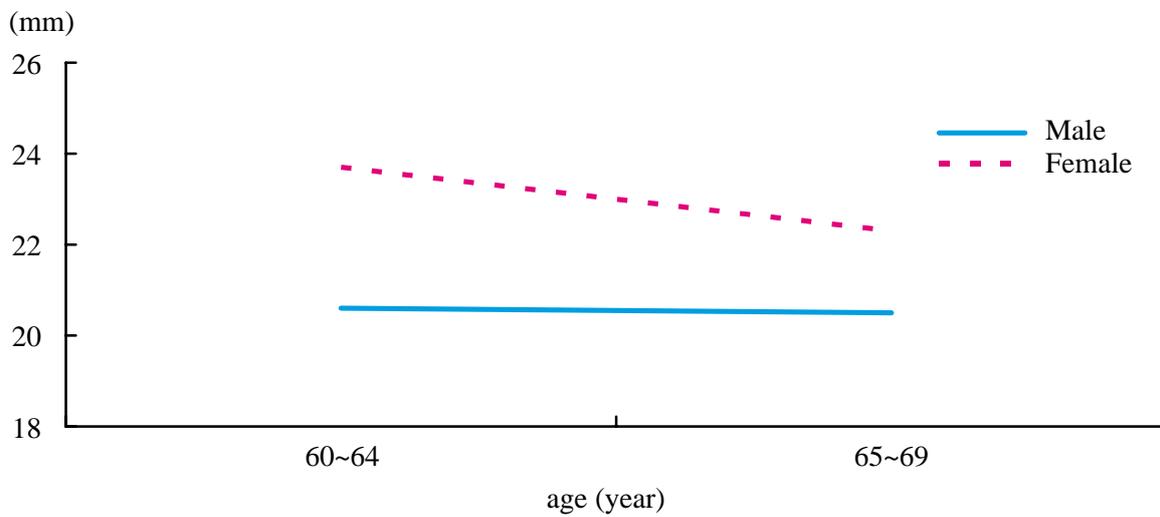


Figure 3-4-17 Subscapular skinfold thickness

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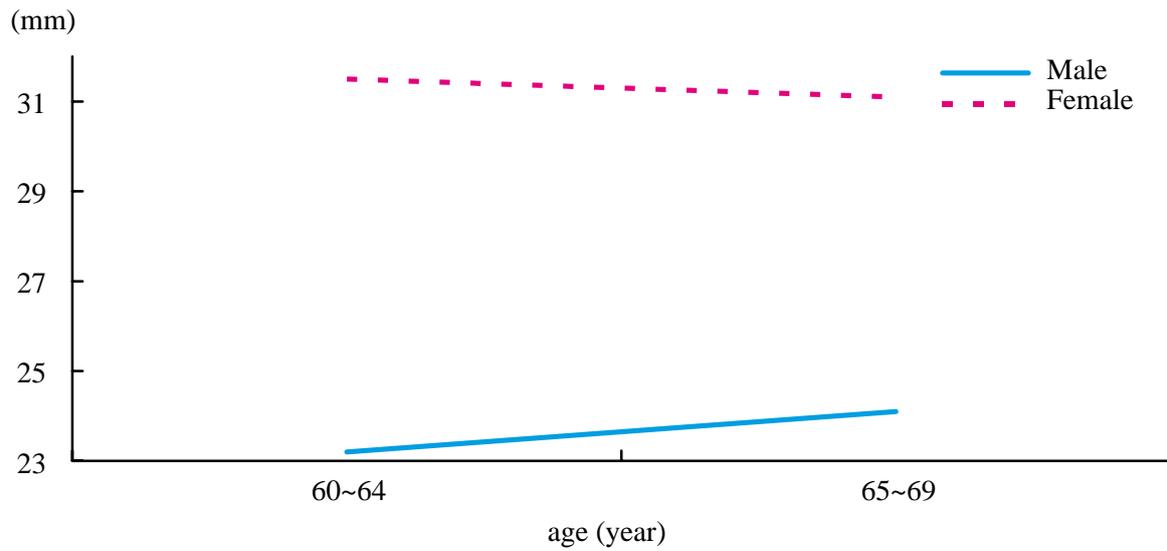


Figure 3-4-18 Abdominal skinfold thickness

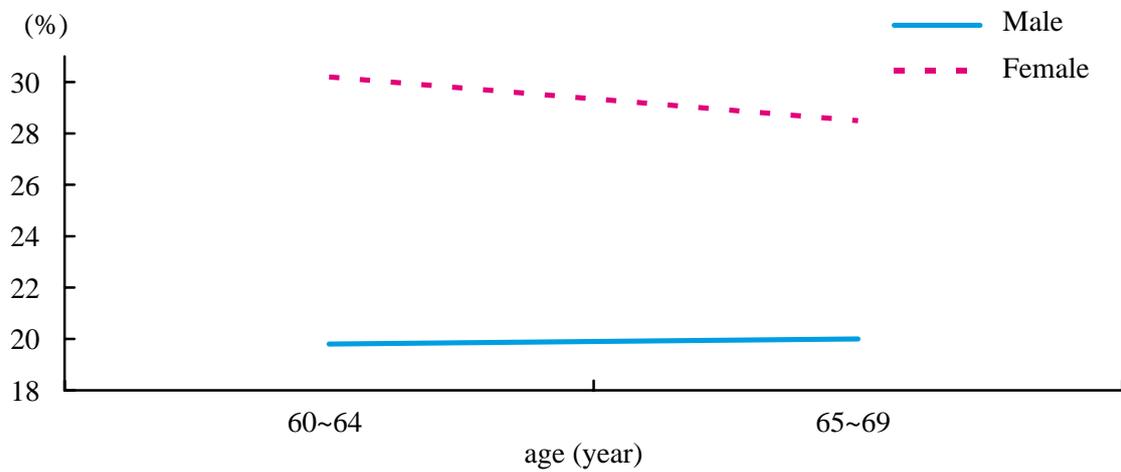


Figure 3-4-19 Percent body fat

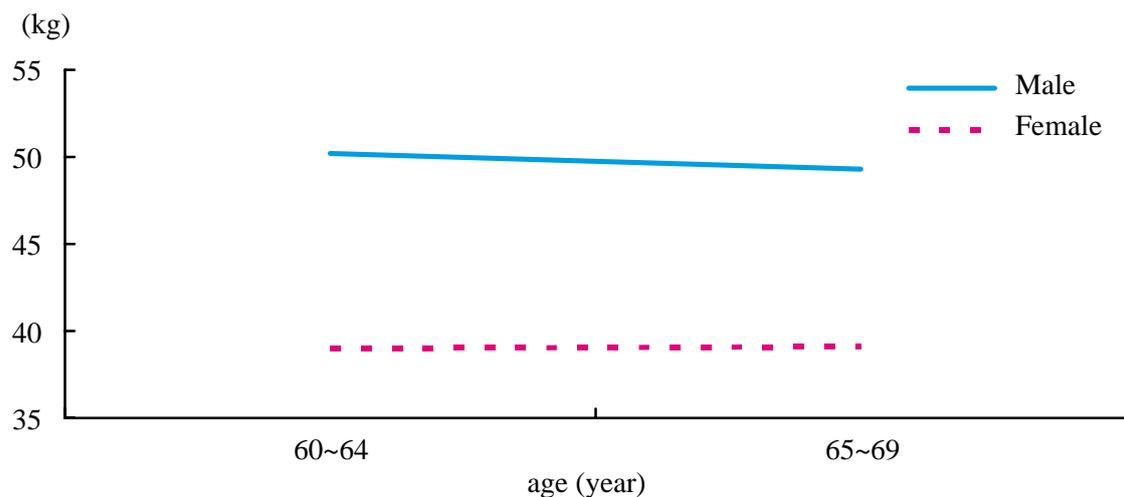


Figure 3-4-20 Lean body mass

### 3.4.4 Physiological Function

#### 3.4.4.1 Resting pulse

The average resting pulse of the male and female seniors at age 60~69 was stable as age increased, with no difference between both age groups. The average resting pulse ranged from 76~76.4 times/minute for males and 75.9~77.3 times/minute for females with no significant gender difference (table 4-4-2-4-48 and figure 3-4-21).

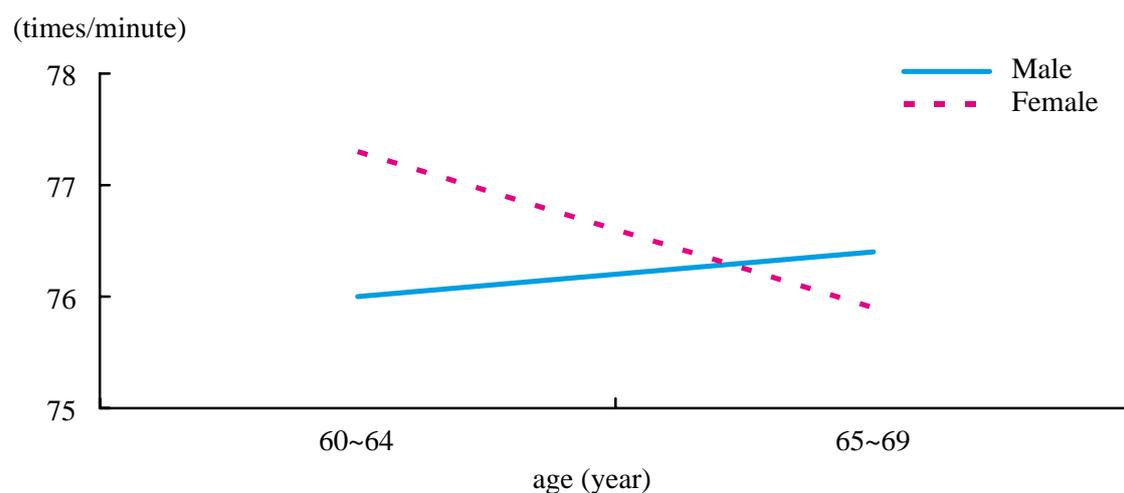


Figure 3-4-21 Resting pulse

### 3.4.4.2 Blood pressure

In the 60~69 age groups, the average systolic pressure of male and female seniors was fairly stable as age increased, with no significant difference between both age groups. The average systolic pressure of the male 60~64 and 65~69 age groups were 131.7 mmHg and 132.1 mmHg, respectively. As for females, the systolic pressures of the 60~64 and 65~69 age groups were 130.8 mmHg and 130.9 mmHg, respectively. The systolic pressure of males was slightly higher than females, but was of no significance (table 4-4-2-4-49 and figure 3-4-22).

As for diastolic pressure, it tended to decrease as age increased, but was of no significant difference between both age groups. The average diastolic pressure of the 60~64 and 65~69 age groups in males were 81.9 mmHg and 78.1 mmHg, respectively and were 78.6 mmHg and 74.9 mmHg, respectively in females. Males had a slightly higher diastolic pressure than females, but no significant gender difference was observed (table 4-4-2-4-50 and figure 3-4-23).

The average pressure difference tended to increase slowly as age increased, but was of no significant difference between age groups. The average pressure differences of the 60~64 and 65~69 age groups in males were 49.9 mmHg and 54.0 mmHg, respectively and were 52.2 mmHg and 56.1 mmHg, respectively in females. Males had a slightly lower pressure difference, but no gender difference was found (table 4-4-2-4-51 and figure 3-4-24).

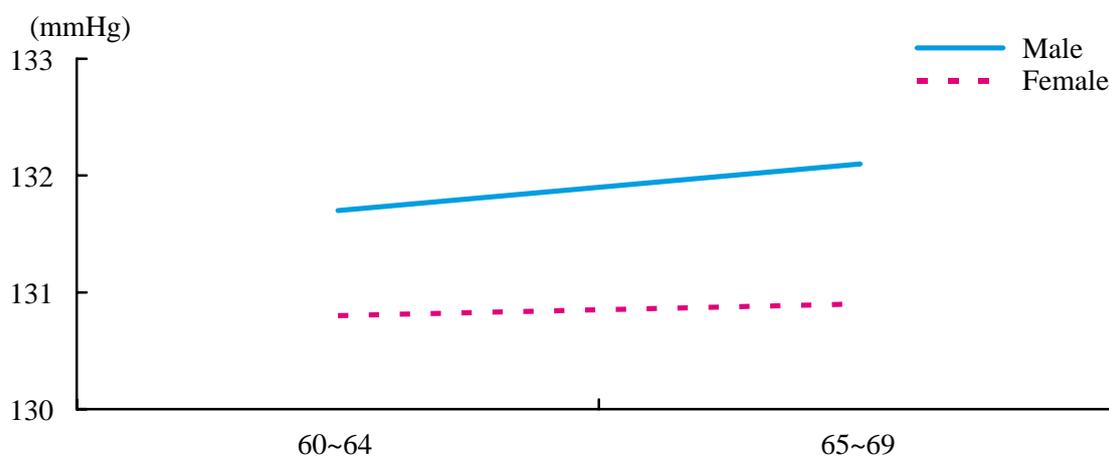


Figure 3-4-22 Systolic pressure

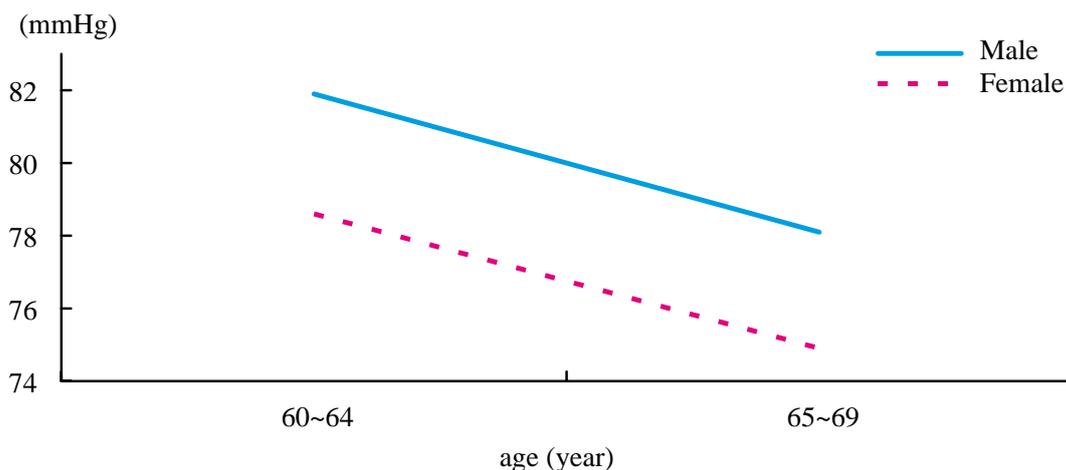


Figure 3-4-23 Diastolic pressure

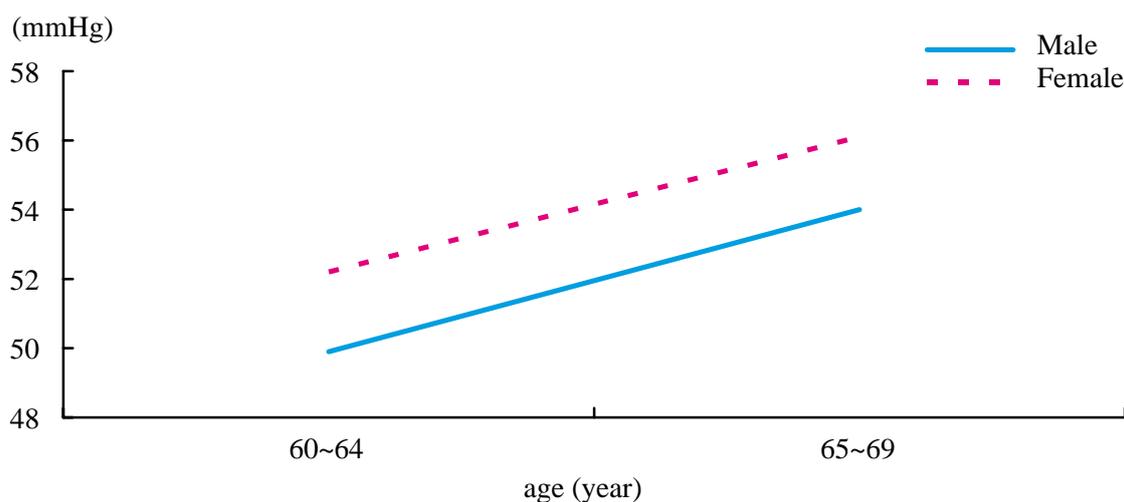


Figure 3-4-24 Pressure difference

### 3.4.4.3 Vital capacity

The average vital capacity of male and female seniors at age 60~69 decreased significantly as age increased. Comparison between both age groups showed that the average vital capacity decreased 364.7 ml in males and decreased 149.1 ml in females. The difference between the two age groups was significant ( $P < 0.01$ ). The average vital capacity of the 60~64 and 65~69 age groups in males were 2,890.4 ml and 2,525.7 ml, respectively and were 1,932.7 ml and 1,783.6 ml, respectively in females. The vital capacities of males were 957.7 ml and 742.1 ml

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higher than females in the 60~64 and 65~69 age groups, respectively. Significant gender difference in vital capacity was found ( $P<0.01$ ) (table 4-4-2-4-52 and figure 3-4-25).

The average vital capacity/weight tended to decrease slowly as age increased, but was of no significant difference between age groups. The average vital capacity/weight of males were 49.3 ml/kg and 42.4 ml/kg in the 60~64 and 65~69 age groups, respectively, with a significant difference between both age groups ( $P<0.05$ ). The average vital capacity/weight of females were 35.0 ml/kg and 32.7ml/kg in the 60~64 and 65~69 age groups, respectively, with a significant difference between both age groups ( $P<0.05$ ). Males had a slightly higher vital capacity compared to females, and the difference was significant ( $P<0.01$ ) (table 4-4-2-4-53 and figure 3-4-26).

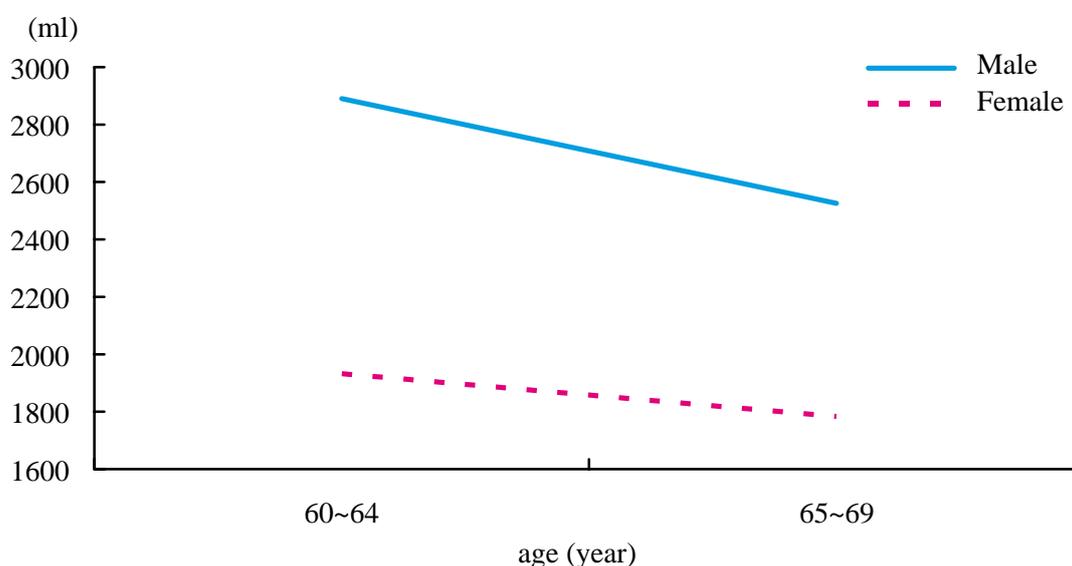


Figure 3-4-25 Vital capacity

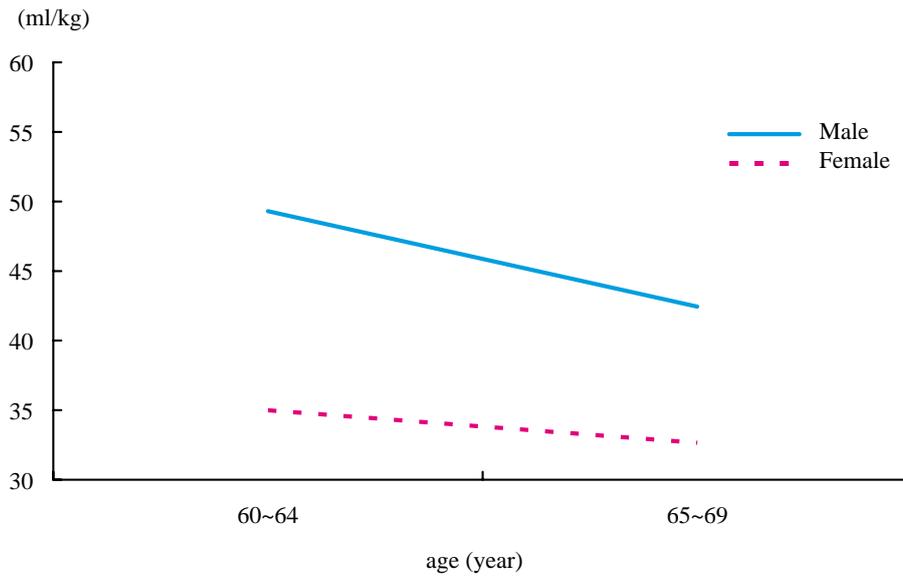


Figure 3-4-26 Vital capacity/weight

### 3.4.5 Physical Fitness

#### 3.4.5.1 Strength

Grip strength was used to reflect strength.

In the 60-69 age groups, the average grip strength for male and female seniors decreased as age increased. Grip strength decreased by 4 kg in males from the 60~64 to the 65~69 age groups ( $P < 0.05$ ). As for females, grip strength decreased by 1.7 kg only. The average grip strength ranged from 37.1~33.1 kg for males and 22.2~20.5 kg for females in the two age groups. Compared within the same age group, males had a significantly higher grip strength than females ( $P < 0.05$ ) with a difference of 14.9 kg and 12.6 kg in the 60~64 and 65~69 age groups, respectively (table 4-4-2-4-54 and figure 3-4-27).

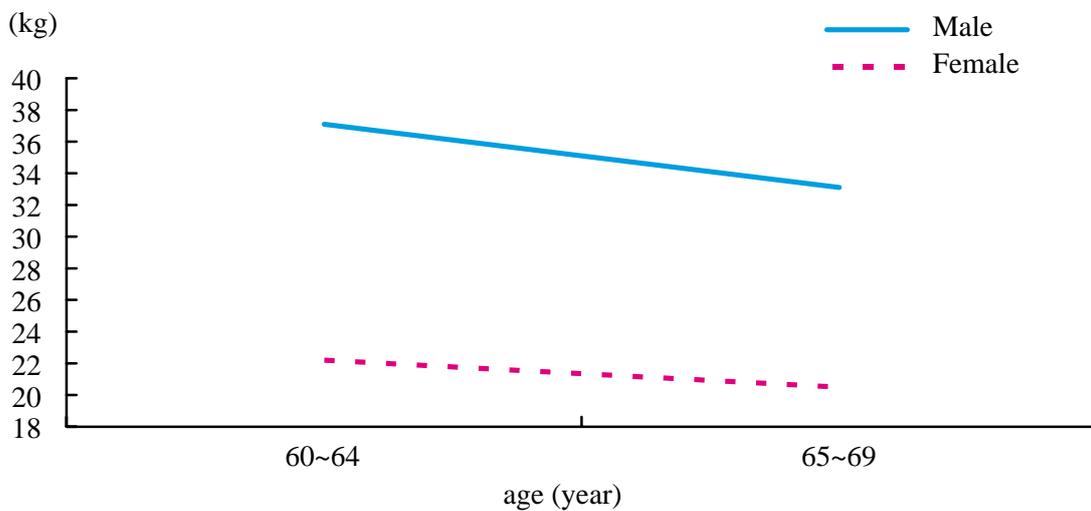


Figure 3-4-27 Grip strength

### 3.4.5.2 Flexibility

Sit and reach was used to reflect flexibility.

In the 60-69 age groups, the average sit and reach for male and female seniors tended to decrease slowly as age increased. Comparison of the 60~64 and 65~69 age groups showed that the flexibility index decreased by 3.6 cm for males and 2.7 cm for females as age increased. The average sit and reach ranged from 0.6~4.2 cm for males and 7.7~5.0 cm for females in both age groups. Compared with the same age group, females had a significantly higher flexibility index than males ( $P<0.05$ ), with 8.3 cm and 9.2 cm difference in the 60~64 and 65~69 age groups, respectively (table 4-4-2-4-55 and figure 3-4-28).

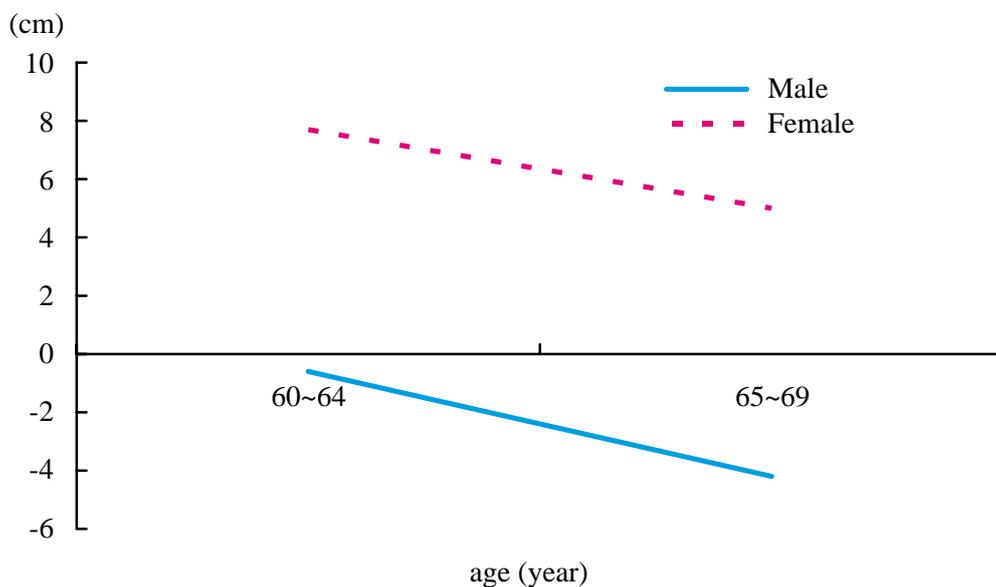


Figure 3-4-28 Sit and reach

### 3.4.5.3 Respond

Respond time was used to reflect respond ability.

In the 60~69 age groups, the average respond time increased apparently with age, especially with females. Compared between age group 60~64 and 65~69, the respond time of males increased by 0.04 seconds while females increased by 0.11 seconds. The average respond time ranged from 0.51~0.55 seconds for males and 0.57~0.68 seconds for females. The respond ability was better in males than females ( $P<0.05$ ) (table 4-4-2-4-56 and figure 3-4-29).

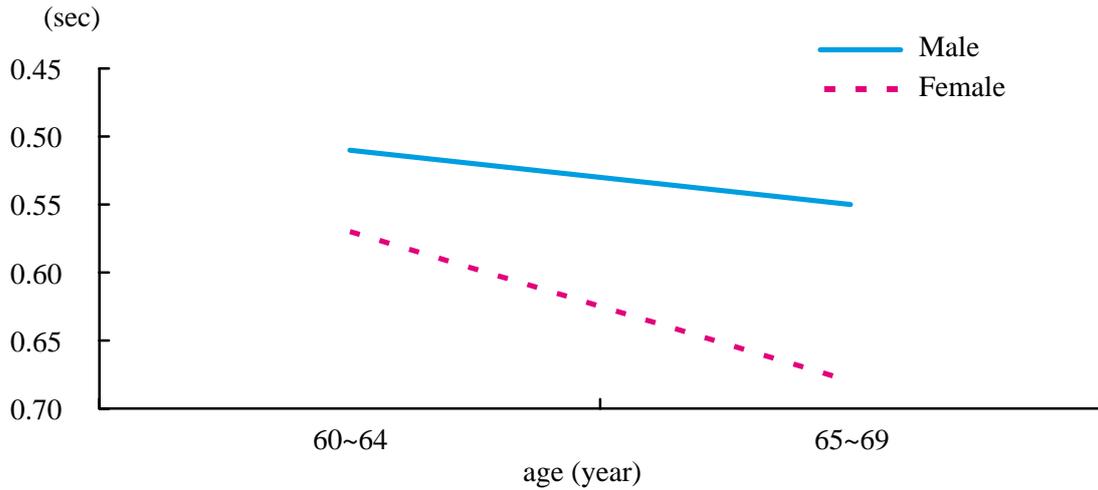


Figure 3-4-29 Respond time

### 3.4.5.4 Balance

One foot stands with eyes closed (OFSEC) was used to reflect balance.

In the 60~69 age groups, the average OFSEC for male and female seniors decreased slowly as age increased. Compared between age group 60~64 and 65~69, OFSEC decreased by 2.5 seconds in males and 2.3 seconds in females. The average OFSEC ranged from 10.6~8.1 seconds for males and 8.4~6.1 seconds for females. Compared within the same age group, males had a better balance ability than females ( $P < 0.05$ ) (table 4-4-2-4-57 and figure 3-4-30).

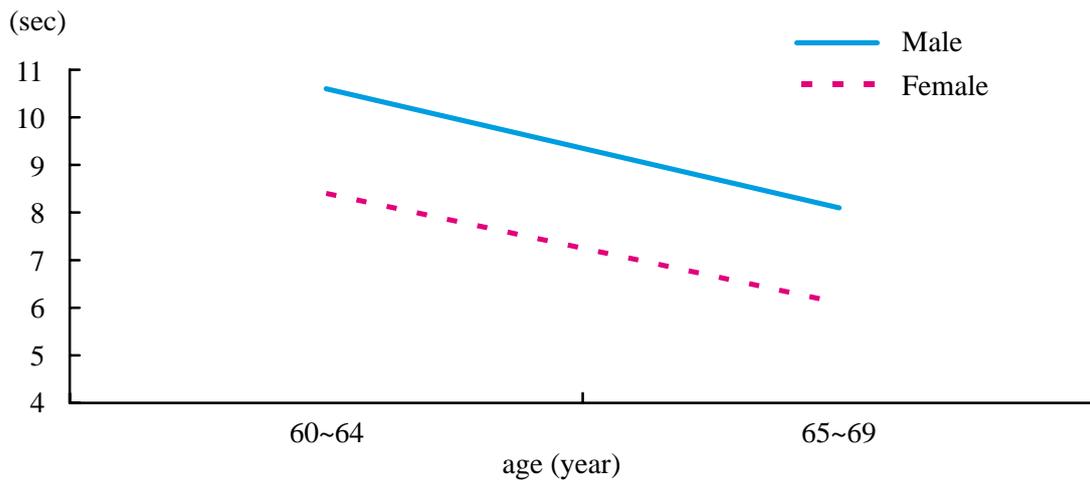


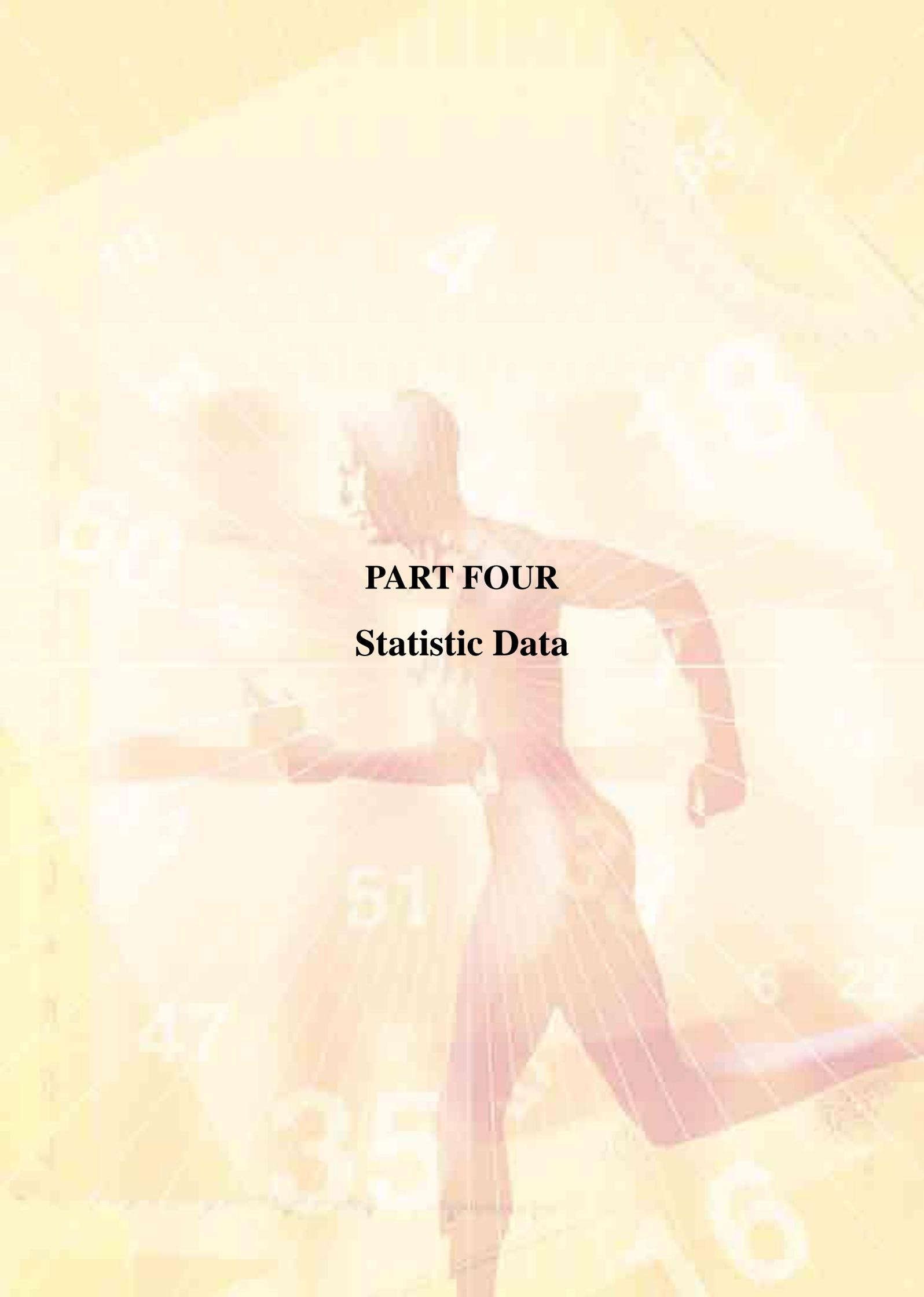
Figure 3-4-30 One foot stands with eyes closed (OFSEC)

### 3.4.6 Summary

To conclude, anthropometric measurements including height, weight, chest and hip circumferences, shoulder width and skinfold thickness remained stable or gradually decreased as age increased in the 60~69 senior age groups. Waist circumference, however, continued to increase as age increased. BMI and lean body mass remained constant while WHR increased and percent body fat decreased as age increased. Height indexes, weight, lean body mass and shoulder width of males were apparently higher than those of females. On the other hand, BMI, skinfold thickness and percent body fat were apparently lower than those of the females.

Physiological functions decreased apparently with age as indicated by a significant decrease in vital capacity between both age groups. The physiological functions of male seniors were generally better than females as shown by a significantly higher vital capacity in males than females.

Physical fitness decreased apparently with age as indicated by decrease muscle strength (grip strength), flexibility (sit and reach), respond ability (respond time) and balance ability (OFSEC). Males had better physical fitness indexes than females, except for flexibility.

A woman in a red dress is running across a yellow background. The background is filled with various numbers in white and yellow, some of which are slightly blurred. The woman is in the center of the frame, moving from left to right. Her dress is a vibrant red, and she appears to be in motion, with her arms and legs in a running posture. The overall scene is bright and energetic, with a strong contrast between the red and yellow.

**PART FOUR**  
**Statistic Data**

## PART FOUR

### Statistic Data

#### 4.1 Young Children

##### 4.1.1 Basic Information of the Subjects

Table 4-1-1-1-1 Distribution of sampling sites (kindergartens)

| Studied areas | Sampling site (kindergartens)                                    | M            |                | F            |                | Total        |                |
|---------------|------------------------------------------------------------------|--------------|----------------|--------------|----------------|--------------|----------------|
|               |                                                                  | Subjects (n) | Percentage (%) | Subjects (n) | Percentage (%) | Subjects (n) | Percentage (%) |
| North         | Keang Peng School (Kindergarten)                                 | 90           | 14.7           | 69           | 16.0           | 159          | 15.2           |
|               | Hou Kong Middle School (attached kindergarten)                   | 86           | 14.0           | 65           | 15.1           | 151          | 14.5           |
| Central       | Pui Ching Middle School (kindergarten)                           | 94           | 15.3           | 79           | 18.3           | 173          | 16.6           |
|               | Chan Sui Ki Perpetual Help College (branch school)               | 156          | 25.4           | 66           | 15.3           | 222          | 21.3           |
| South         | Poi To Middle School(branch school of Praia Grande-kindergarten) | 112          | 18.3           | 67           | 15.5           | 179          | 17.1           |
|               | Estrela do Mar School (kindergarten)                             | 75           | 12.2           | 85           | 19.7           | 160          | 15.3           |
| <b>Total</b>  |                                                                  | <b>613</b>   | <b>100</b>     | <b>431</b>   | <b>100</b>     | <b>1044</b>  | <b>100</b>     |

Table 4-1-1-1-2 Residential distribution of the subjects (%)

| Gender | Communities        | Keang Peng School (kindergarten) | Hou Kong Middle School (attached kindergarten) | Pui Ching Middle School (kindergarten) | Chan Sui Ki                                        | Poi To Middle                                      | Estrela do Mar School (kindergarten) | Total |
|--------|--------------------|----------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------------------|----------------------------------------------------|--------------------------------------|-------|
|        |                    |                                  |                                                |                                        | Perpetual Help College(branch school kindergarten) | School(branch school of Praia Grande kindergarten) |                                      |       |
| M      | Na. Sra. de Fátima | 72.2                             | 32.6                                           | 18.1                                   | 23.7                                               | 17.0                                               | 2.7                                  | 27.4  |
|        | S. António         | 7.8                              | 44.2                                           | 27.7                                   | 27.6                                               | 17.9                                               | 2.7                                  | 22.2  |
|        | S. Lázaro          | 11.1                             | 8.1                                            | 19.1                                   | 17.3                                               | 6.3                                                | 1.3                                  | 11.4  |
|        | Na. Sra. do Carmo  | 0.0                              | 3.5                                            | 16.0                                   | 18.6                                               | 21.4                                               | 2.7                                  | 11.9  |
|        | S. Lourenço        | 2.2                              | 4.7                                            | 8.5                                    | 4.5                                                | 14.3                                               | 89.3                                 | 17.0  |
|        | Sé Catedral        | 6.7                              | 7.0                                            | 10.6                                   | 8.3                                                | 23.2                                               | 1.3                                  | 10.1  |
| F      | Na. Sra. de Fátima | 66.7                             | 24.6                                           | 19.0                                   | 15.2                                               | 14.9                                               | 5.9                                  | 23.7  |
|        | S. António         | 14.5                             | 49.2                                           | 24.1                                   | 18.2                                               | 19.4                                               | 2.4                                  | 20.4  |
|        | S. Lázaro          | 11.6                             | 12.3                                           | 24.1                                   | 19.7                                               | 9.0                                                | 1.2                                  | 12.8  |
|        | Na. Sra. do Carmo  | 0.0                              | 3.1                                            | 17.7                                   | 16.7                                               | 6.0                                                | 5.9                                  | 8.4   |
|        | S. Lourenço        | 1.4                              | 6.2                                            | 8.9                                    | 12.1                                               | 29.9                                               | 80.0                                 | 25.1  |
|        | Sé Catedral        | 5.8                              | 4.6                                            | 6.3                                    | 18.2                                               | 20.9                                               | 4.7                                  | 9.3   |

Table 4-1-1-1-3 Birth place (%)

| Gender | Birth place | Aged 3 | Aged 4 | Aged 5 | Aged 6 | Total       |
|--------|-------------|--------|--------|--------|--------|-------------|
| M      | Mainland    | 4.4    | 0.5    | 4.2    | 6.1    | <b>3.4</b>  |
|        | Macao       | 92.5   | 95.8   | 92.1   | 91.8   | <b>93.3</b> |
|        | Hong Kong   | 1.9    | 1.6    | 2.4    | 1.0    | <b>1.8</b>  |
|        | Others      | 1.3    | 2.1    | 1.2    | 1.0    | <b>1.5</b>  |
| F      | Mainland    | 9.4    | 2.7    | 4.5    | 10.0   | <b>6.3</b>  |
|        | Macao       | 81.3   | 93.8   | 93.9   | 87.8   | <b>89.8</b> |
|        | Hong Kong   | 5.2    | 1.8    | 1.5    | 1.1    | <b>2.3</b>  |
|        | Others      | 4.1    | 1.7    | 0.0    | 1.1    | <b>1.6</b>  |

Table 4-1-1-1-4 Kindergarten attendance (%)

| Gender | Kindergarten attendance | Aged 3 | Aged 4 | Aged 5 | Aged 6 | Total       |
|--------|-------------------------|--------|--------|--------|--------|-------------|
| M      | Half day                | 14.5   | 4.7    | 5.5    | 0.0    | <b>7.0</b>  |
|        | Full day                | 85.5   | 95.3   | 94.5   | 100    | <b>93.0</b> |
| F      | Half day                | 10.4   | 4.4    | 0.0    | 0.0    | <b>3.9</b>  |
|        | Full day                | 89.6   | 95.6   | 100    | 100    | <b>96.1</b> |

Table 4-1-1-1-5 Young children guidance (%)

| Gender | Guidance   | Aged 3 | Aged 4 | Aged 5 | Aged 6 | Total       |
|--------|------------|--------|--------|--------|--------|-------------|
| M      | Parents    | 67.3   | 63.4   | 70.9   | 75.0   | <b>68.5</b> |
|        | Senior     | 11.9   | 18.8   | 7.3    | 18.5   | <b>13.7</b> |
|        | Babysitter | 16.4   | 10.5   | 17.0   | 1.1    | <b>12.3</b> |
|        | Others     | 4.4    | 7.3    | 4.8    | 5.4    | <b>5.5</b>  |
| F      | Parents    | 63.5   | 68.1   | 65.2   | 79.1   | <b>68.7</b> |
|        | Senior     | 19.8   | 12.4   | 17.4   | 10.5   | <b>15.1</b> |
|        | Babysitter | 13.5   | 16.8   | 10.6   | 5.8    | <b>11.8</b> |
|        | Others     | 3.1    | 2.7    | 6.8    | 4.7    | <b>4.4</b>  |

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### 4.1.2 Lifestyle

Table 4-1-1-1-6 Gestational age (%)

| Gender       | Age group (year) | Subjects (n) | Premature  | Full term   | Post term  |
|--------------|------------------|--------------|------------|-------------|------------|
| M            | 3                | 159          | 9.4        | 81.8        | 8.8        |
|              | 4                | 191          | 7.9        | 88.4        | 3.7        |
|              | 5                | 165          | 9.7        | 84.8        | 5.5        |
|              | 6                | 92           | 3.3        | 89.1        | 7.6        |
| F            | 3                | 96           | 9.4        | 87.5        | 3.1        |
|              | 4                | 113          | 6.2        | 85.8        | 8.0        |
|              | 5                | 132          | 7.6        | 87.1        | 5.3        |
|              | 6                | 86           | 7.0        | 88.4        | 4.6        |
| <b>Total</b> |                  | <b>1034</b>  | <b>7.8</b> | <b>86.4</b> | <b>5.8</b> |

Table 4-1-1-1-7 Birth weight (kg)

| Gender | Age group (year) | Subjects (n) | Average | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|--------------|---------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 119          | 3.3     | 0.41 | 2.6            | 2.8             | 3.1             | 3.3             | 3.5             | 3.9             | 4.0             |
|        | 4                | 151          | 3.4     | 0.68 | 2.4            | 2.7             | 3.0             | 3.3             | 3.6             | 3.9             | 4.6             |
|        | 5                | 114          | 3.3     | 0.47 | 2.3            | 2.6             | 3.0             | 3.4             | 3.7             | 3.8             | 4.0             |
|        | 6                | 66           | 3.4     | 0.47 | 2.3            | 2.9             | 3.1             | 3.4             | 3.6             | 4.0             | 4.5             |
| F      | 3                | 67           | 3.2     | 0.44 | 2.4            | 2.7             | 2.9             | 3.2             | 3.5             | 3.8             | 4.3             |
|        | 4                | 87           | 3.2     | 0.49 | 2.4            | 2.6             | 2.8             | 3.1             | 3.6             | 3.8             | 4.1             |
|        | 5                | 89           | 3.2     | 0.44 | 2.3            | 2.6             | 3.0             | 3.2             | 3.5             | 3.7             | 4.0             |
|        | 6                | 60           | 3.2     | 0.56 | 2.2            | 2.7             | 2.9             | 3.2             | 3.4             | 3.8             | 4.9             |

Table 4-1-1-1-8 Birth length (cm)

| Gender | Age group (year) | Subjects (n) | Average | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|--------------|---------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 119          | 49.6    | 2.13 | 44.2           | 47.0            | 49.0            | 50.0            | 51.0            | 52.0            | 53.0            |
|        | 4                | 151          | 49.3    | 2.83 | 43.0           | 45.0            | 48.0            | 50.0            | 51.0            | 52.9            | 54.0            |
|        | 5                | 114          | 49.3    | 3.58 | 40.3           | 45.0            | 48.0            | 50.0            | 51.0            | 52.0            | 54.6            |
|        | 6                | 66           | 49.6    | 2.97 | 43.0           | 46.0            | 48.0            | 50.0            | 51.6            | 52.0            | 53.0            |
| F      | 3                | 67           | 49.0    | 1.99 | 45.0           | 46.9            | 48.0            | 49.0            | 50.0            | 51.6            | 54.0            |
|        | 4                | 87           | 49.0    | 2.23 | 43.3           | 46.9            | 48.0            | 49.0            | 50.0            | 51.5            | 52.4            |
|        | 5                | 89           | 49.1    | 2.07 | 44.4           | 46.0            | 48.0            | 49.5            | 50.5            | 51.0            | 53.0            |
|        | 6                | 60           | 49.3    | 2.54 | 43.4           | 45.2            | 48.0            | 49.3            | 50.9            | 52.0            | 55.1            |

Table 4-1-1-1-9 Feeding pattern within 4 months after birth (%)

| Gender       | Age group (year) | Subjects (n) | Breast feeding | Formula feeding | Mix feeding |
|--------------|------------------|--------------|----------------|-----------------|-------------|
| M            | 3                | 159          | 7.5            | 69.2            | 23.3        |
|              | 4                | 191          | 8.4            | 71.7            | 19.9        |
|              | 5                | 165          | 10.9           | 70.3            | 18.8        |
|              | 6                | 92           | 10.9           | 62.0            | 27.1        |
| F            | 3                | 96           | 13.5           | 59.4            | 27.1        |
|              | 4                | 113          | 9.7            | 66.4            | 23.9        |
|              | 5                | 132          | 9.1            | 66.7            | 24.2        |
|              | 6                | 86           | 14.0           | 58.1            | 27.9        |
| <b>Total</b> |                  | <b>1034</b>  | <b>10.1</b>    | <b>66.7</b>     | <b>23.2</b> |

Table 4-1-1-1-10 Average sleeping hours (hrs) per day (%)

| Gender       | Age group (year) | Subjects (n) | Less than 8 hrs | 8~10 hrs    | At least 10 hrs |
|--------------|------------------|--------------|-----------------|-------------|-----------------|
| M            | 3                | 159          | 1.3             | 63.5        | 35.2            |
|              | 4                | 191          | 2.1             | 64.4        | 33.5            |
|              | 5                | 165          | 2.4             | 76.4        | 21.2            |
|              | 6                | 98           | 7.1             | 87.8        | 5.1             |
| F            | 3                | 96           | 0               | 72.9        | 27.1            |
|              | 4                | 113          | 0.9             | 66.4        | 32.7            |
|              | 5                | 132          | 1.5             | 75.0        | 23.5            |
|              | 6                | 90           | 2.2             | 83.3        | 14.4            |
| <b>Total</b> |                  | <b>1044</b>  | <b>2.1</b>      | <b>72.3</b> | <b>25.6</b>     |

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Table 4-1-1-1-11 Average hours of daily outdoor activities (%)

| Gender       | Age group (year) | Subjects (n) | Less than 30 mins | 30 mins~1 hr | 1~2 hrs     | At least 2 hrs |
|--------------|------------------|--------------|-------------------|--------------|-------------|----------------|
| M            | 3                | 159          | 18.2              | 36.5         | 29.6        | 15.7           |
|              | 4                | 191          | 20.4              | 41.4         | 28.8        | 9.4            |
|              | 5                | 165          | 24.8              | 40.6         | 26.1        | 8.5            |
|              | 6                | 98           | 42.9              | 33.7         | 16.3        | 7.1            |
| F            | 3                | 96           | 26.0              | 40.6         | 18.8        | 14.6           |
|              | 4                | 113          | 17.7              | 44.2         | 24.8        | 13.3           |
|              | 5                | 132          | 21.2              | 46.2         | 23.5        | 9.1            |
|              | 6                | 90           | 41.1              | 36.7         | 20.0        | 2.2            |
| <b>Total</b> |                  | <b>1044</b>  | <b>25.0</b>       | <b>40.2</b>  | <b>24.6</b> | <b>10.2</b>    |

Table 4-1-1-1-12 Average hours of watching TV, video and playing video games per day (%)

| Gender       | Age group (year) | Subjects (n) | Less than 30 mins | 30 mins~1hr | 1~2 hrs     | 2~ 3hrs     | At least 3 hrs |
|--------------|------------------|--------------|-------------------|-------------|-------------|-------------|----------------|
| M            | 3                | 159          | 11.9              | 33.3        | 30.8        | 18.2        | 5.7            |
|              | 4                | 191          | 9.4               | 27.7        | 40.8        | 17.8        | 4.2            |
|              | 5                | 165          | 9.1               | 26.1        | 36.4        | 21.2        | 7.3            |
|              | 6                | 98           | 13.3              | 33.7        | 28.6        | 15.3        | 9.2            |
| F            | 3                | 96           | 14.6              | 33.3        | 30.2        | 17.7        | 4.2            |
|              | 4                | 113          | 9.7               | 29.2        | 37.2        | 15.0        | 8.8            |
|              | 5                | 132          | 12.1              | 25.0        | 34.8        | 22.0        | 6.1            |
|              | 6                | 90           | 6.7               | 40.0        | 34.4        | 14.4        | 4.4            |
| <b>Total</b> |                  | <b>1044</b>  | <b>10.7</b>       | <b>30.3</b> | <b>34.8</b> | <b>18.1</b> | <b>6.1</b>     |

Table 4-1-1-1-13 Participation of extracurricular hobby classes (%)

| Gender       | Age group (year) | Subjects who participated in hobby classes | Physical exercise | Tutoring    | Music & dance | Drawing & calligraphy | Chess      | Others      |
|--------------|------------------|--------------------------------------------|-------------------|-------------|---------------|-----------------------|------------|-------------|
| M            | 3                | 40                                         | 25.0              | 40.0        | 20.0          | 20.0                  | 0.0        | 30.0        |
|              | 4                | 63                                         | 30.2              | 33.3        | 15.9          | 39.7                  | 7.9        | 20.6        |
|              | 5                | 95                                         | 22.1              | 28.4        | 21.1          | 33.7                  | 3.2        | 33.7        |
|              | 6                | 71                                         | 18.3              | 31.0        | 22.5          | 32.4                  | 11.3       | 23.9        |
| F            | 3                | 17                                         | 17.6              | 47.1        | 52.9          | 17.6                  | 0.0        | 17.6        |
|              | 4                | 57                                         | 15.8              | 28.1        | 59.6          | 26.3                  | 0.0        | 19.3        |
|              | 5                | 77                                         | 13.0              | 15.6        | 67.5          | 44.2                  | 3.9        | 13.0        |
|              | 6                | 65                                         | 18.5              | 18.5        | 61.5          | 33.8                  | 3.1        | 32.3        |
| <b>Total</b> |                  | <b>485</b>                                 | <b>20.0</b>       | <b>27.6</b> | <b>39.0</b>   | <b>33.4</b>           | <b>4.3</b> | <b>24.5</b> |

Table 4-1-1-1-14 Sports activities (%)

| Gender       | Age group (year) | Subjects (n) | Swimming    | Track & field | Balls       | Gymnastics  | Dancing     | Martial arts | Cycling     | Rope skipping | Others      |
|--------------|------------------|--------------|-------------|---------------|-------------|-------------|-------------|--------------|-------------|---------------|-------------|
| M            | 3                | 159          | 15.1        | 8.2           | 23.9        | 9.4         | 3.8         | 3.1          | 40.3        | 1.3           | 38.4        |
|              | 4                | 190          | 16.3        | 15.8          | 23.7        | 17.4        | 3.2         | 1.6          | 31.1        | 2.1           | 40          |
|              | 5                | 165          | 26.7        | 12.7          | 23.0        | 21.8        | 1.8         | 4.8          | 33.3        | 1.8           | 35.2        |
|              | 6                | 98           | 18.4        | 15.3          | 33.7        | 7.1         | 2.0         | 5.1          | 24.5        | 1.0           | 38.8        |
| F            | 3                | 96           | 12.5        | 5.2           | 17.7        | 14.6        | 14.6        | 11.0         | 14.6        | 5.2           | 47.9        |
|              | 4                | 113          | 17.7        | 6.2           | 12.4        | 22.1        | 31.9        | 0.9          | 25.7        | 3.5           | 37.2        |
|              | 5                | 132          | 23.5        | 6.8           | 8.3         | 23.5        | 35.6        | 1.5          | 31.8        | 8.3           | 22.7        |
|              | 6                | 90           | 18.9        | 5.6           | 5.6         | 14.4        | 30.0        | 3.3          | 14.4        | 12.2          | 40.0        |
| <b>Total</b> |                  | <b>1043</b>  | <b>18.9</b> | <b>10.1</b>   | <b>19.3</b> | <b>16.7</b> | <b>13.5</b> | <b>3.6</b>   | <b>28.8</b> | <b>3.9</b>    | <b>37.1</b> |

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Table 4-1-1-1-15 Frequency of having a flu or fever within the past year (%)

| Gender       | Age group (year) | Subjects (n) | Never      | 1~2 times   | 3~5 times   | At least 6 times |
|--------------|------------------|--------------|------------|-------------|-------------|------------------|
| M            | 3                | 159          | 2.5        | 20.8        | 54.7        | 22.0             |
|              | 4                | 191          | 1.0        | 33.0        | 51.3        | 14.7             |
|              | 5                | 165          | 8.5        | 38.8        | 41.8        | 10.9             |
|              | 6                | 98           | 8.7        | 54.3        | 29.3        | 7.6              |
| F            | 3                | 96           | 1.0        | 26.0        | 47.9        | 25.0             |
|              | 4                | 113          | 2.7        | 32.7        | 52.2        | 12.4             |
|              | 5                | 132          | 3.0        | 42.4        | 47.0        | 7.6              |
|              | 6                | 90           | 10.5       | 43.0        | 44.2        | 2.3              |
| <b>Total</b> |                  | <b>1044</b>  | <b>4.4</b> | <b>35.4</b> | <b>46.8</b> | <b>13.3</b>      |

Table 4-1-1-1-16 Occurrence of diseases (%)

| Gender       | Age group (year) | Subjects (n) | Yes         | No          |
|--------------|------------------|--------------|-------------|-------------|
| M            | 3                | 159          | 21.4        | 78.6        |
|              | 4                | 191          | 26.7        | 73.3        |
|              | 5                | 165          | 24.8        | 75.2        |
|              | 6                | 98           | 26.5        | 73.5        |
| F            | 3                | 96           | 26.0        | 74.0        |
|              | 4                | 113          | 23.9        | 76.1        |
|              | 5                | 132          | 25.0        | 75.0        |
|              | 6                | 90           | 12.2        | 87.8        |
| <b>Total</b> |                  | <b>1044</b>  | <b>23.8</b> | <b>76.2</b> |

Table 4-1-1-1-17 Diseases commonly seen (%)

| Gender       | Age group (year) | Disease-stricken young children (n) | Chronic bronchitis | Pneumonia   | Accidental injury |
|--------------|------------------|-------------------------------------|--------------------|-------------|-------------------|
| M            | 3                | 34                                  | 35.3               | 35.3        | 5.9               |
|              | 4                | 51                                  | 43.1               | 13.7        | 15.7              |
|              | 5                | 41                                  | 39.0               | 26.8        | 12.2              |
|              | 6                | 26                                  | 42.3               | 34.6        | 7.7               |
| F            | 3                | 25                                  | 52.0               | 60.0        | 8.0               |
|              | 4                | 27                                  | 51.9               | 14.8        | 7.4               |
|              | 5                | 33                                  | 36.4               | 24.2        | 9.1               |
|              | 6                | 11                                  | 54.5               | 27.3        | 18.2              |
| <b>Total</b> |                  | <b>248</b>                          | <b>42.7</b>        | <b>27.8</b> | <b>10.5</b>       |

### 4.1.3 Anthropometric Measurements

Table 4-1-2-1-18 Height (cm)

| Gender | Age group (year) | n   | Mean  | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 99.3  | 3.87 | 92.5           | 94.1            | 96.9            | 99.1            | 102.2           | 104.7           | 106.7           |
|        | 4                | 191 | 105.5 | 4.37 | 96.5           | 100.2           | 102.5           | 105.4           | 109.1           | 111.1           | 113.0           |
|        | 5                | 165 | 112.0 | 4.86 | 103.2          | 105.6           | 109.2           | 111.7           | 115.4           | 118.1           | 122.2           |
|        | 6                | 98  | 117.6 | 5.32 | 107.2          | 110.6           | 113.4           | 117.6           | 121.5           | 124.7           | 128.2           |
| F      | 3                | 96  | 97.1  | 3.93 | 89.9           | 91.9            | 94.1            | 97.2            | 99.8            | 102.0           | 104.8           |
|        | 4                | 113 | 104.6 | 4.62 | 94.8           | 99.7            | 101.5           | 104.0           | 107.5           | 110.7           | 113.7           |
|        | 5                | 132 | 111.7 | 4.73 | 102.1          | 105.6           | 108.9           | 111.8           | 114.8           | 117.4           | 120.1           |
|        | 6                | 90  | 116.8 | 4.29 | 107.6          | 111.1           | 114.0           | 116.5           | 119.6           | 122.2           | 126.6           |

Table 4-1-2-1-19 Sitting height (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 57.3 | 2.05 | 53.0           | 54.6            | 56.0            | 57.4            | 58.7            | 59.8            | 60.6            |
|        | 4                | 191 | 59.7 | 2.35 | 55.1           | 56.5            | 58.2            | 59.6            | 61.2            | 62.7            | 63.8            |
|        | 5                | 165 | 62.3 | 2.50 | 57.4           | 59.1            | 60.9            | 62.3            | 63.9            | 65.7            | 67.0            |
|        | 6                | 98  | 64.5 | 2.95 | 57.6           | 60.7            | 63.0            | 64.8            | 66.4            | 68.1            | 70.0            |
| F      | 3                | 96  | 56.1 | 2.21 | 52.2           | 53.2            | 54.4            | 56.3            | 57.5            | 59.0            | 60.1            |
|        | 4                | 113 | 59.2 | 2.31 | 54.7           | 56.4            | 57.5            | 59.3            | 60.5            | 62.4            | 63.8            |
|        | 5                | 132 | 61.7 | 2.39 | 57.4           | 58.6            | 60.2            | 61.5            | 63.5            | 64.5            | 66.6            |
|        | 6                | 90  | 63.9 | 2.42 | 60.2           | 61.0            | 62.1            | 63.8            | 65.5            | 67.1            | 68.7            |

Table 4-1-2-1-20 Foot length (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 15.6 | 0.75 | 14.0           | 14.7            | 15.2            | 15.6            | 16.1            | 16.5            | 17.0            |
|        | 4                | 191 | 16.5 | 0.78 | 15.0           | 15.6            | 16.0            | 16.5            | 17.2            | 17.5            | 17.8            |
|        | 5                | 165 | 17.5 | 0.92 | 15.9           | 16.3            | 16.9            | 17.3            | 18.1            | 18.6            | 19.2            |
|        | 6                | 98  | 18.1 | 0.98 | 16.2           | 16.9            | 17.4            | 18.1            | 18.7            | 19.3            | 20.3            |
| F      | 3                | 96  | 15.1 | 0.81 | 13.7           | 14.1            | 14.5            | 15.1            | 15.7            | 16.3            | 16.5            |
|        | 4                | 113 | 16.2 | 0.89 | 14.2           | 15.0            | 15.5            | 16.2            | 16.8            | 17.3            | 17.9            |
|        | 5                | 132 | 17.2 | 0.90 | 15.6           | 16.1            | 16.6            | 17.3            | 17.9            | 18.4            | 18.9            |
|        | 6                | 90  | 17.9 | 0.93 | 16.1           | 16.6            | 17.3            | 18.0            | 18.5            | 19.2            | 19.7            |

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Table 4-1-2-1-21 Weight (kg)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 15.3 | 1.77 | 12.3           | 13.2            | 14.1            | 15.1            | 16.1            | 17.6            | 19.2            |
|        | 4                | 191 | 17.1 | 2.36 | 13.6           | 14.3            | 15.5            | 17.0            | 18.5            | 20.1            | 22.3            |
|        | 5                | 165 | 19.5 | 3.19 | 15.2           | 16.2            | 17.3            | 19.2            | 21.2            | 23.1            | 28.9            |
|        | 6                | 98  | 21.4 | 4.03 | 15.3           | 16.8            | 19.0            | 20.7            | 23.2            | 26.5            | 32.5            |
| F      | 3                | 96  | 14.6 | 1.93 | 11.3           | 12.3            | 13.4            | 14.6            | 16.1            | 16.8            | 18.2            |
|        | 4                | 113 | 17.0 | 2.51 | 12.9           | 13.8            | 15.2            | 16.6            | 18.7            | 20.0            | 21.0            |
|        | 5                | 132 | 19.0 | 2.71 | 14.4           | 15.9            | 17.2            | 18.7            | 20.5            | 22.7            | 26.1            |
|        | 6                | 90  | 20.8 | 4.02 | 16.2           | 17.0            | 18.6            | 20.3            | 21.9            | 25.2            | 27.5            |

Table 4-1-2-1-22 BMI

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 15.5 | 1.15 | 13.6           | 14.1            | 14.7            | 15.4            | 16.0            | 16.8            | 18.3            |
|        | 4                | 191 | 15.4 | 1.46 | 13.1           | 13.8            | 14.4            | 15.2            | 16.1            | 17.1            | 18.3            |
|        | 5                | 165 | 15.5 | 1.77 | 12.9           | 13.7            | 14.4            | 15.2            | 16.2            | 18.0            | 20.3            |
|        | 6                | 98  | 15.4 | 2.08 | 12.7           | 13.5            | 14.1            | 14.9            | 16.1            | 18.6            | 20.1            |
| F      | 3                | 96  | 15.5 | 1.22 | 13.3           | 13.8            | 14.6            | 15.4            | 16.2            | 16.9            | 18.3            |
|        | 4                | 113 | 15.5 | 1.65 | 13.1           | 13.7            | 14.2            | 15.2            | 16.1            | 18.0            | 19.4            |
|        | 5                | 132 | 15.2 | 1.59 | 12.6           | 13.5            | 14.2            | 15.0            | 15.8            | 17.0            | 18.4            |
|        | 6                | 90  | 15.2 | 2.59 | 12.7           | 13.5            | 14.0            | 14.7            | 16.0            | 17.2            | 18.1            |

Table 4-1-2-1-23 Weight status according to height for weight standards (%)

| Gender       | Age group (year) | n          | Underweight | Slightly underweight | Normal      | Slightly overweight | Overweight |
|--------------|------------------|------------|-------------|----------------------|-------------|---------------------|------------|
| M            | 3                | 159        | 1.3         | 6.9                  | 81.8        | 3.8                 | 6.3        |
|              | 4                | 191        | 1.6         | 11.5                 | 72.3        | 6.8                 | 7.9        |
|              | 5                | 165        | 2.4         | 10.9                 | 65.5        | 9.7                 | 11.5       |
|              | 6                | 98         | 3.1         | 11.2                 | 69.4        | 1.0                 | 15.3       |
| <b>Total</b> |                  | <b>613</b> | <b>2.0</b>  | <b>10.1</b>          | <b>72.5</b> | <b>5.9</b>          | <b>9.6</b> |
| F            | 3                | 96         | 8.4         | 6.3                  | 77.9        | 6.3                 | 1.1        |
|              | 4                | 113        | 5.3         | 15.0                 | 64.6        | 8.0                 | 7.1        |
|              | 5                | 132        | 7.6         | 9.1                  | 72.0        | 6.1                 | 5.3        |
|              | 6                | 90         | 8.9         | 15.6                 | 61.1        | 12.2                | 2.2        |
| <b>Total</b> |                  | <b>431</b> | <b>7.4</b>  | <b>11.4</b>          | <b>69.1</b> | <b>7.9</b>          | <b>4.2</b> |

Table 4-1-2-1-24 Chest circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 51.5 | 2.39 | 48.0           | 49.0            | 49.8            | 51.4            | 53.0            | 54.3            | 57.0            |
|        | 4                | 191 | 53.3 | 3.02 | 48.4           | 50.1            | 51.2            | 53.0            | 54.9            | 56.9            | 60.2            |
|        | 5                | 165 | 55.6 | 3.75 | 51.2           | 51.9            | 53.0            | 55.0            | 56.9            | 60.4            | 65.5            |
|        | 6                | 98  | 57.0 | 4.34 | 50.3           | 52.3            | 54.1            | 56.5            | 58.8            | 62.0            | 67.3            |
| F      | 3                | 96  | 50.5 | 2.49 | 46.4           | 47.3            | 48.6            | 50.1            | 52.2            | 53.6            | 56.0            |
|        | 4                | 113 | 52.5 | 3.20 | 47.3           | 49.2            | 50.5            | 52.2            | 54.2            | 56.6            | 58.3            |
|        | 5                | 132 | 54.3 | 3.11 | 49.0           | 50.8            | 52.2            | 54.0            | 56.2            | 57.9            | 61.1            |
|        | 6                | 90  | 55.8 | 3.20 | 51.5           | 52.4            | 53.2            | 55.5            | 57.6            | 60.0            | 63.7            |

Table 4-1-2-1-25 Waist circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 48.0 | 3.24 | 41.7           | 44.1            | 46.0            | 47.8            | 49.8            | 51.7            | 55.0            |
|        | 4                | 191 | 49.7 | 3.84 | 43.0           | 45.6            | 47.5            | 49.1            | 51.7            | 54.5            | 58.4            |
|        | 5                | 165 | 51.6 | 4.95 | 45.7           | 46.6            | 48.3            | 50.5            | 53.2            | 58.5            | 65.4            |
|        | 6                | 98  | 53.1 | 5.95 | 44.0           | 46.9            | 49.6            | 52.3            | 55.3            | 60.3            | 69.2            |
| F      | 3                | 96  | 46.4 | 3.16 | 40.8           | 42.7            | 44.0            | 46.6            | 48.3            | 50.6            | 52.8            |
|        | 4                | 113 | 48.2 | 3.97 | 42.4           | 43.7            | 45.5            | 47.5            | 50.3            | 53.5            | 56.2            |
|        | 5                | 132 | 49.6 | 3.64 | 44.4           | 45.5            | 47.0            | 49.1            | 51.8            | 54.2            | 57.8            |
|        | 6                | 90  | 51.0 | 3.86 | 45.4           | 46.0            | 48.0            | 50.6            | 53.5            | 56.0            | 59.1            |

Table 4-1-2-1-26 Hip circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 52.3 | 3.06 | 46.8           | 48.9            | 50.3            | 52.3            | 54.0            | 56.1            | 58.6            |
|        | 4                | 191 | 54.9 | 3.91 | 48.9           | 50.2            | 52.0            | 55.0            | 57.2            | 59.5            | 62.7            |
|        | 5                | 165 | 57.7 | 4.53 | 51.5           | 53.0            | 54.4            | 56.9            | 60.1            | 63.8            | 70.4            |
|        | 6                | 98  | 60.0 | 5.56 | 50.2           | 53.2            | 57.2            | 59.0            | 62.0            | 67.5            | 75.2            |
| F      | 3                | 96  | 51.6 | 3.22 | 46.0           | 47.5            | 49.5            | 51.8            | 53.7            | 55.7            | 57.7            |
|        | 4                | 113 | 54.9 | 3.94 | 47.6           | 50.4            | 52.5            | 54.2            | 57.3            | 60.1            | 63.6            |
|        | 5                | 132 | 57.4 | 3.84 | 51.6           | 53.1            | 54.8            | 56.8            | 59.0            | 63.1            | 66.3            |
|        | 6                | 90  | 59.2 | 4.00 | 52.3           | 54.7            | 55.9            | 58.5            | 62.0            | 65.2            | 67.2            |

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Table 4-1-2-1-27 Waist to Hip Ratio (WHR)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 0.916 | 0.033 | 0.859          | 0.872           | 0.893           | 0.915           | 0.941           | 0.963           | 0.974           |
|        | 4                | 191 | 0.905 | 0.039 | 0.837          | 0.859           | 0.876           | 0.905           | 0.930           | 0.956           | 0.973           |
|        | 5                | 165 | 0.893 | 0.038 | 0.821          | 0.846           | 0.870           | 0.893           | 0.914           | 0.941           | 0.975           |
|        | 6                | 98  | 0.884 | 0.040 | 0.817          | 0.843           | 0.858           | 0.882           | 0.899           | 0.933           | 0.959           |
| F      | 3                | 96  | 0.900 | 0.036 | 0.841          | 0.858           | 0.876           | 0.899           | 0.920           | 0.937           | 0.977           |
|        | 4                | 113 | 0.879 | 0.038 | 0.818          | 0.831           | 0.851           | 0.877           | 0.901           | 0.932           | 0.967           |
|        | 5                | 132 | 0.865 | 0.034 | 0.807          | 0.825           | 0.839           | 0.864           | 0.884           | 0.913           | 0.934           |
|        | 6                | 90  | 0.862 | 0.037 | 0.798          | 0.814           | 0.839           | 0.860           | 0.887           | 0.901           | 0.935           |

Table 4-1-2-1-28 Shoulder width (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 22.4 | 1.29 | 20.1           | 21.1            | 21.7            | 22.5            | 23.2            | 23.9            | 24.2            |
|        | 4                | 191 | 23.6 | 1.21 | 21.5           | 22.1            | 22.6            | 23.5            | 24.3            | 25.3            | 26.0            |
|        | 5                | 165 | 24.7 | 1.64 | 20.9           | 23.2            | 24.0            | 24.7            | 25.6            | 26.5            | 27.4            |
|        | 6                | 98  | 25.6 | 1.71 | 22.2           | 23.9            | 24.6            | 25.5            | 26.8            | 27.5            | 28.5            |
| F      | 3                | 96  | 21.9 | 1.17 | 20.1           | 20.5            | 21.3            | 21.9            | 22.7            | 23.2            | 24.1            |
|        | 4                | 113 | 23.1 | 1.25 | 20.9           | 21.8            | 22.5            | 23.3            | 23.8            | 24.6            | 25.0            |
|        | 5                | 132 | 24.4 | 1.33 | 21.9           | 22.8            | 23.7            | 24.5            | 25.3            | 25.9            | 27.0            |
|        | 6                | 90  | 25.0 | 1.26 | 23.0           | 23.8            | 24.3            | 25.1            | 25.7            | 26.5            | 27.2            |

Table 4-1-2-1-29 Pelvis width (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 16.5 | 1.25 | 14.3           | 15.2            | 15.9            | 16.5            | 17.1            | 17.7            | 18.2            |
|        | 4                | 191 | 17.2 | 0.95 | 15.0           | 16.0            | 16.5            | 17.2            | 17.8            | 18.4            | 18.8            |
|        | 5                | 165 | 18.0 | 1.35 | 15.6           | 16.5            | 17.3            | 17.9            | 18.6            | 19.3            | 20.2            |
|        | 6                | 98  | 18.6 | 1.15 | 16.5           | 17.0            | 17.9            | 18.6            | 19.3            | 20.3            | 20.7            |
| F      | 3                | 96  | 15.5 | 0.98 | 13.7           | 14.4            | 14.8            | 15.6            | 16.2            | 16.6            | 17.2            |
|        | 4                | 113 | 16.2 | 0.94 | 14.6           | 15.0            | 15.4            | 16.2            | 16.7            | 17.5            | 17.9            |
|        | 5                | 132 | 16.9 | 1.16 | 15.1           | 15.5            | 16.2            | 16.8            | 17.6            | 18.1            | 18.6            |
|        | 6                | 90  | 17.6 | 1.09 | 15.6           | 16.0            | 17.0            | 17.5            | 18.4            | 19.2            | 19.7            |

Table 4-1-2-1-30 Upper arm skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 8.4  | 1.77 | 5.9            | 6.5             | 7.0             | 8.0             | 9.5             | 10.5            | 12.6            |
|        | 4                | 191 | 8.8  | 2.76 | 5.4            | 6.0             | 7.0             | 8.4             | 10.0            | 12.0            | 15.3            |
|        | 5                | 165 | 9.5  | 3.91 | 5.5            | 6.3             | 7.0             | 8.5             | 10.5            | 13.7            | 20.5            |
|        | 6                | 98  | 9.9  | 4.41 | 4.5            | 5.5             | 7.0             | 9.5             | 11.0            | 15.1            | 20.8            |
| F      | 3                | 94  | 10.0 | 2.32 | 5.8            | 7.1             | 8.5             | 9.7             | 11.5            | 13.3            | 15.1            |
|        | 4                | 112 | 10.5 | 3.00 | 6.2            | 7.0             | 8.3             | 10.0            | 12.0            | 14.1            | 17.1            |
|        | 5                | 132 | 10.5 | 2.93 | 6.3            | 7.5             | 8.3             | 10.0            | 12.1            | 14.0            | 18.5            |
|        | 6                | 90  | 10.1 | 3.09 | 5.6            | 6.8             | 8.3             | 9.5             | 11.9            | 13.9            | 17.8            |

Table 4-1-2-1-31 Subscapular skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 5.7  | 1.37 | 4.0            | 4.5             | 4.8             | 5.5             | 6.0             | 7.5             | 9.6             |
|        | 4                | 191 | 5.7  | 2.09 | 3.9            | 4.0             | 4.5             | 5.3             | 6.0             | 7.5             | 12.0            |
|        | 5                | 165 | 6.2  | 3.28 | 4.0            | 4.5             | 4.5             | 5.0             | 6.3             | 8.1             | 14.6            |
|        | 6                | 98  | 6.5  | 3.25 | 3.5            | 4.0             | 4.5             | 5.3             | 6.5             | 10.6            | 17.0            |
| F      | 3                | 93  | 7.8  | 2.19 | 4.7            | 5.4             | 6.3             | 7.5             | 8.9             | 11.3            | 13.2            |
|        | 4                | 112 | 8.4  | 3.32 | 5.3            | 5.5             | 6.2             | 7.5             | 9.5             | 12.0            | 17.1            |
|        | 5                | 132 | 8.1  | 3.14 | 5.0            | 5.4             | 6.3             | 7.2             | 9.0             | 11.9            | 16.0            |
|        | 6                | 90  | 7.6  | 3.21 | 4.5            | 5.0             | 5.4             | 6.5             | 8.7             | 12.2            | 17.2            |

Table 4-1-2-1-32 Abdominal skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 5.3  | 1.77 | 3.0            | 3.5             | 4.0             | 5.0             | 6.0             | 8.0             | 9.5             |
|        | 4                | 191 | 5.9  | 2.93 | 3.0            | 3.5             | 4.5             | 5.2             | 6.5             | 8.5             | 13.3            |
|        | 5                | 165 | 7.0  | 5.38 | 3.0            | 3.5             | 4.0             | 5.5             | 7.0             | 12.0            | 25.6            |
|        | 6                | 98  | 8.1  | 6.15 | 3.0            | 3.5             | 4.5             | 6.0             | 8.5             | 17.2            | 26.5            |
| F      | 3                | 92  | 7.0  | 2.57 | 3.7            | 4.4             | 5.3             | 6.4             | 8.0             | 10.0            | 14.0            |
|        | 4                | 112 | 8.5  | 4.06 | 4.1            | 4.7             | 5.8             | 7.2             | 10.1            | 13.4            | 18.5            |
|        | 5                | 132 | 8.5  | 3.82 | 4.2            | 5.1             | 6.0             | 7.4             | 9.8             | 14.4            | 18.0            |
|        | 6                | 90  | 8.5  | 4.02 | 4.0            | 4.8             | 5.8             | 7.0             | 10.2            | 14.9            | 19.6            |

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### 4.1.4 Physiological Function

Table 4-1-2-1-33 Resting heart rate (beats/min – bpm)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 106.8 | 9.84  | 90.0           | 94.0            | 100.0           | 106.0           | 112.0           | 120.0           | 128.2           |
|        | 4                | 191 | 105.4 | 9.45  | 86.0           | 91.2            | 100.0           | 106.0           | 111.0           | 116.0           | 123.4           |
|        | 5                | 165 | 103.0 | 9.45  | 84.0           | 91.6            | 98.0            | 102.0           | 108.0           | 116.4           | 124.0           |
|        | 6                | 98  | 97.1  | 10.91 | 76.0           | 82.0            | 89.5            | 98.0            | 104.0           | 114.0           | 118.0           |
| F      | 3                | 96  | 106.7 | 10.50 | 82.0           | 92.7            | 100.0           | 107.5           | 114.8           | 120.0           | 123.1           |
|        | 4                | 113 | 103.8 | 9.58  | 81.0           | 91.4            | 99.0            | 104.0           | 108.5           | 117.0           | 122.7           |
|        | 5                | 132 | 102.3 | 9.58  | 86.0           | 90.0            | 96.0            | 101.5           | 109.0           | 116.0           | 120.0           |
|        | 6                | 90  | 96.5  | 12.89 | 70.0           | 80.2            | 88.0            | 97.0            | 105.3           | 111.8           | 127.1           |

### 4.1.5 Physical Fitness

Table 4-1-2-1-34 10 m shuttle run (sec)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 9.9  | 1.64 | 7.8            | 8.2             | 8.7             | 9.7             | 10.7            | 12.0            | 14.1            |
|        | 4                | 191 | 8.3  | 1.19 | 6.8            | 7.1             | 7.6             | 8.0             | 8.9             | 9.9             | 11.7            |
|        | 5                | 165 | 7.3  | 0.99 | 6.2            | 6.4             | 6.7             | 7.1             | 7.7             | 8.3             | 9.3             |
|        | 6                | 98  | 6.6  | 0.71 | 5.6            | 5.8             | 6.2             | 6.5             | 7.0             | 7.6             | 8.6             |
| F      | 3                | 96  | 10.1 | 1.42 | 8.2            | 8.5             | 9.1             | 9.9             | 10.9            | 12.0            | 13.5            |
|        | 4                | 113 | 8.7  | 1.33 | 6.9            | 7.3             | 7.8             | 8.4             | 9.2             | 10.6            | 12.7            |
|        | 5                | 132 | 7.7  | 0.86 | 6.5            | 6.8             | 7.1             | 7.6             | 8.2             | 8.8             | 9.5             |
|        | 6                | 90  | 6.9  | 0.63 | 5.8            | 6.0             | 6.4             | 6.8             | 7.3             | 7.8             | 8.2             |

Table 4-1-2-1-35 Successive jumps with both feet (sec)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 130 | 13.4 | 5.26 | 6.0            | 7.5             | 9.6             | 12.3            | 16.1            | 20.0            | 26.3            |
|        | 4                | 172 | 10.0 | 3.56 | 5.6            | 6.2             | 7.4             | 9.2             | 12.0            | 14.9            | 19.2            |
|        | 5                | 159 | 7.6  | 2.00 | 5.2            | 5.5             | 6.2             | 7.0             | 8.5             | 10.1            | 12.5            |
|        | 6                | 97  | 6.7  | 1.70 | 4.5            | 5.0             | 5.4             | 6.2             | 7.5             | 8.9             | 11.1            |
| F      | 3                | 84  | 12.8 | 4.36 | 6.2            | 8.0             | 9.9             | 11.8            | 15.8            | 17.9            | 24.3            |
|        | 4                | 107 | 10.4 | 3.65 | 5.9            | 6.8             | 8.0             | 9.8             | 11.8            | 14.9            | 19.7            |
|        | 5                | 130 | 7.9  | 1.72 | 5.4            | 5.9             | 6.6             | 7.7             | 8.7             | 9.8             | 12.3            |
|        | 6                | 90  | 6.8  | 1.43 | 5.0            | 5.3             | 5.9             | 6.4             | 7.4             | 8.5             | 10.1            |

Table 4-1-2-1-36 Standing long jump (cm)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 55.6 | 11.76 | 30.8           | 45.0            | 50.0            | 55.0            | 60.0            | 72.0            | 82.4            |
|        | 4                | 191 | 69.0 | 15.03 | 43.8           | 52.2            | 58.0            | 66.0            | 80.0            | 89.8            | 100.7           |
|        | 5                | 165 | 92.6 | 16.45 | 57.0           | 70.6            | 82.0            | 93.0            | 105.0           | 113.4           | 120.0           |
|        | 6                | 98  | 99.7 | 17.81 | 61.9           | 74.9            | 88.8            | 99.5            | 113.5           | 122.1           | 130.1           |
| F      | 3                | 96  | 51.5 | 13.43 | 25.5           | 33.0            | 43.3            | 52.0            | 58.0            | 69.9            | 81.5            |
|        | 4                | 113 | 64.5 | 15.03 | 34.8           | 48.4            | 54.0            | 61.0            | 75.5            | 83.6            | 99.8            |
|        | 5                | 132 | 86.0 | 13.87 | 56.0           | 62.3            | 78.0            | 88.0            | 96.8            | 102.7           | 105.0           |
|        | 6                | 90  | 92.4 | 15.88 | 59.2           | 72.1            | 80.8            | 93.5            | 102.3           | 112.9           | 123.3           |

Table 4-1-2-1-37 Tennis ball distance throw (m)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 159 | 2.9  | 0.97 | 1.5            | 1.5             | 2.0             | 2.5             | 3.5             | 4.0             | 5.0             |
|        | 4                | 191 | 4.0  | 1.38 | 2.0            | 2.5             | 3.0             | 3.5             | 5.0             | 6.0             | 7.0             |
|        | 5                | 165 | 5.7  | 1.78 | 3.0            | 3.5             | 4.5             | 5.5             | 7.0             | 8.5             | 9.5             |
|        | 6                | 98  | 6.0  | 1.72 | 3.0            | 3.8             | 4.6             | 6.0             | 7.1             | 8.5             | 10.0            |
| F      | 3                | 96  | 2.4  | 0.72 | 1.0            | 1.5             | 2.0             | 2.5             | 3.0             | 3.0             | 4.0             |
|        | 4                | 113 | 3.4  | 1.14 | 1.5            | 2.0             | 2.5             | 3.0             | 4.0             | 5.0             | 5.8             |
|        | 5                | 132 | 4.4  | 1.19 | 2.5            | 3.0             | 3.5             | 4.0             | 5.5             | 6.0             | 7.0             |
|        | 6                | 90  | 5.3  | 1.23 | 3.0            | 4.0             | 4.5             | 5.0             | 6.0             | 7.0             | 7.6             |

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Table 4-1-2-1-38 Sit and reach (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 158 | 8.0  | 4.02 | 0.1            | 2.5             | 5.3             | 8.4             | 10.7            | 12.8            | 15.6            |
|        | 4                | 191 | 7.5  | 4.54 | -2.3           | 1.5             | 4.9             | 7.3             | 10.4            | 13.5            | 15.3            |
|        | 5                | 165 | 7.1  | 4.69 | -3.1           | 1.9             | 4.1             | 6.8             | 10.1            | 13.1            | 16.0            |
|        | 6                | 98  | 4.5  | 4.72 | -5.5           | -1.0            | 1.0             | 4.3             | 7.7             | 11.0            | 13.7            |
| F      | 3                | 96  | 9.4  | 3.76 | 2.0            | 4.6             | 7.0             | 9.5             | 12.0            | 14.4            | 16.1            |
|        | 4                | 113 | 8.5  | 3.88 | 0.5            | 3.5             | 5.7             | 8.6             | 11.7            | 13.3            | 15.6            |
|        | 5                | 132 | 9.5  | 4.52 | -2.1           | 4.4             | 7.0             | 9.9             | 12.5            | 14.6            | 16.9            |
|        | 6                | 90  | 6.4  | 5.09 | -4.4           | -0.2            | 2.9             | 6.6             | 9.7             | 13.0            | 16.7            |

Table 4-1-2-1-39 Walking on the balance beam (sec)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 3                | 155 | 18.7 | 11.68 | 5.1            | 8.2             | 10.7            | 15.2            | 22.7            | 33.7            | 53.1            |
|        | 4                | 190 | 11.1 | 7.66  | 3.6            | 4.8             | 6.4             | 9.0             | 12.3            | 22.7            | 33.5            |
|        | 5                | 165 | 6.8  | 5.60  | 2.9            | 3.3             | 4.1             | 5.6             | 7.2             | 9.8             | 20.8            |
|        | 6                | 98  | 5.7  | 2.35  | 2.9            | 3.5             | 4.3             | 4.9             | 6.8             | 9.4             | 12.7            |
| F      | 3                | 95  | 17.3 | 12.71 | 0.0            | 5.8             | 8.9             | 13.2            | 24.7            | 40.4            | 50.3            |
|        | 4                | 113 | 12.3 | 9.05  | 3.1            | 4.9             | 6.8             | 9.7             | 13.9            | 26.1            | 40.5            |
|        | 5                | 132 | 6.4  | 3.07  | 3.0            | 3.5             | 4.2             | 5.6             | 7.6             | 10.4            | 14.2            |
|        | 6                | 90  | 5.9  | 2.39  | 2.9            | 3.3             | 4.2             | 5.4             | 7.2             | 8.6             | 12.2            |

## 4.1.6 Health

Table 4-1-2-1-40 Primary teeth decay (%)

| Gender | Age group (year) | Subjects (n) | Decayed primary teeth (d) | Decayed primary teeth filled (f) | Decayed primary teeth loss (m) | Primary teeth decayed, filled and loss (dmf) |
|--------|------------------|--------------|---------------------------|----------------------------------|--------------------------------|----------------------------------------------|
| M      | 3                | 159          | 19.5                      | 0.0                              | 0.0                            | 19.5                                         |
|        | 4                | 191          | 27.2                      | 4.2                              | 0.5                            | 28.8                                         |
|        | 5                | 165          | 40.0                      | 1.8                              | 3.0                            | 40.6                                         |
|        | 6                | 98           | 45.9                      | 5.1                              | 9.2                            | 51.0                                         |
| F      | 3                | 96           | 17.7                      | 0.0                              | 0.0                            | 17.7                                         |
|        | 4                | 113          | 32.7                      | 0.9                              | 0.9                            | 32.7                                         |
|        | 5                | 132          | 40.9                      | 3.8                              | 3.0                            | 43.2                                         |
|        | 6                | 90           | 43.3                      | 5.6                              | 3.3                            | 45.6                                         |

Table 4-1-2-1-41 Permanent teeth decay (%)

| Gender | Age group (year) | Subjects (n) | Decayed permanent teeth (D) | Decayed permanent teeth filled (F) | Decayed permanent teeth loss (M) | Permanent teeth, decayed, filled and loss (DMF) |
|--------|------------------|--------------|-----------------------------|------------------------------------|----------------------------------|-------------------------------------------------|
| M      | 3                | 159          | 0.0                         | 0.0                                | 0.0                              | 0.0                                             |
|        | 4                | 191          | 0.0                         | 0.0                                | 0.0                              | 0.0                                             |
|        | 5                | 165          | 0.0                         | 0.0                                | 0.0                              | 0.0                                             |
|        | 6                | 98           | 1.0                         | 0.0                                | 1.0                              | 2.0                                             |
| F      | 3                | 96           | 0.0                         | 0.0                                | 0.0                              | 0.0                                             |
|        | 4                | 113          | 0.0                         | 0.0                                | 0.0                              | 0.0                                             |
|        | 5                | 132          | 0.0                         | 0.0                                | 0.0                              | 0.0                                             |
|        | 6                | 90           | 1.1                         | 0.0                                | 0.0                              | 1.1                                             |

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### 4.2 Children and Adolescents (Students)

#### 4.2.1 Basic Information of the Subjects

Table 4-2-1-2-1 Distribution of sampling sites (schools/universities)

| Subjects                         | Survey area        | Sampling sites                             | M        |             | F          |             | Total      |             |
|----------------------------------|--------------------|--------------------------------------------|----------|-------------|------------|-------------|------------|-------------|
|                                  |                    |                                            | Subjects | Percentage  | Subjects   | Percentage  | Subjects   | Percentage  |
|                                  |                    |                                            | (n)      | (%)         | (n)        | (%)         | (n)        | (%)         |
| Primary & middle school students | north              | Keang Peng School                          | 395      | 16.3        | 354        | 16.4        | 749        | 16.4        |
|                                  |                    | Hou Kong Middle School                     | 473      | 19.5        | 364        | 16.9        | 837        | 18.3        |
|                                  | central            | Pui Ching Middle School                    | 443      | 18.3        | 386        | 17.9        | 829        | 18.1        |
|                                  |                    | Chan Sui Ki Perpetual Help College         | 315      | 13.0        | 410        | 19.0        | 725        | 15.8        |
|                                  | south              | Pooi To Middle School                      | 412      | 17.0        | 313        | 14.5        | 725        | 15.8        |
|                                  |                    | Estrela do Mar School                      | 383      | 15.8        | 333        | 15.4        | 716        | 15.6        |
|                                  | <b>Total</b>       |                                            |          | <b>2421</b> | <b>100</b> | <b>2160</b> | <b>100</b> | <b>4581</b> |
| University students              | Na. Sra. do Carmo  | University of Macau                        | 176      | 49.4        | 161        | 40.0        | 337        | 44.5        |
|                                  |                    | Macao University of Science and Technology | 60       | 16.9        | 30         | 7.5         | 90         | 11.9        |
|                                  | Sé Catedral        | Macao Polytechnic Institute                | 73       | 20.5        | 68         | 16.9        | 141        | 18.6        |
|                                  | S. António         | Kiang Wu Nursing College of Macau          | 15       | 4.2         | 128        | 31.8        | 143        | 18.9        |
|                                  | Na. Sra. de Fátima | Institute for Tourism Studies              | 32       | 9.0         | 15         | 3.7         | 47         | 6.2         |
|                                  |                    | <b>Total</b>                               |          |             | <b>356</b> | <b>100</b>  | <b>402</b> | <b>100</b>  |

Table 4-2-1-2-2 Distribution of subjects in primary and secondary schools (%)

| Gender | Communities        | Keang Peng School | Hou Kong Middle School | Pui Ching Middle School | Chan Sui Ki Perpetual Help College | Pooi To Middle School | Estrela do Mar School | Total       |
|--------|--------------------|-------------------|------------------------|-------------------------|------------------------------------|-----------------------|-----------------------|-------------|
| M      | Na. Sra. de Fátima | 78.2              | 45.9                   | 14.9                    | 13.0                               | 22.8                  | 16.2                  | <b>32.6</b> |
|        | S. António         | 6.6               | 27.3                   | 24.2                    | 27.6                               | 19.4                  | 4.7                   | <b>18.5</b> |
|        | S. Lázaro          | 8.6               | 11.4                   | 29.6                    | 26.3                               | 9.7                   | 2.3                   | <b>14.5</b> |
|        | S. Francisco       | 0.3               | 0.6                    | 0.7                     | 0.0                                | 0.5                   | 0.3                   | <b>0.4</b>  |
|        | Na. Sra. do Carmo  | 1.3               | 4.7                    | 13.8                    | 10.2                               | 9.2                   | 2.3                   | <b>6.9</b>  |
|        | S.Lourenço         | 2.8               | 5.1                    | 5.4                     | 7.0                                | 18.2                  | 68.9                  | <b>17.3</b> |
|        | Sé Catedral        | 2.3               | 4.9                    | 11.5                    | 15.9                               | 20.1                  | 5.2                   | <b>9.7</b>  |
| F      | Na. Sra. de Fátima | 80.5              | 43.1                   | 14.5                    | 12.7                               | 24.3                  | 15.3                  | <b>31.3</b> |
|        | S. António         | 5.4               | 35.7                   | 25.1                    | 22.9                               | 16.9                  | 4.8                   | <b>19.0</b> |
|        | S. Lázaro          | 8.5               | 8.5                    | 27.7                    | 26.3                               | 9.6                   | 2.7                   | <b>14.6</b> |
|        | S. Francisco       | 0.8               | 0.3                    | 0.0                     | 0.6                                | 0.3                   | 0.3                   | <b>0.3</b>  |
|        | Na. Sra. do Carmo  | 0.6               | 4.4                    | 14.0                    | 14.9                               | 6.4                   | 1.2                   | <b>7.3</b>  |
|        | S.Lourenço         | 3.1               | 4.9                    | 9.3                     | 8.5                                | 24.9                  | 70.9                  | <b>19.2</b> |
|        | Sé Catedral        | 2.0               | 2.5                    | 9.1                     | 14.6                               | 17.3                  | 4.8                   | <b>8.4</b>  |

Table 4-2-1-2-3 Distribution of subjects at universities (%)

| Gender | Communities        | University of Macau | Macao University of Science and Technology | Macao Polytechnic Institute | Kiang Wu Nursing College of Macau | Institute for Tourism Studies | Total       |
|--------|--------------------|---------------------|--------------------------------------------|-----------------------------|-----------------------------------|-------------------------------|-------------|
| M      | Na. Sra. de Fátima | 36.4                | 51.7                                       | 46.6                        | 40.0                              | 37.5                          | <b>41.3</b> |
|        | S. António         | 21.6                | 13.3                                       | 17.8                        | 40.0                              | 21.9                          | <b>20.2</b> |
|        | S. Lázaro          | 11.9                | 6.7                                        | 5.5                         | 6.7                               | 15.6                          | <b>9.8</b>  |
|        | S. Francisco       | 0.0                 | 0.0                                        | 1.4                         | 0.0                               | 0.0                           | <b>0.3</b>  |
|        | Na. Sra. do Carmo  | 2.8                 | 11.7                                       | 2.7                         | 0.0                               | 3.1                           | <b>4.2</b>  |
|        | S.Lourenço         | 17.0                | 8.3                                        | 12.3                        | 0.0                               | 6.3                           | <b>12.9</b> |
|        | Sé Catedral        | 10.2                | 8.3                                        | 13.7                        | 13.3                              | 15.6                          | <b>11.2</b> |
| F      | Na. Sra. de Fátima | 46.6                | 56.7                                       | 47.1                        | 52.3                              | 71.4                          | <b>50.1</b> |
|        | S. António         | 24.2                | 6.7                                        | 22.1                        | 19.5                              | 14.3                          | <b>20.7</b> |
|        | S. Lázaro          | 10.6                | 13.3                                       | 16.2                        | 6.3                               | 7.1                           | <b>10.2</b> |
|        | S. Francisco       | 0.0                 | 0.0                                        | 0.0                         | 0.0                               | 0.0                           | <b>0.0</b>  |
|        | Na. Sra. do Carmo  | 3.1                 | 10.0                                       | 4.4                         | 0.0                               | 0.0                           | <b>2.7</b>  |
|        | S.Lourenço         | 8.1                 | 6.7                                        | 4.4                         | 14.8                              | 7.1                           | <b>9.5</b>  |
|        | Sé Catedral        | 7.5                 | 6.7                                        | 5.9                         | 7.0                               | 0.0                           | <b>6.7</b>  |

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Table 4-2-1-2-4 Birth place (%)

| Gender | Birth place | Aged 6~12<br>(primary school) | Aged 13~18<br>(secondary school) | Aged 19~22 (higher education institutes) | Total       |
|--------|-------------|-------------------------------|----------------------------------|------------------------------------------|-------------|
| M      | Mainland    | 5.5                           | 14.5                             | 14.6                                     | <b>10.2</b> |
|        | Macao       | 91.7                          | 81.7                             | 81.6                                     | <b>86.5</b> |
|        | Hong Kong   | 1.4                           | 3.1                              | 3.0                                      | <b>2.3</b>  |
|        | Portugal    | 0.1                           | 0.1                              | 0.0                                      | <b>0.1</b>  |
|        | Others      | 1.3                           | 0.6                              | 0.7                                      | <b>0.9</b>  |
| F      | Mainland    | 6.0                           | 10.9                             | 17.2                                     | <b>9.8</b>  |
|        | Macao       | 91.4                          | 85.5                             | 80.1                                     | <b>87.2</b> |
|        | Hong Kong   | 1.2                           | 3.0                              | 1.7                                      | <b>2.0</b>  |
|        | Others      | 1.3                           | 0.5                              | 1.0                                      | <b>0.9</b>  |

Table 4-2-1-2-5 School attendance (%)

| Gender | Schooling | Aged 6~12<br>(primary school) | Aged 13~18<br>(secondary school) | Aged 19~22 (higher education institutes) | Total       |
|--------|-----------|-------------------------------|----------------------------------|------------------------------------------|-------------|
| M      | Half day  | 2.0                           | 1.5                              | 10.4                                     | <b>3.0</b>  |
|        | Full day  | 98.0                          | 98.5                             | 87.1                                     | <b>96.6</b> |
|        | boarding  | 0.0                           | 0.0                              | 2.5                                      | <b>0.4</b>  |
| F      | Half day  | 1.6                           | 0.8                              | 6.0                                      | <b>2.0</b>  |
|        | Full day  | 98.4                          | 99.2                             | 94.0                                     | <b>98.0</b> |
|        | boarding  | 0.0                           | 0.0                              | 0.2                                      | <b>0.0</b>  |

## 4.2.2 Lifestyle

Table 4-2-1-2-6 Total time commute between school and home everyday (male) (%)

| Age group<br>(year) | Subjects<br>(n) | Within 30 mins | 30 mins~1hr | 1~2 hrs | 2 hrs or more |
|---------------------|-----------------|----------------|-------------|---------|---------------|
| 6                   | 173             | 69.4           | 23.7        | 6.4     | 0.6           |
| 7                   | 222             | 67.6           | 28.4        | 4.0     | 0.0           |
| 8                   | 196             | 71.4           | 21.9        | 5.6     | 1.0           |
| 9                   | 193             | 71.0           | 22.8        | 5.7     | 0.5           |
| 10                  | 185             | 68.6           | 25.4        | 5.4     | 0.5           |
| 11                  | 176             | 73.9           | 18.2        | 6.3     | 1.7           |
| 12                  | 188             | 73.4           | 21.3        | 4.3     | 1.1           |
| 13                  | 178             | 70.2           | 20.2        | 9.0     | 0.6           |
| 14                  | 182             | 57.1           | 31.3        | 9.9     | 1.6           |
| 15                  | 179             | 60.9           | 25.1        | 11.2    | 2.8           |
| 16                  | 174             | 65.5           | 24.7        | 8.6     | 1.1           |
| 17                  | 166             | 46.4           | 35.5        | 15.1    | 3.0           |
| 18                  | 162             | 54.9           | 37.7        | 5.6     | 1.9           |
| 19                  | 120             | 42.5           | 35.0        | 20.8    | 1.7           |
| 20                  | 102             | 55.9           | 31.4        | 11.8    | 1.0           |
| 21                  | 99              | 50.5           | 42.4        | 6.1     | 1.0           |
| 22                  | 82              | 22.0           | 51.2        | 23.2    | 3.7           |

Table 4-2-1-2-7 Total time commute between school and home everyday (female) (%)

| Age group<br>(year) | Subjects<br>(n) | Within 30 mins | 30 mins~1hr | 1~2 hrs | 2 hrs or more |
|---------------------|-----------------|----------------|-------------|---------|---------------|
| 6                   | 155             | 72.3           | 23.2        | 4.5     | 0.0           |
| 7                   | 165             | 68.5           | 26.7        | 4.8     | 0.0           |
| 8                   | 150             | 70.0           | 25.3        | 4.0     | 0.7           |
| 9                   | 165             | 70.3           | 20.6        | 4.8     | 4.2           |
| 10                  | 163             | 62.6           | 29.4        | 7.4     | 0.6           |
| 11                  | 151             | 73.5           | 19.9        | 5.3     | 1.3           |
| 12                  | 172             | 66.9           | 26.2        | 4.7     | 2.3           |
| 13                  | 164             | 62.2           | 24.4        | 11.6    | 1.8           |
| 14                  | 151             | 60.3           | 29.1        | 9.3     | 1.3           |
| 15                  | 198             | 65.7           | 22.7        | 11.1    | 0.5           |
| 16                  | 184             | 55.4           | 33.2        | 9.8     | 1.6           |
| 17                  | 167             | 54.5           | 29.3        | 13.8    | 2.4           |
| 18                  | 159             | 52.2           | 38.4        | 9.4     | 0.0           |
| 19                  | 127             | 42.5           | 34.6        | 21.3    | 1.6           |
| 20                  | 98              | 35.7           | 35.7        | 23.5    | 5.1           |
| 21                  | 103             | 35.0           | 44.7        | 19.4    | 1.0           |
| 22                  | 90              | 37.8           | 52.2        | 10.0    | 0.0           |

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Table 4-2-1-2-8 Transportation means to and back from school (male) (%)

| Age group<br>(year) | Subjects<br>(n) | On foot | By Motorcycle | By bus | By car |
|---------------------|-----------------|---------|---------------|--------|--------|
| 6                   | 173             | 53.0    | 9.0           | 18.0   | 20.0   |
| 7                   | 222             | 55.0    | 14.0          | 17.0   | 15.0   |
| 8                   | 196             | 55.0    | 7.0           | 22.0   | 16.0   |
| 9                   | 193             | 60.0    | 8.0           | 16.0   | 17.0   |
| 10                  | 185             | 62.0    | 10.0          | 13.0   | 15.0   |
| 11                  | 176             | 64.0    | 7.0           | 17.0   | 12.0   |
| 12                  | 188             | 63.0    | 5.0           | 19.7   | 12.2   |
| 13                  | 178             | 65.2    | 2.2           | 22.5   | 10.1   |
| 14                  | 182             | 63.2    | 0.5           | 31.9   | 4.4    |
| 15                  | 179             | 69.3    | 0.6           | 26.8   | 3.4    |
| 16                  | 174             | 69.0    | 1.1           | 27.0   | 2.9    |
| 17                  | 166             | 57.8    | 3.6           | 38.0   | 0.6    |
| 18                  | 162             | 50.6    | 8.6           | 36.4   | 4.3    |
| 19                  | 120             | 28.3    | 25            | 44.2   | 2.5    |
| 20                  | 102             | 17.6    | 39.2          | 37.3   | 5.9    |
| 21                  | 99              | 9.1     | 53.5          | 26.3   | 11.1   |
| 22                  | 82              | 4.9     | 51.2          | 36.6   | 7.3    |

Table 4-2-1-2-9 Transportation means to and back from school (female) (%)

| Age group<br>(year) | Subjects<br>(n) | On foot | By Motorcycle | By bus | By car |
|---------------------|-----------------|---------|---------------|--------|--------|
| 6                   | 155             | 55.5    | 7.7           | 16.1   | 20.6   |
| 7                   | 165             | 58.2    | 15.2          | 15.2   | 11.5   |
| 8                   | 150             | 63.3    | 6.0           | 14.0   | 16.7   |
| 9                   | 165             | 56.4    | 7.3           | 15.8   | 20.6   |
| 10                  | 163             | 55.2    | 6.1           | 21.5   | 17.2   |
| 11                  | 151             | 62.3    | 9.9           | 13.2   | 14.6   |
| 12                  | 172             | 61.0    | 1.2           | 27.3   | 10.5   |
| 13                  | 164             | 62.8    | 3.0           | 25.6   | 8.5    |
| 14                  | 151             | 64.2    | 0.7           | 27.8   | 7.3    |
| 15                  | 198             | 68.2    | 2.0           | 23.7   | 6.1    |
| 16                  | 184             | 59.8    | 2.7           | 33.7   | 3.8    |
| 17                  | 167             | 59.3    | 5.4           | 33.5   | 1.8    |
| 18                  | 159             | 58.5    | 6.3           | 34.0   | 1.3    |
| 19                  | 127             | 35.4    | 11.0          | 52.8   | 0.8    |
| 20                  | 98              | 19.4    | 15.3          | 61.2   | 4.1    |
| 21                  | 103             | 16.5    | 19.4          | 60.2   | 3.9    |
| 22                  | 90              | 21.1    | 34.4          | 40.0   | 4.4    |

Table 4-2-1-2-10 Average time for daily outdoor playing (male) (%)

| Age group (year) | Subjects (n) | Within 30 mins | 30 mins~1hr | 1~2 hrs | 2 hrs or more |
|------------------|--------------|----------------|-------------|---------|---------------|
| 6                | 173          | 56.1           | 28.9        | 11.6    | 3.5           |
| 7                | 222          | 49.5           | 36.0        | 13.5    | 0.9           |
| 8                | 196          | 57.1           | 33.2        | 7.1     | 2.6           |
| 9                | 193          | 51.3           | 31.1        | 10.9    | 6.7           |
| 10               | 185          | 48.1           | 29.2        | 15.7    | 7.0           |
| 11               | 176          | 48.9           | 23.9        | 16.5    | 10.8          |
| 12               | 188          | 50.0           | 25.5        | 11.7    | 12.8          |
| 13               | 178          | 37.6           | 28.7        | 20.2    | 13.5          |
| 14               | 182          | 44.5           | 26.9        | 13.2    | 15.4          |
| 15               | 179          | 37.4           | 24.6        | 16.8    | 21.2          |
| 16               | 174          | 36.8           | 22.4        | 24.1    | 16.7          |
| 17               | 166          | 39.2           | 27.7        | 17.5    | 15.7          |
| 18               | 162          | 31.5           | 28.4        | 21.0    | 19.1          |
| 19               | 120          | 38.3           | 30.8        | 19.2    | 11.7          |
| 20               | 102          | 50.0           | 25.5        | 15.7    | 8.8           |
| 21               | 99           | 40.4           | 24.2        | 13.1    | 22.2          |
| 22               | 82           | 37.8           | 39.0        | 14.6    | 8.5           |

Table 4-2-1-2-11 Average time for daily outdoor playing (female) (%)

| Age group (year) | Subjects (n) | Within 30 mins | 30 mins~1hr | 1~2 hrs | 2 hrs or more |
|------------------|--------------|----------------|-------------|---------|---------------|
| 6                | 155          | 47.7           | 36.1        | 14.2    | 1.9           |
| 7                | 165          | 49.1           | 37.0        | 8.5     | 5.5           |
| 8                | 150          | 46.7           | 34.7        | 13.3    | 5.3           |
| 9                | 165          | 58.8           | 26.1        | 9.7     | 5.5           |
| 10               | 163          | 47.2           | 33.7        | 12.9    | 6.1           |
| 11               | 151          | 49.7           | 35.1        | 9.9     | 5.3           |
| 12               | 172          | 51.2           | 27.3        | 12.8    | 8.7           |
| 13               | 164          | 39.0           | 29.3        | 17.1    | 14.6          |
| 14               | 151          | 44.4           | 25.8        | 15.2    | 14.6          |
| 15               | 198          | 45.5           | 29.3        | 12.6    | 12.6          |
| 16               | 184          | 52.2           | 29.3        | 12.5    | 6.0           |
| 17               | 167          | 60.5           | 19.2        | 13.2    | 7.2           |
| 18               | 159          | 50.9           | 32.7        | 8.2     | 8.2           |
| 19               | 127          | 59.8           | 18.1        | 12.6    | 9.4           |
| 20               | 98           | 46.9           | 28.6        | 15.3    | 9.2           |
| 21               | 103          | 64.1           | 18.4        | 10.7    | 6.8           |
| 22               | 90           | 54.4           | 32.2        | 10.0    | 3.3           |

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Table 4-2-1-2-12 Time spent on doing homework everyday (male) (%)

| Age group<br>(year) | Subjects<br>(n) | Within 30<br>mins | 30 mins~1 hr | 1~2 hrs | 2~3 hrs | 3 hrs or<br>more |
|---------------------|-----------------|-------------------|--------------|---------|---------|------------------|
| 6                   | 173             | 17.3              | 36.4         | 34.7    | 8.1     | 3.5              |
| 7                   | 222             | 18.9              | 40.5         | 27.5    | 9.0     | 4.1              |
| 8                   | 196             | 13.3              | 34.7         | 29.1    | 13.3    | 9.7              |
| 9                   | 193             | 15.5              | 37.8         | 30.6    | 10.9    | 5.2              |
| 10                  | 185             | 22.7              | 34.6         | 24.9    | 10.3    | 7.6              |
| 11                  | 176             | 17.6              | 35.8         | 27.8    | 13.1    | 5.7              |
| 12                  | 188             | 27.7              | 35.6         | 26.1    | 6.9     | 3.7              |
| 13                  | 178             | 24.7              | 43.8         | 21.3    | 6.2     | 3.9              |
| 14                  | 182             | 36.8              | 42.9         | 17.6    | 1.6     | 1.1              |
| 15                  | 179             | 31.8              | 35.8         | 22.9    | 7.3     | 2.2              |
| 16                  | 174             | 33.9              | 40.2         | 19.5    | 3.4     | 2.9              |
| 17                  | 166             | 36.7              | 31.3         | 21.1    | 7.8     | 3.0              |
| 18                  | 162             | 32.7              | 37.0         | 25.9    | 2.5     | 1.9              |
| 19                  | 120             | 28.3              | 36.7         | 21.7    | 7.5     | 5.8              |
| 20                  | 102             | 36.3              | 33.3         | 18.6    | 6.9     | 4.9              |
| 21                  | 99              | 41.4              | 26.3         | 14.1    | 9.1     | 9.1              |
| 22                  | 82              | 17.1              | 34.1         | 31.7    | 17.1    | 0.0              |

Table 4-2-1-2-13 Time spent on doing homework everyday (female) (%)

| Age group<br>(year) | Subjects<br>(n) | Within 30<br>mins | 30 mins~1 hr | 1~2 hrs | 2~3 hrs | 3 hrs or<br>more |
|---------------------|-----------------|-------------------|--------------|---------|---------|------------------|
| 6                   | 155             | 14.8              | 44.5         | 31.0    | 7.1     | 2.6              |
| 7                   | 165             | 18.2              | 37.6         | 26.7    | 11.5    | 6.1              |
| 8                   | 150             | 14.0              | 37.3         | 27.3    | 16.7    | 4.7              |
| 9                   | 165             | 14.5              | 35.8         | 25.5    | 14.5    | 9.7              |
| 10                  | 163             | 17.8              | 41.1         | 28.8    | 7.4     | 4.9              |
| 11                  | 151             | 15.2              | 33.1         | 29.1    | 14.6    | 7.9              |
| 12                  | 172             | 18.6              | 45.3         | 26.2    | 4.7     | 5.2              |
| 13                  | 164             | 26.8              | 42.7         | 23.8    | 4.3     | 2.4              |
| 14                  | 151             | 27.2              | 39.1         | 23.8    | 6.0     | 4.0              |
| 15                  | 198             | 26.8              | 35.4         | 25.8    | 6.1     | 6.1              |
| 16                  | 184             | 22.3              | 34.2         | 27.7    | 13.0    | 2.7              |
| 17                  | 167             | 17.4              | 32.3         | 31.1    | 12.6    | 6.6              |
| 18                  | 159             | 18.9              | 33.3         | 25.8    | 10.7    | 11.3             |
| 19                  | 127             | 22.0              | 35.4         | 30.7    | 7.9     | 3.9              |
| 20                  | 98              | 19.4              | 26.5         | 24.5    | 21.4    | 8.2              |
| 21                  | 103             | 24.3              | 30.1         | 25.2    | 9.7     | 10.7             |
| 22                  | 90              | 8.9               | 24.4         | 40.0    | 17.8    | 8.9              |

Table 4-2-1-2-14 Average time for watching TV, video and playing video games everyday (male) (%)

| Age group (year) | Subjects (n) | Within 30 mins | 30 mins~1 hr | 1~2 hrs | 2~3 hrs | 3 hrs or more |
|------------------|--------------|----------------|--------------|---------|---------|---------------|
| 6                | 173          | 12.7           | 41.0         | 29.5    | 13.3    | 3.5           |
| 7                | 222          | 11.7           | 37.8         | 32.0    | 14.9    | 3.6           |
| 8                | 196          | 13.8           | 43.4         | 23.5    | 15.8    | 3.6           |
| 9                | 193          | 13.0           | 39.9         | 22.3    | 12.4    | 12.4          |
| 10               | 185          | 9.2            | 46.5         | 20.5    | 12.4    | 11.4          |
| 11               | 176          | 7.4            | 27.8         | 23.3    | 20.5    | 21.0          |
| 12               | 188          | 5.9            | 29.3         | 22.9    | 19.7    | 22.3          |
| 13               | 178          | 7.3            | 19.7         | 29.2    | 18.0    | 25.8          |
| 14               | 182          | 1.1            | 20.3         | 25.3    | 30.8    | 22.5          |
| 15               | 179          | 3.4            | 22.3         | 28.5    | 21.8    | 24.0          |
| 16               | 174          | 4.6            | 23.6         | 27.0    | 25.3    | 19.5          |
| 17               | 166          | 6.6            | 20.5         | 30.1    | 23.5    | 19.3          |
| 18               | 162          | 4.3            | 22.8         | 30.2    | 21.6    | 21.0          |
| 19               | 120          | 3.3            | 16.7         | 39.2    | 25.8    | 15.0          |
| 20               | 102          | 6.9            | 20.6         | 28.4    | 16.7    | 27.5          |
| 21               | 99           | 7.1            | 25.3         | 18.2    | 27.3    | 22.2          |
| 22               | 82           | 4.9            | 31.7         | 37.8    | 25.6    | 0.0           |

Table 4-2-1-2-15 Average time for watching TV, video and playing video games everyday (female) (%)

| Age group (year) | Subjects (n) | Within 30 mins | 30 mins~1 hr | 1~2 hrs | 2~3 hrs | 3 hrs or more |
|------------------|--------------|----------------|--------------|---------|---------|---------------|
| 6                | 155          | 13.5           | 44.5         | 28.4    | 8.4     | 5.2           |
| 7                | 165          | 14.5           | 40.0         | 29.7    | 10.3    | 5.5           |
| 8                | 150          | 14.0           | 34.0         | 32.0    | 12.7    | 7.3           |
| 9                | 165          | 13.9           | 39.4         | 27.9    | 15.2    | 3.6           |
| 10               | 163          | 8.6            | 33.7         | 20.2    | 23.9    | 13.5          |
| 11               | 151          | 10.6           | 33.8         | 22.5    | 23.8    | 9.3           |
| 12               | 172          | 4.7            | 28.5         | 26.2    | 21.5    | 19.2          |
| 13               | 164          | 4.9            | 14.6         | 23.8    | 33.5    | 23.2          |
| 14               | 151          | 6.6            | 18.5         | 27.8    | 26.5    | 20.5          |
| 15               | 198          | 6.1            | 16.7         | 28.3    | 29.8    | 19.2          |
| 16               | 184          | 3.8            | 31.0         | 21.7    | 24.5    | 19.0          |
| 17               | 167          | 9.0            | 17.4         | 32.9    | 21.6    | 19.2          |
| 18               | 159          | 8.2            | 22.0         | 28.3    | 24.5    | 17.0          |
| 19               | 127          | 5.5            | 21.3         | 29.1    | 26.8    | 17.3          |
| 20               | 98           | 6.1            | 20.4         | 33.7    | 18.4    | 21.4          |
| 21               | 103          | 4.9            | 17.5         | 27.2    | 33.0    | 17.5          |
| 22               | 90           | 3.3            | 23.3         | 28.9    | 24.4    | 20.0          |

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Table 4-2-1-2-16 Average daily sleeping hours (male) (%)

| Age group<br>(year) | Subjects (n) | Less than 8 hrs | 8~10 hrs | 10 hrs or more |
|---------------------|--------------|-----------------|----------|----------------|
| 6                   | 173          | 9.2             | 83.2     | 7.5            |
| 7                   | 222          | 10.8            | 82.0     | 7.2            |
| 8                   | 196          | 15.3            | 78.1     | 6.6            |
| 9                   | 193          | 14.0            | 81.9     | 4.1            |
| 10                  | 185          | 17.3            | 72.4     | 10.3           |
| 11                  | 176          | 18.8            | 76.7     | 4.5            |
| 12                  | 188          | 27.7            | 67.6     | 4.8            |
| 13                  | 178          | 33.7            | 61.8     | 4.5            |
| 14                  | 182          | 39.0            | 59.3     | 1.6            |
| 15                  | 179          | 50.3            | 45.3     | 4.5            |
| 16                  | 174          | 62.6            | 35.6     | 1.7            |
| 17                  | 166          | 58.4            | 40.4     | 1.2            |
| 18                  | 162          | 53.7            | 43.8     | 2.5            |
| 19                  | 120          | 65.8            | 33.3     | 0.8            |
| 20                  | 102          | 62.7            | 37.3     | 0.0            |
| 21                  | 99           | 76.8            | 21.2     | 2.0            |
| 22                  | 82           | 63.4            | 36.6     | 0.0            |

Table 4-2-1-2-17 Average daily sleeping hours (female) (%)

| Age group<br>(year) | Subjects (n) | Less than 8 hrs | 8~10 hrs | 10 hrs or more |
|---------------------|--------------|-----------------|----------|----------------|
| 6                   | 155          | 2.6             | 91.0     | 6.5            |
| 7                   | 165          | 8.5             | 86.7     | 4.8            |
| 8                   | 150          | 12.7            | 82.7     | 4.7            |
| 9                   | 165          | 15.2            | 76.4     | 8.5            |
| 10                  | 163          | 20.9            | 71.8     | 7.4            |
| 11                  | 151          | 28.5            | 64.9     | 6.6            |
| 12                  | 172          | 30.8            | 58.7     | 10.5           |
| 13                  | 164          | 40.2            | 57.3     | 2.4            |
| 14                  | 151          | 53.0            | 43.0     | 4.0            |
| 15                  | 198          | 61.6            | 36.4     | 2.0            |
| 16                  | 184          | 73.9            | 23.4     | 2.7            |
| 17                  | 167          | 67.1            | 32.9     | 0.0            |
| 18                  | 159          | 69.8            | 28.3     | 1.9            |
| 19                  | 127          | 71.7            | 26.0     | 2.4            |
| 20                  | 98           | 68.4            | 30.6     | 1.0            |
| 21                  | 103          | 63.1            | 35.0     | 1.9            |
| 22                  | 90           | 71.1            | 26.7     | 2.2            |

Table 4-2-1-2-18 Hobby (interest) class participation (male) (%)

| Age group(year) | Subjects (n) | Yes  | No   |
|-----------------|--------------|------|------|
| 6               | 172          | 65.1 | 34.9 |
| 7               | 221          | 58.8 | 41.2 |
| 8               | 195          | 66.7 | 33.3 |
| 9               | 192          | 80.7 | 19.3 |
| 10              | 185          | 80.5 | 19.5 |
| 11              | 176          | 73.3 | 26.7 |
| 12              | 186          | 76.3 | 23.7 |
| 13              | 174          | 69.0 | 31.0 |
| 14              | 179          | 68.7 | 31.3 |
| 15              | 177          | 64.4 | 35.6 |
| 16              | 172          | 69.2 | 30.8 |
| 17              | 164          | 65.9 | 34.1 |
| 18              | 159          | 53.5 | 46.5 |
| 19              | 119          | 60.5 | 39.5 |
| 20              | 102          | 66.7 | 33.3 |
| 21              | 99           | 64.6 | 35.4 |
| 22              | 81           | 63.0 | 37.0 |

Table 4-2-1-2-19 Hobby (interest) class participation (female) (%)

| Age group(year) | Subjects (n) | Yes  | No   |
|-----------------|--------------|------|------|
| 6               | 154          | 64.9 | 35.1 |
| 7               | 164          | 73.8 | 26.2 |
| 8               | 150          | 80.0 | 20.0 |
| 9               | 165          | 81.2 | 18.8 |
| 10              | 163          | 85.3 | 14.7 |
| 11              | 151          | 78.1 | 21.9 |
| 12              | 172          | 69.2 | 30.8 |
| 13              | 164          | 71.3 | 28.7 |
| 14              | 151          | 65.6 | 34.4 |
| 15              | 197          | 74.1 | 25.9 |
| 16              | 180          | 68.9 | 31.1 |
| 17              | 167          | 63.5 | 36.5 |
| 18              | 159          | 54.1 | 45.9 |
| 19              | 126          | 54.0 | 46.0 |
| 20              | 96           | 52.1 | 47.9 |
| 21              | 102          | 51.0 | 49.0 |
| 22              | 90           | 66.7 | 33.3 |

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Table 4-2-1-2-20 Types of hobby (interest) classes (male) (%)

| Age group (year) | Participants | Physical exercise | Tutoring | Chess | Music & dance | Drawing & calligraphy | Others |
|------------------|--------------|-------------------|----------|-------|---------------|-----------------------|--------|
| 6                | 112          | 25.9              | 29.5     | 4.5   | 32.1          | 32.1                  | 28.6   |
| 7                | 130          | 40.0              | 27.7     | 11.5  | 27.7          | 35.4                  | 20.8   |
| 8                | 130          | 40.0              | 28.5     | 14.6  | 27.7          | 37.7                  | 27.7   |
| 9                | 155          | 48.4              | 18.7     | 16.1  | 25.2          | 20.0                  | 32.3   |
| 10               | 149          | 60.4              | 20.8     | 20.1  | 18.8          | 19.5                  | 29.5   |
| 11               | 129          | 47.3              | 17.1     | 14.0  | 16.3          | 17.8                  | 36.4   |
| 12               | 142          | 52.1              | 21.8     | 16.2  | 23.2          | 13.4                  | 30.3   |
| 13               | 120          | 68.3              | 17.5     | 20.0  | 12.5          | 5.0                   | 30.8   |
| 14               | 123          | 57.7              | 17.1     | 13.8  | 17.1          | 7.3                   | 33.3   |
| 15               | 114          | 68.4              | 16.7     | 12.3  | 19.3          | 7.9                   | 32.5   |
| 16               | 119          | 58.8              | 17.6     | 14.3  | 22.7          | 3.4                   | 21.0   |
| 17               | 108          | 64.8              | 17.6     | 15.7  | 20.4          | 4.6                   | 38.9   |
| 18               | 85           | 72.9              | 15.3     | 9.4   | 14.1          | 3.5                   | 31.8   |
| 19               | 72           | 70.8              | 18.1     | 8.3   | 22.2          | 6.9                   | 31.9   |
| 20               | 68           | 70.6              | 11.8     | 2.9   | 14.7          | 1.5                   | 30.9   |
| 21               | 64           | 75.0              | 9.4      | 14.1  | 23.4          | 4.7                   | 15.6   |
| 22               | 51           | 56.9              | 5.9      | 13.7  | 19.6          | 15.7                  | 27.5   |

Table 4-2-1-2-21 Types of hobby (interest) classes (female) (%)

| Age group (year) | Participants | Physical exercise | Tutoring | Chess | Music & dance | Drawing & calligraphy | Others |
|------------------|--------------|-------------------|----------|-------|---------------|-----------------------|--------|
| 6                | 100          | 22.0              | 18.0     | 6.0   | 77.0          | 45.0                  | 21.0   |
| 7                | 121          | 27.3              | 21.5     | 2.5   | 53.7          | 28.9                  | 20.7   |
| 8                | 120          | 25.8              | 13.3     | 3.3   | 60.8          | 31.7                  | 26.7   |
| 9                | 134          | 28.4              | 14.9     | 2.2   | 59.0          | 21.6                  | 30.6   |
| 10               | 139          | 36.0              | 18.7     | 3.6   | 41.7          | 22.3                  | 29.5   |
| 11               | 118          | 28.8              | 16.1     | 5.1   | 52.5          | 29.7                  | 22.9   |
| 12               | 119          | 39.5              | 12.6     | 3.4   | 48.7          | 18.5                  | 21.0   |
| 13               | 117          | 36.8              | 13.7     | 1.7   | 33.3          | 13.7                  | 29.9   |
| 14               | 99           | 24.2              | 21.2     | 36.4  | 21.2          | 20.2                  | 39.4   |
| 15               | 146          | 32.9              | 17.8     | 4.1   | 45.2          | 7.5                   | 30.8   |
| 16               | 124          | 29.0              | 16.9     | 0.8   | 47.6          | 12.1                  | 30.6   |
| 17               | 106          | 31.1              | 25.5     | 0.9   | 47.2          | 12.3                  | 29.2   |
| 18               | 86           | 38.4              | 24.4     | 3.5   | 27.9          | 12.8                  | 26.7   |
| 19               | 68           | 33.8              | 22.1     | 1.5   | 36.8          | 14.7                  | 16.2   |
| 20               | 50           | 28.0              | 24.0     | 0.0   | 38.0          | 14.0                  | 36.0   |
| 21               | 52           | 40.4              | 40.4     | 0.0   | 36.5          | 17.3                  | 28.8   |
| 22               | 60           | 38.3              | 11.7     | 0.0   | 38.3          | 1.7                   | 10.0   |

Table 4-2-1-2-22 Frequency of physical education (PE) class every week (male) (%)

| Age group<br>(year) | Subjects<br>(n) | Never | Once | Twice | Three times | Four times<br>or more |
|---------------------|-----------------|-------|------|-------|-------------|-----------------------|
| 6                   | 173             | 0.0   | 30.1 | 69.4  | 0.6         | 0.0                   |
| 7                   | 222             | 0.0   | 33.8 | 64.9  | 0.5         | 0.9                   |
| 8                   | 196             | 0.0   | 39.8 | 59.2  | 0.5         | 0.5                   |
| 9                   | 193             | 0.0   | 37.8 | 61.2  | 0.0         | 1.0                   |
| 10                  | 185             | 0.0   | 37.8 | 60.0  | 1.7         | 0.5                   |
| 11                  | 176             | 0.0   | 43.2 | 56.8  | 0.0         | 0.0                   |
| 12                  | 188             | 0.0   | 43.6 | 55.9  | 0.5         | 0.0                   |
| 13                  | 178             | 0.0   | 39.9 | 58.4  | 0.0         | 1.7                   |
| 14                  | 182             | 0.0   | 37.4 | 61.6  | 0.5         | 0.5                   |
| 15                  | 179             | 0.0   | 31.3 | 68.7  | 0.0         | 0.0                   |
| 16                  | 174             | 0.6   | 32.2 | 66.6  | 0.0         | 0.6                   |
| 17                  | 166             | 4.2   | 27.7 | 68.1  | 0.0         | 0.0                   |
| 18                  | 162             | 12.3  | 25.4 | 61.7  | 0.0         | 0.6                   |
| 19                  | 120             | 43.4  | 30.8 | 25.8  | 0.0         | 0.0                   |
| 20                  | 102             | 59.8  | 24.5 | 14.7  | 0.0         | 1.0                   |
| 21                  | 99              | 65.7  | 22.2 | 8.1   | 0.0         | 4.0                   |
| 22                  | 82              | 62.2  | 34.1 | 3.7   | 0.0         | 0.0                   |

Table 4-2-1-2-23 Frequency of physical education (PE) class every week (female) (%)

| Age group<br>(year) | Subjects<br>(n) | Never | Once | Twice | Three times | At least four<br>times |
|---------------------|-----------------|-------|------|-------|-------------|------------------------|
| 6                   | 155             | 0.0   | 32.9 | 66.5  | 0.6         | 0.0                    |
| 7                   | 165             | 0.0   | 41.2 | 58.8  | 0.0         | 0.0                    |
| 8                   | 150             | 0.0   | 44.0 | 56.0  | 0.0         | 0.0                    |
| 9                   | 165             | 0.0   | 51.5 | 47.9  | 0.6         | 0.0                    |
| 10                  | 163             | 0.0   | 51.5 | 48.5  | 0.0         | 0.0                    |
| 11                  | 151             | 0.0   | 45.7 | 54.3  | 0.0         | 0.0                    |
| 12                  | 172             | 0.0   | 44.2 | 55.2  | 0.6         | 0.0                    |
| 13                  | 164             | 0.0   | 57.9 | 42.1  | 0.0         | 0.0                    |
| 14                  | 151             | 0.0   | 48.3 | 51.7  | 0.0         | 0.0                    |
| 15                  | 198             | 0.0   | 52.0 | 48.0  | 0.0         | 0.0                    |
| 16                  | 184             | 0.5   | 45.2 | 54.3  | 0.0         | 0.0                    |
| 17                  | 167             | 5.4   | 46.1 | 48.5  | 0.0         | 0.0                    |
| 18                  | 159             | 22.6  | 34.0 | 43.4  | 0.0         | 0.0                    |
| 19                  | 127             | 50.4  | 22.8 | 26.8  | 0.0         | 0.0                    |
| 20                  | 98              | 63.3  | 27.6 | 9.2   | 0.0         | 0.0                    |
| 21                  | 103             | 64.1  | 30.1 | 5.8   | 0.0         | 0.0                    |
| 22                  | 90              | 48.9  | 46.7 | 3.3   | 0.0         | 1.1                    |

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Table 4-2-1-2-24 Self-reported intensity of PE class (male) (%)

| Age group<br>(year) | Subjects who<br>participated<br>in PE classes | Low  | Moderate | High |
|---------------------|-----------------------------------------------|------|----------|------|
| 6                   | 173                                           | 39.3 | 46.8     | 13.9 |
| 7                   | 222                                           | 36.5 | 50.5     | 13.0 |
| 8                   | 196                                           | 37.9 | 48.7     | 13.4 |
| 9                   | 193                                           | 33.7 | 56.0     | 10.3 |
| 10                  | 185                                           | 24.3 | 58.4     | 17.3 |
| 11                  | 176                                           | 30.1 | 56.3     | 13.6 |
| 12                  | 188                                           | 31.4 | 54.8     | 13.8 |
| 13                  | 178                                           | 23.6 | 66.8     | 9.6  |
| 14                  | 182                                           | 21.4 | 65.4     | 13.2 |
| 15                  | 179                                           | 28.5 | 61.5     | 10.0 |
| 16                  | 173                                           | 26.6 | 59.5     | 13.9 |
| 17                  | 159                                           | 25.1 | 57.9     | 17.0 |
| 18                  | 142                                           | 22.5 | 62.7     | 14.8 |
| 19                  | 68                                            | 17.6 | 55.9     | 26.5 |
| 20                  | 41                                            | 31.7 | 51.2     | 17.1 |
| 21                  | 34                                            | 20.6 | 47.0     | 32.4 |
| 22                  | 31                                            | 19.4 | 77.4     | 3.2  |

Table 4-2-1-2-25 Self-reported intensity of PE class (female) (%)

| Age group<br>(year) | Subjects who<br>participated<br>in PE classes | Low  | Moderate | High |
|---------------------|-----------------------------------------------|------|----------|------|
| 6                   | 155                                           | 34.2 | 58.7     | 7.1  |
| 7                   | 165                                           | 47.9 | 43.6     | 8.5  |
| 8                   | 150                                           | 36.6 | 56.7     | 6.7  |
| 9                   | 165                                           | 33.3 | 60.6     | 6.1  |
| 10                  | 163                                           | 30.7 | 62.6     | 6.7  |
| 11                  | 151                                           | 34.4 | 58.3     | 7.3  |
| 12                  | 172                                           | 32.0 | 62.2     | 5.8  |
| 13                  | 164                                           | 36.0 | 58.5     | 5.5  |
| 14                  | 151                                           | 30.5 | 62.9     | 6.6  |
| 15                  | 198                                           | 24.7 | 67.2     | 8.1  |
| 16                  | 183                                           | 26.8 | 65.0     | 8.2  |
| 17                  | 158                                           | 21.5 | 69.0     | 9.5  |
| 18                  | 123                                           | 31.7 | 59.4     | 8.9  |
| 19                  | 63                                            | 19.0 | 65.1     | 15.9 |
| 20                  | 36                                            | 36.2 | 44.4     | 19.4 |
| 21                  | 37                                            | 32.4 | 56.8     | 10.8 |
| 22                  | 46                                            | 15.2 | 82.6     | 2.2  |

Table 4-2-1-2-26 Frequency of doing extracurricular physical exercises every week (male) (%)

| Age group<br>(year) | Subjects<br>(n) | Never | At most once | 1~2 times | 3~4 times | 5 times or<br>more |
|---------------------|-----------------|-------|--------------|-----------|-----------|--------------------|
| 6                   | 173             | 39.3  | 32.4         | 18.5      | 5.2       | 4.6                |
| 7                   | 222             | 30.2  | 31.1         | 31.1      | 4.5       | 3.1                |
| 8                   | 193             | 29.0  | 26.4         | 35.2      | 4.7       | 4.7                |
| 9                   | 192             | 22.9  | 24.0         | 36.5      | 7.8       | 8.9                |
| 10                  | 185             | 18.4  | 18.9         | 40.5      | 10.3      | 11.9               |
| 11                  | 172             | 22.1  | 20.3         | 36.6      | 14.0      | 7.0                |
| 12                  | 187             | 23.5  | 22.5         | 32.1      | 11.2      | 10.7               |
| 13                  | 178             | 24.2  | 14.6         | 34.3      | 12.3      | 14.6               |
| 14                  | 180             | 25.0  | 21.1         | 32.8      | 10.0      | 11.1               |
| 15                  | 179             | 16.8  | 13.4         | 39.1      | 14.5      | 16.2               |
| 16                  | 174             | 21.8  | 16.7         | 33.3      | 13.3      | 14.9               |
| 17                  | 166             | 18.7  | 19.3         | 36.7      | 15.7      | 9.6                |
| 18                  | 160             | 21.3  | 18.8         | 38.1      | 10.6      | 11.3               |
| 19                  | 120             | 20.8  | 15.0         | 44.2      | 13.3      | 6.7                |
| 20                  | 102             | 22.5  | 17.6         | 39.3      | 15.7      | 4.9                |
| 21                  | 98              | 17.3  | 20.4         | 45.9      | 11.2      | 5.1                |
| 22                  | 82              | 18.3  | 29.3         | 30.5      | 13.4      | 8.5                |

Table 4-2-1-2-27 Frequency of doing extracurricular physical exercises every week (female) (%)

| Age group<br>(year) | Subjects<br>(n) | Never | At most once | 1~2 times | 3~4 times | 5 times or<br>more |
|---------------------|-----------------|-------|--------------|-----------|-----------|--------------------|
| 6                   | 154             | 40.3  | 22.7         | 29.2      | 4.5       | 3.2                |
| 7                   | 165             | 31.5  | 26.1         | 29.1      | 9.1       | 4.2                |
| 8                   | 150             | 22.7  | 24.0         | 34.0      | 14.0      | 5.3                |
| 9                   | 164             | 21.3  | 24.4         | 37.2      | 11.0      | 6.1                |
| 10                  | 163             | 18.4  | 21.5         | 44.8      | 11.0      | 4.3                |
| 11                  | 151             | 25.8  | 22.5         | 35.8      | 9.9       | 6.0                |
| 12                  | 172             | 32.0  | 18.0         | 32.5      | 10.5      | 7.0                |
| 13                  | 164             | 31.7  | 21.3         | 34.2      | 5.5       | 7.3                |
| 14                  | 150             | 39.3  | 23.3         | 26.7      | 4.7       | 6.0                |
| 15                  | 197             | 39.1  | 21.8         | 23.4      | 7.1       | 8.6                |
| 16                  | 184             | 39.7  | 23.4         | 29.9      | 3.8       | 3.2                |
| 17                  | 166             | 44.0  | 27.7         | 21.7      | 3.6       | 3.0                |
| 18                  | 159             | 42.1  | 17.6         | 30.3      | 7.5       | 2.5                |
| 19                  | 127             | 37.8  | 25.2         | 33.8      | 2.4       | 0.8                |
| 20                  | 96              | 39.6  | 28.1         | 21.9      | 9.4       | 1.0                |
| 21                  | 103             | 34.0  | 34.0         | 27.2      | 3.8       | 1.0                |
| 22                  | 86              | 34.9  | 33.7         | 29.1      | 2.3       | 0.0                |

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Table 4-2-1-2-28 Duration of each extracurricular physical exercise (male) (%)

| Age group (year) | Participants | Within 30 mins | 30 mins~1 hr | 1~2 hrs | 2 hrs or more |
|------------------|--------------|----------------|--------------|---------|---------------|
| 6                | 105          | 32.4           | 52.4         | 14.3    | 1.0           |
| 7                | 155          | 38.7           | 48.4         | 11.0    | 1.9           |
| 8                | 140          | 32.9           | 49.3         | 14.3    | 3.6           |
| 9                | 149          | 24.2           | 44.3         | 28.2    | 3.4           |
| 10               | 151          | 17.2           | 45.7         | 32.5    | 4.6           |
| 11               | 138          | 21.7           | 40.6         | 26.1    | 11.6          |
| 12               | 144          | 17.4           | 44.4         | 28.5    | 9.7           |
| 13               | 135          | 15.6           | 37.0         | 30.4    | 17.0          |
| 14               | 137          | 15.3           | 29.9         | 30.7    | 24.1          |
| 15               | 149          | 12.8           | 25.5         | 33.6    | 28.2          |
| 16               | 136          | 16.2           | 25.0         | 33.1    | 25.7          |
| 17               | 135          | 11.9           | 23.0         | 37.8    | 27.4          |
| 18               | 128          | 6.3            | 29.7         | 38.3    | 25.8          |
| 19               | 96           | 11.5           | 26.0         | 37.5    | 25.0          |
| 20               | 79           | 13.9           | 21.5         | 43.0    | 21.5          |
| 21               | 82           | 15.9           | 26.8         | 42.7    | 14.6          |
| 22               | 67           | 17.9           | 49.3         | 29.9    | 3.0           |

Table 4-2-1-2-29 Duration of each extracurricular physical exercise (female) (%)

| Age group (year) | Participants | Within 30 mins | 30 mins~1 hr | 1~2 hrs | 2 hrs or more |
|------------------|--------------|----------------|--------------|---------|---------------|
| 6                | 93           | 41.9           | 44.1         | 12.9    | 1.1           |
| 7                | 113          | 42.5           | 46.0         | 9.7     | 1.8           |
| 8                | 116          | 38.8           | 41.4         | 15.5    | 4.3           |
| 9                | 130          | 27.7           | 47.7         | 20.8    | 3.8           |
| 10               | 133          | 27.8           | 48.1         | 22.6    | 1.5           |
| 11               | 112          | 33.9           | 36.6         | 22.3    | 7.1           |
| 12               | 117          | 18.8           | 40.2         | 26.5    | 14.5          |
| 13               | 112          | 22.3           | 43.8         | 25.9    | 8.0           |
| 14               | 92           | 27.2           | 38.0         | 28.3    | 6.5           |
| 15               | 121          | 30.6           | 28.1         | 29.8    | 11.6          |
| 16               | 111          | 23.4           | 41.4         | 25.2    | 9.9           |
| 17               | 94           | 33.0           | 35.1         | 19.1    | 12.8          |
| 18               | 92           | 17.4           | 46.7         | 28.3    | 7.6           |
| 19               | 79           | 24.1           | 41.8         | 29.1    | 5.1           |
| 20               | 60           | 33.3           | 38.3         | 23.3    | 5.0           |
| 21               | 68           | 27.9           | 44.1         | 22.1    | 5.9           |
| 22               | 60           | 18.3           | 61.7         | 18.3    | 1.7           |

Table 4-2-1-2-30 Self-reported exercise intensity (male) (%)

| Age group (year) | Participants | Low  | Moderate | High |
|------------------|--------------|------|----------|------|
| 6                | 105          | 32.4 | 47.6     | 20.0 |
| 7                | 155          | 36.8 | 49.0     | 14.2 |
| 8                | 140          | 23.6 | 62.1     | 14.3 |
| 9                | 149          | 31.5 | 53.0     | 15.4 |
| 10               | 151          | 20.5 | 62.3     | 17.2 |
| 11               | 138          | 26.8 | 58.0     | 15.2 |
| 12               | 144          | 25.7 | 55.6     | 18.8 |
| 13               | 135          | 17.0 | 63.7     | 19.3 |
| 14               | 137          | 19.7 | 59.9     | 20.4 |
| 15               | 149          | 13.4 | 59.1     | 27.5 |
| 16               | 136          | 11.8 | 57.4     | 30.9 |
| 17               | 135          | 12.6 | 56.3     | 31.1 |
| 18               | 128          | 11.7 | 40.6     | 47.7 |
| 19               | 96           | 15.6 | 39.6     | 44.8 |
| 20               | 79           | 12.7 | 39.2     | 48.1 |
| 21               | 82           | 9.8  | 43.9     | 46.3 |
| 22               | 67           | 11.9 | 47.8     | 40.3 |

Table 4-2-1-2-31 Self-reported exercise intensity (female) (%)

| Age group (year) | Participants | Low  | Moderate | High |
|------------------|--------------|------|----------|------|
| 6                | 93           | 45.2 | 44.1     | 10.8 |
| 7                | 113          | 43.4 | 48.7     | 8.0  |
| 8                | 116          | 33.6 | 59.5     | 6.9  |
| 9                | 130          | 29.2 | 59.2     | 11.5 |
| 10               | 133          | 33.8 | 56.4     | 9.8  |
| 11               | 112          | 29.5 | 59.8     | 10.7 |
| 12               | 117          | 17.1 | 73.5     | 9.4  |
| 13               | 112          | 20.5 | 66.1     | 13.4 |
| 14               | 92           | 27.2 | 64.1     | 8.7  |
| 15               | 121          | 18.2 | 66.9     | 14.9 |
| 16               | 111          | 18.9 | 64.0     | 17.1 |
| 17               | 94           | 12.8 | 64.9     | 22.3 |
| 18               | 92           | 15.2 | 58.7     | 26.1 |
| 19               | 79           | 12.7 | 65.8     | 21.5 |
| 20               | 60           | 15.0 | 70.0     | 15.0 |
| 21               | 68           | 11.8 | 76.5     | 11.8 |
| 22               | 60           | 5.0  | 78.3     | 16.7 |

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Table 4-2-1-2-32 Types of extracurricular sports activities participated (male) (%)

| Age group<br>(year) | Partic<br>ipants | Swimming | Track &<br>field | Ball<br>games | Gymnast<br>ics | Skating | Dancing | Rope<br>Skipping | Martial        |                      | Cycling | Judo | Karate | Yoga | Others |
|---------------------|------------------|----------|------------------|---------------|----------------|---------|---------|------------------|----------------|----------------------|---------|------|--------|------|--------|
|                     |                  |          |                  |               |                |         |         |                  | Tae Kwon<br>Do | arts &<br>Kwon<br>Do |         |      |        |      |        |
| 6                   | 104              | 38.5     | 13.5             | 48.1          | 7.7            | 1.9     | 1.9     | 12.5             | 1.9            | 34.6                 | 0.0     | 4.8  | 0.0    | 5.8  |        |
| 7                   | 155              | 31.6     | 13.5             | 52.9          | 9.7            | 5.8     | 0.6     | 25.2             | 3.2            | 23.2                 | 2.6     | 2.6  | 0.0    | 1.9  |        |
| 8                   | 140              | 39.3     | 11.4             | 59.3          | 10.0           | 3.6     | 1.4     | 19.3             | 6.4            | 30.0                 | 3.6     | 3.6  | 0.0    | 0.7  |        |
| 9                   | 148              | 37.2     | 18.9             | 70.3          | 6.1            | 2.7     | 0.7     | 5.4              | 5.4            | 20.9                 | 2.0     | 6.8  | 0.0    | 3.4  |        |
| 10                  | 151              | 37.7     | 21.9             | 75.5          | 5.3            | 2.0     | 0.7     | 8.6              | 7.3            | 21.2                 | 2.6     | 2.0  | 0.0    | 1.3  |        |
| 11                  | 138              | 27.5     | 13.8             | 81.2          | 5.1            | 2.2     | 0.0     | 8.7              | 2.2            | 22.5                 | 7.2     | 4.3  | 2.2    | 0.0  |        |
| 12                  | 144              | 26.4     | 22.2             | 79.2          | 0.7            | 6.9     | 0.0     | 3.5              | 2.8            | 13.9                 | 3.5     | 1.4  | 0.0    | 3.5  |        |
| 13                  | 133              | 25.6     | 25.6             | 89.5          | 1.5            | 3.0     | 0.8     | 2.3              | 3.0            | 12.0                 | 0.8     | 1.5  | 0.0    | 3.0  |        |
| 14                  | 135              | 20.7     | 23.7             | 78.5          | 1.5            | 1.5     | 0.0     | 2.2              | 5.2            | 9.6                  | 1.5     | 1.5  | 0.0    | 6.7  |        |
| 15                  | 148              | 13.5     | 27.7             | 79.7          | 0.7            | 1.4     | 2.7     | 6.8              | 3.4            | 8.8                  | 0.7     | 2.0  | 0.0    | 8.8  |        |
| 16                  | 135              | 14.1     | 20.7             | 85.9          | 1.5            | 2.2     | 2.2     | 4.4              | 4.4            | 7.4                  | 0.7     | 3.0  | 0.0    | 8.9  |        |
| 17                  | 135              | 18.5     | 34.8             | 83.7          | 2.2            | 3.0     | 3.0     | 0.7              | 5.2            | 6.7                  | 2.2     | 3.0  | 0.0    | 5.2  |        |
| 18                  | 128              | 14.1     | 22.7             | 85.9          | 0.8            | 0.0     | 2.3     | 0.8              | 3.9            | 5.5                  | 1.6     | 3.9  | 0.0    | 7.8  |        |
| 19                  | 95               | 16.8     | 28.4             | 88.4          | 1.1            | 2.1     | 1.1     | 5.3              | 7.4            | 10.5                 | 2.1     | 2.1  | 1.1    | 11.6 |        |
| 20                  | 79               | 16.5     | 24.1             | 89.9          | 2.5            | 3.8     | 2.5     | 0.0              | 6.3            | 2.5                  | 0.0     | 1.3  | 0.0    | 10.1 |        |
| 21                  | 82               | 9.8      | 18.3             | 76.8          | 0.0            | 0.0     | 4.9     | 1.2              | 12.2           | 7.3                  | 0.0     | 4.9  | 2.4    | 13.4 |        |
| 22                  | 67               | 14.9     | 14.9             | 61.2          | 3.0            | 0.0     | 4.5     | 0.0              | 7.5            | 10.4                 | 1.5     | 3.0  | 3.0    | 14.9 |        |

Table 4-2-1-2-33 Types of extracurricular sports activities participated (female) (%)

| Age group<br>(year) | Partic<br>ipants | Swimming | Track &<br>field | Ball<br>games | Gymnast<br>ics | Skating | Dancing | Rope<br>Skipping | Martial        |                      | Cycling | Judo | Karate | Yoga | Others |
|---------------------|------------------|----------|------------------|---------------|----------------|---------|---------|------------------|----------------|----------------------|---------|------|--------|------|--------|
|                     |                  |          |                  |               |                |         |         |                  | Tae Kwon<br>Do | arts &<br>Kwon<br>Do |         |      |        |      |        |
| 6                   | 93               | 24.7     | 4.3              | 16.1          | 11.8           | 1.1     | 38.7    | 31.2             | 10.8           | 11.8                 | 0.0     | 0.0  | 0.0    | 5.4  |        |
| 7                   | 112              | 31.3     | 9.8              | 26.8          | 13.4           | 3.6     | 31.3    | 35.7             | 0.9            | 19.6                 | 0.0     | 2.7  | 0.9    | 5.4  |        |
| 8                   | 116              | 33.6     | 8.6              | 35.3          | 12.9           | 6.0     | 31.0    | 31.9             | 3.4            | 26.7                 | 0.9     | 0.0  | 0.0    | 0.0  |        |
| 9                   | 130              | 40.0     | 14.6             | 43.1          | 10.8           | 6.2     | 22.3    | 34.6             | 2.3            | 18.5                 | 0.0     | 0.0  | 0.0    | 2.3  |        |
| 10                  | 133              | 42.9     | 15.8             | 50.4          | 7.5            | 4.5     | 11.3    | 21.8             | 10.5           | 15.0                 | 0.8     | 0.8  | 0.0    | 1.5  |        |
| 11                  | 112              | 35.7     | 21.4             | 4.5           | 7.1            | 9.8     | 17.9    | 17.0             | 0.9            | 21.4                 | 0.0     | 0.0  | 0.0    | 2.7  |        |
| 12                  | 116              | 32.8     | 15.5             | 63.8          | 0.9            | 6.9     | 9.5     | 12.9             | 3.4            | 15.5                 | 0.0     | 1.7  | 0.0    | 2.6  |        |
| 13                  | 112              | 27.7     | 25.9             | 58.9          | 0.9            | 7.1     | 11.6    | 8.9              | 1.8            | 13.4                 | 1.8     | 0.9  | 1.8    | 2.7  |        |
| 14                  | 92               | 21.7     | 15.2             | 63.0          | 1.1            | 7.6     | 10.9    | 16.3             | 5.4            | 12.0                 | 1.1     | 1.1  | 1.1    | 20.7 |        |
| 15                  | 121              | 19.8     | 21.5             | 60.3          | 0.8            | 1.7     | 14.0    | 9.1              | 1.7            | 7.4                  | 1.7     | 0.8  | 2.5    | 10.7 |        |
| 16                  | 111              | 26.1     | 22.5             | 60.4          | 1.8            | 3.6     | 9.0     | 9.0              | 2.7            | 15.3                 | 0.9     | 1.8  | 6.3    | 0.0  |        |
| 17                  | 94               | 20.2     | 35.1             | 54.3          | 0.0            | 1.1     | 14.9    | 10.6             | 4.3            | 8.5                  | 2.1     | 0.0  | 1.1    | 4.3  |        |
| 18                  | 92               | 25.0     | 31.5             | 62.0          | 3.3            | 5.4     | 7.6     | 5.4              | 2.2            | 10.9                 | 0.0     | 2.2  | 3.3    | 9.8  |        |
| 19                  | 79               | 20.3     | 30.4             | 51.9          | 1.3            | 1.3     | 15.2    | 12.7             | 1.3            | 8.9                  | 1.3     | 1.3  | 12.7   | 7.6  |        |
| 20                  | 60               | 26.7     | 23.3             | 56.7          | 0.0            | 0.0     | 13.3    | 6.7              | 0.0            | 6.7                  | 0.0     | 1.7  | 8.3    | 16.7 |        |
| 21                  | 68               | 38.2     | 23.5             | 39.7          | 2.9            | 1.5     | 14.7    | 8.8              | 0.0            | 8.8                  | 0.0     | 0.0  | 11.8   | 20.6 |        |
| 22                  | 60               | 33.3     | 30.0             | 48.3          | 3.3            | 0.0     | 20.0    | 6.7              | 0.0            | 8.3                  | 0.0     | 3.3  | 18.3   | 3.3  |        |

Table 4-2-1-2-34 Types of ball games most frequently participated (male) (%)

| Age group (year) | Participants | Basketball | Volley ball | Foot-ball | Table tennis | Badminton | Tennis | Golf | Billiards |
|------------------|--------------|------------|-------------|-----------|--------------|-----------|--------|------|-----------|
| 6                | 50           | 20.0       | 0.0         | 60.0      | 2.0          | 18.0      | 0.0    | 0.0  | 0.0       |
| 7                | 82           | 15.9       | 0.0         | 37.8      | 19.5         | 23.2      | 3.7    | 0.0  | 0.0       |
| 8                | 83           | 20.5       | 0.0         | 45.8      | 15.7         | 16.9      | 1.2    | 0.0  | 0.0       |
| 9                | 104          | 18.3       | 3.8         | 33.7      | 27.9         | 16.3      | 0.0    | 0.0  | 0.0       |
| 10               | 114          | 18.4       | 2.6         | 21.1      | 32.5         | 23.7      | 0.9    | 0.9  | 0.0       |
| 11               | 112          | 25.0       | 6.3         | 19.6      | 34.8         | 13.4      | 0.9    | 0.0  | 0.0       |
| 12               | 114          | 36.8       | 5.3         | 22.8      | 24.6         | 7.9       | 1.8    | 0.9  | 0.0       |
| 13               | 119          | 43.7       | 3.4         | 23.5      | 14.3         | 12.6      | 1.7    | 0.8  | 0.0       |
| 14               | 106          | 49.5       | 1.9         | 28.6      | 10.5         | 6.7       | 1.0    | 1.0  | 1.0       |
| 15               | 118          | 50.8       | 2.5         | 28.0      | 5.9          | 11.0      | 0.8    | 0.0  | 0.8       |
| 16               | 115          | 60.9       | 2.6         | 20.9      | 6.1          | 7.0       | 1.7    | 0.0  | 0.9       |
| 17               | 113          | 54.0       | 3.5         | 23.0      | 4.4          | 12.4      | 0.9    | 0.0  | 1.8       |
| 18               | 110          | 49.1       | 4.5         | 27.3      | 2.7          | 12.7      | 0.9    | 0.9  | 1.8       |
| 19               | 84           | 45.2       | 7.1         | 27.4      | 3.6          | 13.1      | 1.2    | 0.0  | 2.4       |
| 20               | 71           | 53.5       | 2.8         | 22.5      | 4.2          | 14.1      | 1.4    | 0.0  | 1.4       |
| 21               | 62           | 43.5       | 3.2         | 40.3      | 4.8          | 3.2       | 0.0    | 0.0  | 4.8       |
| 22               | 40           | 37.5       | 0.0         | 37.5      | 15.0         | 10.0      | 0.0    | 0.0  | 0.0       |

Table 4-2-1-2-35 Types of ball games most frequently participated (female) (%)

| Age group (year) | Participants | Basketball | Volley ball | Foot-ball | Table tennis | Badminton | Tennis | Golf | Billiards |
|------------------|--------------|------------|-------------|-----------|--------------|-----------|--------|------|-----------|
| 6                | 15           | 26.7       | 13.3        | 6.7       | 0.0          | 46.7      | 6.7    | 0.0  | 0.0       |
| 7                | 30           | 23.3       | 6.7         | 16.7      | 13.3         | 40.0      | 0.0    | 0.0  | 0.0       |
| 8                | 41           | 9.8        | 0.0         | 0.0       | 22.0         | 65.9      | 2.4    | 0.0  | 0.0       |
| 9                | 56           | 16.1       | 8.9         | 1.8       | 17.9         | 48.2      | 7.1    | 0.0  | 0.0       |
| 10               | 67           | 9.0        | 17.9        | 0.0       | 10.4         | 61.2      | 1.5    | 0.0  | 0.0       |
| 11               | 61           | 13.1       | 31.1        | 3.3       | 8.2          | 42.6      | 1.6    | 0.0  | 0.0       |
| 12               | 74           | 16.2       | 33.8        | 1.4       | 2.7          | 44.6      | 1.4    | 0.0  | 0.0       |
| 13               | 66           | 10.6       | 31.8        | 0.0       | 1.5          | 54.5      | 1.5    | 0.0  | 0.0       |
| 14               | 58           | 19.0       | 25.9        | 0.0       | 1.7          | 50.0      | 0.0    | 1.7  | 1.7       |
| 15               | 73           | 15.1       | 30.1        | 0.0       | 2.7          | 46.6      | 4.1    | 0.0  | 1.4       |
| 16               | 66           | 10.6       | 28.8        | 1.5       | 1.5          | 50.0      | 7.6    | 0.0  | 0.0       |
| 17               | 51           | 19.6       | 21.6        | 3.9       | 2.0          | 45.1      | 7.8    | 0.0  | 0.0       |
| 18               | 57           | 22.8       | 21.1        | 1.8       | 3.5          | 49.1      | 0.0    | 0.0  | 1.8       |
| 19               | 41           | 14.6       | 24.4        | 0.0       | 9.8          | 48.8      | 0.0    | 0.0  | 2.4       |
| 20               | 34           | 29.4       | 14.7        | 0.0       | 5.9          | 47.1      | 0.0    | 0.0  | 2.9       |
| 21               | 27           | 25.9       | 7.4         | 0.0       | 3.7          | 63.0      | 0.0    | 0.0  | 0.0       |
| 22               | 28           | 25.0       | 17.9        | 0.0       | 0.0          | 55.2      | 0.0    | 0.0  | 0.0       |

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Table 4-2-1-2-36 Occurrence of diseases in the past five years (male) (%)

| Age group (year) | Subjects (n) | Yes  | No   |
|------------------|--------------|------|------|
| 6                | 173          | 17.3 | 82.7 |
| 7                | 222          | 16.7 | 83.3 |
| 8                | 196          | 14.8 | 85.2 |
| 9                | 193          | 12.4 | 87.6 |
| 10               | 185          | 11.9 | 88.1 |
| 11               | 176          | 13.6 | 86.4 |
| 12               | 188          | 14.9 | 85.1 |
| 13               | 178          | 25.8 | 74.2 |
| 14               | 182          | 22.5 | 77.5 |
| 15               | 179          | 15.6 | 84.4 |
| 16               | 174          | 17.2 | 82.8 |
| 17               | 166          | 16.9 | 83.1 |
| 18               | 162          | 19.8 | 80.2 |
| 19               | 120          | 23.3 | 76.7 |
| 20               | 102          | 20.6 | 79.4 |
| 21               | 99           | 18.2 | 81.8 |
| 22               | 82           | 26.8 | 73.2 |

Table 4-2-1-2-37 Occurrence of diseases in the past five years (female) (%)

| Age group (year) | Subjects (n) | Yes  | No   |
|------------------|--------------|------|------|
| 6                | 155          | 6.5  | 93.5 |
| 7                | 165          | 16.4 | 83.6 |
| 8                | 150          | 12.0 | 88.0 |
| 9                | 165          | 13.3 | 86.7 |
| 10               | 163          | 11.0 | 89.0 |
| 11               | 151          | 11.3 | 88.7 |
| 12               | 172          | 13.4 | 86.6 |
| 13               | 164          | 12.8 | 87.2 |
| 14               | 151          | 19.2 | 80.8 |
| 15               | 198          | 12.6 | 87.4 |
| 16               | 184          | 16.8 | 83.2 |
| 17               | 167          | 15.6 | 84.4 |
| 18               | 159          | 13.8 | 86.2 |
| 19               | 127          | 15.0 | 85.0 |
| 20               | 98           | 12.2 | 87.8 |
| 21               | 103          | 10.7 | 89.3 |
| 22               | 90           | 17.8 | 82.2 |

Table 4-2-1-2-38 Most common diseases diagnosed in the past five years (male) (%)

| Age group (year) | Disease-stricken subjects | Chronic bronchitis | Pneumonia | Asthma | Hepatitis | Accidental injury |
|------------------|---------------------------|--------------------|-----------|--------|-----------|-------------------|
| 6                | 30                        | 43.3               | 33.3      | 26.7   | 0.0       | 3.3               |
| 7                | 37                        | 37.8               | 32.4      | 13.5   | 0.0       | 29.7              |
| 8                | 29                        | 31.0               | 13.8      | 13.8   | 0.0       | 34.5              |
| 9                | 24                        | 33.3               | 4.2       | 16.7   | 0.0       | 37.5              |
| 10               | 22                        | 22.7               | 13.6      | 13.6   | 0.0       | 31.8              |
| 11               | 24                        | 16.7               | 8.3       | 16.7   | 0.0       | 29.2              |
| 12               | 28                        | 14.3               | 3.6       | 17.9   | 0.0       | 39.3              |
| 13               | 46                        | 8.7                | 6.5       | 6.5    | 0.0       | 39.1              |
| 14               | 41                        | 17.1               | 4.9       | 9.8    | 0.0       | 56.1              |
| 15               | 28                        | 10.7               | 7.1       | 3.6    | 3.6       | 60.7              |
| 16               | 30                        | 6.7                | 0.0       | 6.7    | 0.0       | 36.7              |
| 17               | 28                        | 17.9               | 7.1       | 10.7   | 10.7      | 39.3              |
| 18               | 32                        | 9.4                | 0.0       | 3.1    | 0.0       | 40.6              |
| 19               | 28                        | 7.1                | 0.0       | 0.0    | 17.9      | 46.4              |
| 20               | 21                        | 9.5                | 0.0       | 4.8    | 9.5       | 52.4              |
| 21               | 18                        | 11.1               | 0.0       | 0.0    | 33.3      | 27.8              |
| 22               | 22                        | 0.0                | 4.5       | 0.0    | 18.2      | 50.0              |

Table 4-2-1-2-39 Most common diseases diagnosed in the past five years (female)(%)

| Age group (year) | Disease-stricken subjects | Chronic bronchitis | Pneumonia | Asthma | Anemia | Accidental injury |
|------------------|---------------------------|--------------------|-----------|--------|--------|-------------------|
| 6                | 10                        | 50.0               | 20.0      | 0.0    | 0.0    | 30.0              |
| 7                | 27                        | 44.4               | 3.7       | 0.0    | 11.1   | 33.3              |
| 8                | 18                        | 33.3               | 22.2      | 11.1   | 5.6    | 22.2              |
| 9                | 22                        | 36.4               | 0.0       | 18.2   | 0.0    | 40.9              |
| 10               | 18                        | 11.1               | 0.0       | 16.7   | 5.6    | 27.8              |
| 11               | 17                        | 23.5               | 0.0       | 0.0    | 0.0    | 35.3              |
| 12               | 23                        | 8.7                | 8.7       | 4.3    | 4.3    | 30.4              |
| 13               | 21                        | 9.5                | 4.8       | 14.3   | 14.3   | 33.3              |
| 14               | 29                        | 17.2               | 3.4       | 10.3   | 13.8   | 24.1              |
| 15               | 25                        | 12.0               | 4.0       | 4.0    | 4.0    | 20.0              |
| 16               | 31                        | 9.7                | 6.5       | 3.2    | 25.8   | 29.0              |
| 17               | 26                        | 7.7                | 0.0       | 0.0    | 19.2   | 15.4              |
| 18               | 22                        | 9.1                | 0.0       | 4.5    | 13.6   | 18.2              |
| 19               | 19                        | 21.1               | 5.3       | 0.0    | 31.6   | 15.8              |
| 20               | 12                        | 41.7               | 8.3       | 8.3    | 8.3    | 16.7              |
| 21               | 11                        | 9.1                | 0.0       | 0.0    | 9.1    | 27.3              |
| 22               | 16                        | 25.0               | 6.3       | 0.0    | 31.3   | 18.8              |

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### 4.2.3 Anthropometric Measurements

Table 4-2-2-2-40 Height (cm)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |       |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| M      | 6                | 173 | 118.8 | 4.49  | 110.6          | 113.2           | 115.5           | 118.4           | 122.3           | 125.0           | 126.8           |       |
|        | 7                | 222 | 124.1 | 5.42  | 113.3          | 116.6           | 121.0           | 124.0           | 127.8           | 130.8           | 135.3           |       |
|        | 8                | 196 | 128.6 | 5.45  | 118.3          | 121.3           | 124.8           | 128.3           | 132.0           | 136.1           | 139.9           |       |
|        | 9                | 193 | 134.4 | 5.41  | 123.8          | 127.7           | 130.4           | 134.5           | 137.3           | 141.2           | 145.8           |       |
|        | 10               | 185 | 140.1 | 6.58  | 128.4          | 132.1           | 135.5           | 140.3           | 144.3           | 149.4           | 153.0           |       |
|        | 11               | 176 | 145.8 | 7.69  | 131.2          | 137.2           | 140.3           | 145.3           | 151.4           | 156.5           | 159.8           |       |
|        | 12               | 188 | 152.3 | 8.05  | 136.8          | 142.0           | 146.2           | 152.4           | 158.3           | 162.3           | 168.8           |       |
|        | 13               | 178 | 160.7 | 7.83  | 145.4          | 150.4           | 155.2           | 161.3           | 166.0           | 170.3           | 175.3           |       |
|        | 14               | 182 | 166.3 | 6.72  | 153.2          | 157.4           | 162.1           | 166.6           | 170.8           | 174.7           | 179.4           |       |
|        | 15               | 179 | 169.0 | 6.00  | 157.5          | 160.6           | 164.5           | 169.0           | 173.2           | 176.1           | 180.9           |       |
|        | 16               | 174 | 170.6 | 5.88  | 160.4          | 163.7           | 166.8           | 170.2           | 173.1           | 177.7           | 184.6           |       |
|        | 17               | 166 | 171.2 | 6.27  | 160.6          | 164.1           | 166.8           | 170.8           | 175.5           | 179.3           | 182.4           |       |
|        | 18               | 162 | 171.3 | 5.37  | 160.2          | 164.9           | 167.8           | 171.3           | 174.9           | 177.8           | 182.5           |       |
|        | 19               | 120 | 170.9 | 6.54  | 159.3          | 160.9           | 166.8           | 171.1           | 175.5           | 179.8           | 181.5           |       |
|        | 20               | 102 | 171.1 | 5.96  | 158.5          | 164.7           | 167.6           | 171.0           | 174.5           | 178.9           | 183.4           |       |
|        | 21               | 99  | 172.3 | 5.95  | 162.8          | 164.2           | 167.6           | 172.3           | 177.2           | 180.8           | 182.9           |       |
|        | 22               | 82  | 170.4 | 4.48  | 160.1          | 164.1           | 168.4           | 169.7           | 173.6           | 177.1           | 179.0           |       |
|        | F                | 6   | 155   | 117.9 | 5.04           | 108.5           | 111.0           | 114.7           | 117.6           | 121.5           | 124.4           | 127.6 |
|        |                  | 7   | 165   | 122.8 | 4.99           | 113.2           | 116.2           | 119.5           | 122.8           | 126.0           | 129.1           | 132.7 |
|        |                  | 8   | 150   | 127.7 | 6.33           | 114.4           | 120.5           | 123.9           | 127.8           | 131.7           | 135.9           | 139.0 |
|        |                  | 9   | 165   | 134.8 | 6.33           | 125.2           | 126.8           | 130.0           | 134.6           | 138.7           | 142.3           | 148.9 |
|        |                  | 10  | 163   | 140.9 | 6.57           | 129.4           | 132.2           | 136.2           | 140.5           | 144.9           | 149.9           | 153.9 |
| 11     |                  | 151 | 147.7 | 5.98  | 137.5          | 140.3           | 143.0           | 147.5           | 151.8           | 156.1           | 159.8           |       |
| 12     |                  | 172 | 152.1 | 5.97  | 141.5          | 144.7           | 147.6           | 152.2           | 156.6           | 160.4           | 163.0           |       |
| 13     |                  | 164 | 155.6 | 5.98  | 144.4          | 147.9           | 151.8           | 154.7           | 159.8           | 163.3           | 167.1           |       |
| 14     |                  | 151 | 156.5 | 5.80  | 144.4          | 150.1           | 153.2           | 156.1           | 160.5           | 163.9           | 167.4           |       |
| 15     |                  | 198 | 158.6 | 5.44  | 147.7          | 151.6           | 155.5           | 158.4           | 162.5           | 165.6           | 167.9           |       |
| 16     |                  | 184 | 157.9 | 5.85  | 147.0          | 150.8           | 154.0           | 158.5           | 161.0           | 164.8           | 169.7           |       |
| 17     |                  | 167 | 157.3 | 5.16  | 148.4          | 150.2           | 153.6           | 157.2           | 161.2           | 164.0           | 166.3           |       |
| 18     |                  | 159 | 158.5 | 5.65  | 147.6          | 150.7           | 154.1           | 158.9           | 162.3           | 166.1           | 168.4           |       |
| 19     |                  | 127 | 158.0 | 5.37  | 148.4          | 151.5           | 153.8           | 157.9           | 161.8           | 164.3           | 168.3           |       |
| 20     |                  | 98  | 157.8 | 5.43  | 146.3          | 151.4           | 153.6           | 157.8           | 161.7           | 164.4           | 169.2           |       |
| 21     |                  | 103 | 158.1 | 5.16  | 147.0          | 151.6           | 154.7           | 158.3           | 160.9           | 164.9           | 169.6           |       |
| 22     |                  | 90  | 157.7 | 4.95  | 148.9          | 152.1           | 155.3           | 158.0           | 160.6           | 163.8           | 166.1           |       |

Table 4-2-2-2-41 Sitting height (cm)

| Gender | Age group (year) | n    | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|------|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173  | 65.1 | 2.36 | 60.2           | 62.0            | 63.6            | 65.0            | 66.5            | 68.4            | 69.9            |      |
|        | 7                | 222  | 67.4 | 3.24 | 61.4           | 63.7            | 65.5            | 67.3            | 69.2            | 70.8            | 72.4            |      |
|        | 8                | 196  | 69.0 | 2.92 | 63.8           | 65.5            | 66.8            | 68.8            | 71.1            | 73.4            | 75.0            |      |
|        | 9                | 193  | 71.4 | 4.41 | 66.3           | 68.0            | 69.6            | 71.6            | 73.7            | 75.3            | 76.9            |      |
|        | 10               | 185  | 73.8 | 3.31 | 67.9           | 69.6            | 71.6            | 73.7            | 76.0            | 78.8            | 79.7            |      |
|        | 11               | 176  | 76.3 | 4.17 | 68.9           | 71.3            | 73.4            | 76.1            | 79.5            | 81.7            | 83.8            |      |
|        | 12               | 188  | 79.6 | 4.57 | 71.9           | 73.6            | 75.9            | 79.3            | 82.9            | 86.0            | 88.5            |      |
|        | 13               | 178  | 83.8 | 4.82 | 74.5           | 77.0            | 80.6            | 84.1            | 87.1            | 89.7            | 92.9            |      |
|        | 14               | 182  | 87.6 | 3.91 | 79.7           | 82.2            | 85.1            | 87.7            | 90.0            | 92.4            | 94.3            |      |
|        | 15               | 179  | 89.6 | 3.34 | 82.6           | 85.5            | 87.4            | 89.6            | 92.1            | 94.0            | 95.6            |      |
|        | 16               | 174  | 90.9 | 2.86 | 85.9           | 87.5            | 88.8            | 90.6            | 92.8            | 94.5            | 96.2            |      |
|        | 17               | 166  | 91.4 | 3.43 | 85.3           | 87.2            | 89.1            | 90.8            | 94.2            | 96.0            | 98.2            |      |
|        | 18               | 162  | 91.9 | 2.93 | 86.0           | 88.0            | 90.1            | 91.9            | 93.8            | 95.5            | 97.0            |      |
|        | 19               | 120  | 91.6 | 3.17 | 86.3           | 87.8            | 89.1            | 91.5            | 94.0            | 95.6            | 97.5            |      |
|        | 20               | 102  | 91.7 | 3.01 | 86.4           | 88.1            | 89.8            | 91.5            | 93.6            | 95.0            | 98.1            |      |
|        | 21               | 99   | 92.1 | 2.97 | 85.7           | 87.5            | 90.2            | 92.0            | 94.2            | 95.7            | 97.5            |      |
|        | 22               | 82   | 91.2 | 2.63 | 85.9           | 88.1            | 89.6            | 91.0            | 92.8            | 94.9            | 96.3            |      |
|        | F                | 6    | 155  | 64.4 | 2.85           | 59.4            | 61.0            | 62.5            | 64.4            | 66.1            | 67.8            | 70.4 |
|        |                  | 7    | 165  | 66.9 | 2.64           | 62.6            | 63.5            | 65.1            | 67.1            | 68.6            | 70.7            | 71.8 |
|        |                  | 8    | 150  | 68.8 | 3.19           | 63.2            | 64.5            | 67.0            | 68.8            | 71.1            | 73.1            | 74.0 |
|        |                  | 9    | 165  | 71.9 | 3.67           | 65.9            | 67.3            | 69.4            | 71.7            | 74.3            | 76.4            | 79.6 |
|        |                  | 10   | 163  | 74.8 | 3.76           | 68.3            | 69.9            | 72.2            | 74.4            | 77.6            | 79.4            | 82.7 |
| 11     |                  | 151  | 78.1 | 3.76 | 71.5           | 73.4            | 75.3            | 78.2            | 80.7            | 82.6            | 84.4            |      |
| 12     |                  | 172  | 80.6 | 3.63 | 73.5           | 76.2            | 78.0            | 80.6            | 82.9            | 85.4            | 87.7            |      |
| 13     |                  | 164  | 83.0 | 3.46 | 76.2           | 78.8            | 81.0            | 83.3            | 85.4            | 87.0            | 88.7            |      |
| 14     |                  | 151  | 83.9 | 3.17 | 77.3           | 79.7            | 81.3            | 84.3            | 86.1            | 87.9            | 88.9            |      |
| 15     |                  | 198  | 85.4 | 3.04 | 79.8           | 81.8            | 83.6            | 85.4            | 87.4            | 89.0            | 90.7            |      |
| 16     |                  | 184  | 85.2 | 3.10 | 79.3           | 81.5            | 83.1            | 84.9            | 87.1            | 89.3            | 91.7            |      |
| 17     |                  | 167  | 85.0 | 2.73 | 80.2           | 81.4            | 83.3            | 84.9            | 86.7            | 88.7            | 90.4            |      |
| 18     |                  | 159  | 85.6 | 2.87 | 80.5           | 81.8            | 83.5            | 85.7            | 87.6            | 89.2            | 90.9            |      |
| 19     |                  | 127  | 85.4 | 2.80 | 79.8           | 81.5            | 83.4            | 85.7            | 87.2            | 88.7            | 90.5            |      |
| 20     |                  | 98   | 85.5 | 2.79 | 80.5           | 81.9            | 83.8            | 85.5            | 87.2            | 89.3            | 91.2            |      |
| 21     |                  | 103  | 85.6 | 2.53 | 80.9           | 82.3            | 84.1            | 85.7            | 87.2            | 88.4            | 90.6            |      |
| 22     | 90               | 86.1 | 2.84 | 81.3 | 82.5           | 84.2            | 85.9            | 88.8            | 89.5            | 90.9            |                 |      |

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Table 4-2-2-2-42 Foot length (cm)

| Gender | Age group (year) | n    | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|------|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173  | 18.3 | 0.98 | 16.5           | 17.1            | 17.6            | 18.3            | 19.0            | 19.5            | 20.2            |      |
|        | 7                | 222  | 19.1 | 1.26 | 17.0           | 17.7            | 18.4            | 19.1            | 19.6            | 20.3            | 21.1            |      |
|        | 8                | 196  | 19.8 | 1.05 | 17.5           | 18.4            | 19.2            | 19.8            | 20.5            | 21.2            | 21.8            |      |
|        | 9                | 193  | 20.8 | 1.06 | 18.9           | 19.6            | 20.1            | 20.8            | 21.3            | 22.2            | 23.0            |      |
|        | 10               | 185  | 21.6 | 1.21 | 19.3           | 20.2            | 20.9            | 21.7            | 22.3            | 23.2            | 24.0            |      |
|        | 11               | 176  | 22.6 | 1.41 | 20.1           | 20.8            | 21.7            | 22.5            | 23.5            | 24.4            | 25.3            |      |
|        | 12               | 188  | 23.5 | 1.41 | 20.7           | 21.6            | 22.7            | 23.5            | 24.5            | 25.2            | 26.4            |      |
|        | 13               | 178  | 24.3 | 1.24 | 21.8           | 22.5            | 23.6            | 24.5            | 25.1            | 25.8            | 26.6            |      |
|        | 14               | 182  | 25.0 | 1.17 | 22.8           | 23.5            | 24.3            | 25.1            | 25.8            | 26.4            | 27.3            |      |
|        | 15               | 179  | 25.0 | 1.17 | 22.9           | 23.6            | 24.1            | 24.9            | 25.7            | 26.6            | 27.7            |      |
|        | 16               | 174  | 25.1 | 1.19 | 23.0           | 23.9            | 24.3            | 25.0            | 26.0            | 26.8            | 27.3            |      |
|        | 17               | 165  | 24.9 | 1.25 | 22.7           | 23.4            | 24.1            | 25.0            | 25.8            | 26.5            | 27.2            |      |
|        | 18               | 162  | 24.9 | 1.03 | 22.6           | 23.7            | 24.2            | 25.0            | 25.7            | 26.2            | 26.7            |      |
|        | 19               | 120  | 24.9 | 1.26 | 22.6           | 23.2            | 24.1            | 24.8            | 25.6            | 26.6            | 27.9            |      |
|        | 20               | 102  | 25.0 | 1.15 | 22.7           | 23.7            | 24.1            | 24.8            | 25.7            | 26.5            | 27.2            |      |
|        | 21               | 99   | 25.2 | 1.01 | 23.7           | 24.2            | 24.5            | 25.0            | 25.7            | 26.7            | 27.9            |      |
|        | 22               | 82   | 24.9 | 0.77 | 23.3           | 23.9            | 24.4            | 24.9            | 25.6            | 26.0            | 26.1            |      |
|        | F                | 6    | 155  | 18.1 | 1.19           | 16.3            | 17.0            | 17.5            | 18.1            | 18.7            | 19.3            | 20.0 |
|        |                  | 7    | 165  | 18.9 | 1.09           | 17.1            | 17.5            | 18.1            | 18.8            | 19.6            | 20.4            | 21.1 |
|        |                  | 8    | 150  | 19.7 | 1.18           | 17.2            | 18.3            | 19.0            | 19.7            | 20.5            | 21.1            | 21.7 |
|        |                  | 9    | 165  | 20.6 | 1.14           | 18.5            | 19.2            | 19.9            | 20.6            | 21.3            | 21.9            | 23.2 |
|        |                  | 10   | 163  | 21.4 | 1.09           | 19.4            | 20.2            | 20.7            | 21.3            | 22.1            | 22.9            | 23.8 |
| 11     |                  | 151  | 22.3 | 0.99 | 20.4           | 21.1            | 21.7            | 22.3            | 23.0            | 23.7            | 24.3            |      |
| 12     |                  | 172  | 22.6 | 0.90 | 20.7           | 21.5            | 21.9            | 22.5            | 23.2            | 23.8            | 24.4            |      |
| 13     |                  | 164  | 22.7 | 1.04 | 20.6           | 21.4            | 22.0            | 22.8            | 23.5            | 24.1            | 24.8            |      |
| 14     |                  | 151  | 22.7 | 1.00 | 20.7           | 21.4            | 22.0            | 22.7            | 23.3            | 24.0            | 24.6            |      |
| 15     |                  | 198  | 22.8 | 1.07 | 21.0           | 21.4            | 22.1            | 22.7            | 23.5            | 24.1            | 25.2            |      |
| 16     |                  | 184  | 22.7 | 0.97 | 21.0           | 21.5            | 22.1            | 22.8            | 23.4            | 23.9            | 24.5            |      |
| 17     |                  | 167  | 22.7 | 0.95 | 21.1           | 21.5            | 21.9            | 22.7            | 23.4            | 23.8            | 24.5            |      |
| 18     |                  | 159  | 22.7 | 1.03 | 20.7           | 21.4            | 22.1            | 22.7            | 23.4            | 24.2            | 24.7            |      |
| 19     |                  | 127  | 22.6 | 0.99 | 21.0           | 21.2            | 22.0            | 22.5            | 23.2            | 24.0            | 24.6            |      |
| 20     |                  | 98   | 22.6 | 1.09 | 20.5           | 21.2            | 21.8            | 22.5            | 23.4            | 24.1            | 24.7            |      |
| 21     |                  | 103  | 22.6 | 0.89 | 21.1           | 21.5            | 21.9            | 22.5            | 23.1            | 23.7            | 24.2            |      |
| 22     | 90               | 22.8 | 0.92 | 20.8 | 21.3           | 22.2            | 23.0            | 23.5            | 23.9            | 24.2            |                 |      |

Table 4-2-2-2-43 Weight (kg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 22.0 | 3.57  | 16.7           | 18.0            | 19.6            | 21.0            | 23.8            | 26.7            | 31.3            |      |
|        | 7                | 222 | 24.3 | 5.03  | 17.6           | 18.9            | 21.2            | 23.8            | 25.9            | 29.7            | 38.7            |      |
|        | 8                | 196 | 27.7 | 6.17  | 19.3           | 21.2            | 23.2            | 26.2            | 31.0            | 35.8            | 44.2            |      |
|        | 9                | 193 | 31.3 | 7.20  | 22.9           | 24.2            | 26.1            | 29.1            | 35.8            | 41.6            | 50.3            |      |
|        | 10               | 185 | 35.1 | 8.11  | 23.9           | 26.2            | 28.8            | 33.5            | 40.1            | 46.3            | 52.5            |      |
|        | 11               | 176 | 40.5 | 10.69 | 26.5           | 29.0            | 32.3            | 38.5            | 47.0            | 54.3            | 61.5            |      |
|        | 12               | 188 | 44.6 | 11.57 | 29.6           | 31.8            | 36.1            | 42.3            | 50.4            | 61.0            | 69.6            |      |
|        | 13               | 178 | 49.0 | 11.50 | 32.5           | 36.0            | 41.2            | 47.4            | 54.8            | 65.0            | 74.9            |      |
|        | 14               | 182 | 54.6 | 11.90 | 39.0           | 42.5            | 46.7            | 51.4            | 60.0            | 72.5            | 83.8            |      |
|        | 15               | 179 | 56.7 | 12.55 | 41.9           | 45.5            | 49.4            | 54.8            | 60.4            | 68.4            | 82.2            |      |
|        | 16               | 174 | 58.1 | 9.96  | 43.4           | 47.7            | 51.9            | 56.0            | 63.2            | 70.5            | 83.1            |      |
|        | 17               | 166 | 58.8 | 10.84 | 44.4           | 48.8            | 52.4            | 56.1            | 62.4            | 71.0            | 88.6            |      |
|        | 18               | 162 | 59.7 | 9.45  | 45.5           | 48.9            | 53.5            | 58.7            | 63.7            | 71.6            | 82.2            |      |
|        | 19               | 120 | 60.7 | 9.51  | 46.8           | 50.6            | 55.3            | 58.6            | 64.8            | 71.7            | 86.5            |      |
|        | 20               | 102 | 61.7 | 8.87  | 46.6           | 50.6            | 56.4            | 60.9            | 64.5            | 74.1            | 82.8            |      |
|        | 21               | 99  | 62.6 | 23.02 | 47.4           | 50.2            | 53.7            | 58.2            | 65.5            | 75.1            | 83.9            |      |
|        | 22               | 82  | 60.9 | 8.84  | 49.1           | 52.1            | 54.8            | 58.9            | 64.3            | 77.7            | 82.3            |      |
|        | F                | 6   | 155  | 21.0  | 3.15           | 16.7            | 17.6            | 18.7            | 20.5            | 22.5            | 25.1            | 28.2 |
|        |                  | 7   | 165  | 23.6  | 4.72           | 18.3            | 19.2            | 20.3            | 22.3            | 25.8            | 30.1            | 37.2 |
|        |                  | 8   | 150  | 26.0  | 5.25           | 18.3            | 21.0            | 22.4            | 24.8            | 28.2            | 34.0            | 39.2 |
|        |                  | 9   | 165  | 30.6  | 6.96           | 22.0            | 23.5            | 25.4            | 28.8            | 33.7            | 40.8            | 49.1 |
|        |                  | 10  | 163  | 34.5  | 8.80           | 23.8            | 25.2            | 28.1            | 33.2            | 38.2            | 45.2            | 55.5 |
| 11     |                  | 151 | 39.6 | 8.12  | 26.6           | 30.5            | 33.5            | 38.3            | 44.0            | 51.7            | 56.5            |      |
| 12     |                  | 172 | 42.5 | 8.12  | 30.9           | 33.9            | 37.1            | 41.4            | 46.9            | 52.3            | 60.9            |      |
| 13     |                  | 164 | 47.0 | 10.17 | 34.3           | 37.1            | 40.6            | 45.0            | 50.2            | 58.5            | 72.6            |      |
| 14     |                  | 151 | 47.2 | 8.60  | 35.1           | 37.6            | 41.7            | 46.0            | 50.8            | 58.7            | 65.0            |      |
| 15     |                  | 198 | 49.5 | 7.68  | 36.9           | 40.4            | 44.2            | 48.3            | 54.0            | 60.3            | 67.6            |      |
| 16     |                  | 184 | 49.2 | 7.98  | 39.9           | 41.8            | 43.7            | 47.5            | 52.4            | 59.4            | 71.5            |      |
| 17     |                  | 167 | 49.9 | 8.01  | 37.2           | 40.9            | 44.5            | 49.5            | 52.9            | 59.7            | 69.2            |      |
| 18     |                  | 159 | 49.3 | 6.82  | 37.5           | 40.6            | 44.9            | 49.2            | 52.1            | 57.0            | 63.1            |      |
| 19     |                  | 127 | 49.2 | 7.80  | 39.0           | 41.2            | 44.3            | 47.5            | 53.7            | 57.6            | 71.0            |      |
| 20     |                  | 98  | 48.7 | 7.41  | 38.7           | 41.2            | 43.7            | 47.5            | 51.7            | 57.7            | 65.0            |      |
| 21     |                  | 103 | 48.3 | 5.63  | 40.0           | 41.5            | 43.8            | 48.2            | 50.9            | 56.7            | 60.4            |      |
| 22     |                  | 90  | 48.6 | 6.68  | 36.5           | 42.2            | 43.8            | 47.2            | 53.1            | 57.6            | 64.6            |      |

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Table 4-2-2-2-44 BMI

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 15.5 | 1.79 | 13.1           | 13.5            | 14.3            | 15.2            | 16.2            | 18.0            | 20.2            |      |
|        | 7                | 222 | 15.7 | 2.38 | 12.7           | 13.5            | 14.2            | 15.2            | 16.5            | 17.9            | 23.3            |      |
|        | 8                | 196 | 16.7 | 2.87 | 13.1           | 13.8            | 14.6            | 15.9            | 17.8            | 21.3            | 23.8            |      |
|        | 9                | 193 | 17.2 | 3.14 | 13.6           | 14.1            | 14.8            | 16.2            | 18.7            | 22.1            | 25.3            |      |
|        | 10               | 185 | 17.8 | 3.25 | 13.7           | 14.4            | 15.4            | 16.6            | 19.4            | 22.4            | 24.6            |      |
|        | 11               | 176 | 18.9 | 3.73 | 14.0           | 15.0            | 16.0            | 17.8            | 20.8            | 24.1            | 26.1            |      |
|        | 12               | 188 | 19.1 | 3.86 | 14.4           | 15.1            | 16.3            | 17.9            | 20.9            | 25.0            | 28.1            |      |
|        | 13               | 178 | 18.8 | 3.50 | 14.2           | 15.4            | 16.2            | 18.0            | 20.5            | 23.9            | 28.0            |      |
|        | 14               | 182 | 19.7 | 3.61 | 14.8           | 15.9            | 17.3            | 18.8            | 21.1            | 25.2            | 28.4            |      |
|        | 15               | 179 | 19.8 | 4.50 | 15.3           | 16.4            | 17.6            | 18.9            | 20.8            | 23.4            | 28.9            |      |
|        | 16               | 174 | 19.9 | 2.93 | 15.8           | 17.0            | 18.0            | 19.2            | 21.4            | 23.8            | 28.0            |      |
|        | 17               | 166 | 20.0 | 3.26 | 15.6           | 16.8            | 17.8            | 19.3            | 21.1            | 23.7            | 29.9            |      |
|        | 18               | 162 | 20.3 | 3.05 | 16.0           | 17.0            | 18.4            | 19.8            | 21.7            | 24.2            | 27.9            |      |
|        | 19               | 120 | 20.8 | 3.00 | 16.6           | 17.4            | 18.8            | 20.3            | 22.3            | 23.9            | 30.2            |      |
|        | 20               | 102 | 21.1 | 2.68 | 16.0           | 17.7            | 19.5            | 20.8            | 22.8            | 24.3            | 27.8            |      |
|        | 21               | 99  | 21.0 | 6.84 | 15.9           | 17.5            | 18.6            | 20.1            | 22.3            | 24.1            | 27.1            |      |
|        | 22               | 82  | 21.0 | 2.84 | 17.2           | 17.8            | 18.9            | 20.6            | 21.9            | 26.1            | 27.7            |      |
|        | F                | 6   | 155  | 15.1 | 1.53           | 13.0            | 13.5            | 14.1            | 14.6            | 15.8            | 17.2            | 18.8 |
|        |                  | 7   | 165  | 15.6 | 2.39           | 12.6            | 13.4            | 14.0            | 14.9            | 16.5            | 18.8            | 22.2 |
|        |                  | 8   | 150  | 15.8 | 2.30           | 12.8            | 13.5            | 14.4            | 15.2            | 16.8            | 18.9            | 21.9 |
|        |                  | 9   | 165  | 16.7 | 2.91           | 13.2            | 13.7            | 14.7            | 15.9            | 18.5            | 20.3            | 23.4 |
|        |                  | 10  | 163  | 17.2 | 3.43           | 13.1            | 13.7            | 14.7            | 16.6            | 18.8            | 21.7            | 25.3 |
| 11     |                  | 151 | 18.1 | 3.09 | 13.7           | 14.7            | 15.8            | 17.4            | 19.7            | 22.6            | 25.4            |      |
| 12     |                  | 172 | 18.3 | 3.05 | 14.6           | 15.3            | 16.5            | 17.5            | 19.5            | 22.0            | 24.8            |      |
| 13     |                  | 164 | 19.3 | 3.58 | 14.7           | 16.1            | 17.3            | 18.5            | 20.6            | 23.9            | 29.8            |      |
| 14     |                  | 151 | 19.2 | 2.96 | 15.4           | 16.0            | 17.0            | 18.6            | 20.7            | 22.9            | 26.4            |      |
| 15     |                  | 198 | 19.6 | 2.49 | 15.4           | 17.0            | 17.9            | 19.2            | 20.8            | 23.2            | 25.1            |      |
| 16     |                  | 184 | 19.7 | 2.92 | 16.2           | 17.1            | 17.8            | 19.1            | 20.6            | 23.1            | 27.0            |      |
| 17     |                  | 167 | 20.1 | 2.95 | 16.0           | 17.0            | 18.5            | 19.6            | 21.2            | 24.5            | 27.7            |      |
| 18     |                  | 159 | 19.6 | 2.42 | 15.6           | 16.8            | 18.0            | 19.3            | 20.5            | 22.5            | 24.8            |      |
| 19     |                  | 127 | 19.7 | 2.80 | 15.9           | 16.8            | 18.0            | 19.2            | 21.0            | 23.6            | 27.2            |      |
| 20     |                  | 98  | 19.6 | 2.75 | 15.7           | 17.1            | 17.9            | 18.9            | 20.2            | 23.8            | 25.9            |      |
| 21     |                  | 103 | 19.3 | 1.88 | 16.0           | 17.0            | 18.1            | 19.1            | 20.3            | 22.2            | 23.8            |      |
| 22     |                  | 90  | 19.5 | 2.62 | 15.6           | 16.7            | 17.7            | 19.2            | 20.4            | 22.8            | 26.4            |      |

Table 4-2-2-45 Weight status according to the height for weight standard (%)

| Gender | Age group (year) | n            | Underweight | Slightly underweight | Normal      | Slightly overweight | Overweight |             |
|--------|------------------|--------------|-------------|----------------------|-------------|---------------------|------------|-------------|
| M      | 6                | 173          | 2.3         | 45.7                 | 38.2        | 5.2                 | 8.7        |             |
|        | 7                | 222          | 7.2         | 42.3                 | 38.7        | 3.6                 | 8.1        |             |
|        | 8                | 196          | 3.6         | 38.8                 | 35.2        | 4.6                 | 17.9       |             |
|        | 9                | 193          | 3.6         | 36.8                 | 34.2        | 6.2                 | 19.2       |             |
|        | 10               | 185          | 4.9         | 35.7                 | 33.5        | 4.9                 | 21.1       |             |
|        | 11               | 176          | 5.7         | 39.2                 | 31.8        | 7.4                 | 15.9       |             |
|        | 12               | 187          | 8.0         | 43.6                 | 26.6        | 3.7                 | 18.1       |             |
|        | 13               | 178          | 28.8        | 45.8                 | 14.7        | 1.1                 | 9.6        |             |
|        | 14               | 182          | 17.6        | 53.8                 | 12.6        | 3.8                 | 12.1       |             |
|        | 15               | 179          | 13.4        | 57.5                 | 16.8        | 3.9                 | 8.4        |             |
|        | 16               | 174          | 12.6        | 56.9                 | 19.0        | 2.9                 | 8.6        |             |
|        | 17               | 166          | 13.3        | 54.8                 | 21.7        | 1.2                 | 9.0        |             |
|        | 18               | 162          | 18.5        | 38.9                 | 29.6        | 3.1                 | 9.9        |             |
|        | 19               | 120          | 14.2        | 35.8                 | 35.0        | 5.8                 | 9.2        |             |
|        | 20               | 102          | 9.8         | 30.4                 | 39.2        | 6.9                 | 13.7       |             |
|        | 21               | 99           | 18.2        | 39.4                 | 23.2        | 9.1                 | 10.1       |             |
|        | 22               | 82           | 11.0        | 36.6                 | 30.5        | 4.9                 | 17.1       |             |
|        |                  | <b>Total</b> | <b>2776</b> | <b>10.9</b>          | <b>43.8</b> | <b>28.1</b>         | <b>4.4</b> | <b>12.8</b> |
|        | F                | 6            | 155         | 0.6                  | 51.0        | 35.5                | 7.7        | 5.2         |
|        |                  | 7            | 165         | 3.6                  | 46.7        | 29.7                | 7.3        | 12.7        |
|        |                  | 8            | 150         | 6.7                  | 39.3        | 36.0                | 8.0        | 10.0        |
|        |                  | 9            | 165         | 8.5                  | 40.6        | 29.7                | 7.9        | 13.3        |
| 10     |                  | 161          | 9.2         | 30.7                 | 42.9        | 3.1                 | 14.1       |             |
| 11     |                  | 151          | 5.3         | 24.5                 | 47.0        | 6.6                 | 16.6       |             |
| 12     |                  | 172          | 7.6         | 51.7                 | 28.5        | 4.7                 | 7.6        |             |
| 13     |                  | 164          | 4.9         | 43.9                 | 32.3        | 4.3                 | 14.6       |             |
| 14     |                  | 151          | 4.6         | 43.0                 | 34.4        | 5.3                 | 12.6       |             |
| 15     |                  | 198          | 7.1         | 53.0                 | 30.3        | 4.5                 | 5.1        |             |
| 16     |                  | 184          | 6.0         | 53.8                 | 32.6        | 2.7                 | 4.9        |             |
| 17     |                  | 167          | 15.6        | 47.3                 | 26.9        | 3.0                 | 7.2        |             |
| 18     |                  | 159          | 15.7        | 57.2                 | 23.9        | 0.6                 | 2.5        |             |
| 19     |                  | 127          | 15.7        | 52.8                 | 24.4        | 2.4                 | 4.7        |             |
| 20     |                  | 98           | 14.3        | 58.2                 | 18.4        | 5.1                 | 4.1        |             |
| 21     |                  | 103          | 14.6        | 61.2                 | 21.4        | 2.9                 | 0.0        |             |
| 22     |                  | 90           | 17.8        | 53.3                 | 23.3        | 2.2                 | 3.3        |             |
|        |                  | <b>Total</b> | <b>2560</b> | <b>8.7</b>           | <b>47.0</b> | <b>31.1</b>         | <b>4.7</b> | <b>8.5</b>  |

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Table 4-2-2-2-46 Chest circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 57.8 | 3.94 | 51.9           | 53.5            | 55.4            | 57.4            | 59.5            | 62.6            | 68.4            |      |
|        | 7                | 222 | 59.6 | 5.04 | 53.0           | 54.4            | 57.0            | 59.0            | 61.1            | 64.6            | 74.2            |      |
|        | 8                | 196 | 62.8 | 5.84 | 55.2           | 56.5            | 58.3            | 61.5            | 66.0            | 71.2            | 77.3            |      |
|        | 9                | 193 | 65.7 | 6.90 | 57.3           | 59.0            | 60.6            | 63.6            | 69.0            | 76.1            | 83.9            |      |
|        | 10               | 185 | 68.3 | 7.29 | 58.1           | 60.5            | 62.9            | 66.8            | 72.4            | 79.4            | 84.5            |      |
|        | 11               | 176 | 71.9 | 8.19 | 61.5           | 62.8            | 65.5            | 70.2            | 76.6            | 83.1            | 88.1            |      |
|        | 12               | 188 | 74.1 | 8.59 | 62.8           | 64.9            | 67.5            | 72.6            | 77.4            | 86.2            | 93.9            |      |
|        | 13               | 178 | 75.9 | 8.13 | 63.6           | 66.2            | 70.5            | 74.6            | 80.0            | 88.2            | 94.8            |      |
|        | 14               | 181 | 79.6 | 7.87 | 67.3           | 71.4            | 74.4            | 78.0            | 83.6            | 90.6            | 97.5            |      |
|        | 15               | 179 | 80.8 | 6.17 | 70.9           | 74.0            | 76.7            | 80.3            | 83.5            | 87.3            | 98.3            |      |
|        | 16               | 174 | 82.4 | 6.03 | 72.7           | 75.5            | 78.3            | 82.0            | 85.4            | 90.5            | 98.4            |      |
|        | 17               | 166 | 83.3 | 6.95 | 73.2           | 76.5            | 79.0            | 82.2            | 86.2            | 90.0            | 103.0           |      |
|        | 18               | 162 | 83.8 | 5.99 | 74.9           | 77.5            | 80.0            | 82.9            | 87.0            | 92.5            | 99.1            |      |
|        | 19               | 120 | 85.5 | 5.72 | 77.4           | 79.0            | 82.3            | 84.5            | 88.0            | 92.7            | 98.6            |      |
|        | 20               | 102 | 86.3 | 6.05 | 74.8           | 79.9            | 82.5            | 85.8            | 89.5            | 95.0            | 101.7           |      |
|        | 21               | 99  | 85.6 | 5.71 | 76.0           | 78.9            | 81.0            | 85.0            | 89.1            | 94.0            | 98.9            |      |
|        | 22               | 82  | 86.8 | 5.70 | 77.6           | 80.2            | 82.8            | 86.2            | 90.2            | 95.5            | 100.9           |      |
|        | F                | 6   | 155  | 56.5 | 3.73           | 51.4            | 52.4            | 53.9            | 56.0            | 58.1            | 61.4            | 66.7 |
|        |                  | 7   | 165  | 59.2 | 5.68           | 52.0            | 53.7            | 56.0            | 58.0            | 61.0            | 66.0            | 77.1 |
|        |                  | 8   | 150  | 61.0 | 5.57           | 53.3            | 54.8            | 57.5            | 60.0            | 63.0            | 69.5            | 75.0 |
|        |                  | 9   | 165  | 65.1 | 7.06           | 55.2            | 57.7            | 60.0            | 64.0            | 68.9            | 75.5            | 82.4 |
|        |                  | 10  | 163  | 68.1 | 7.44           | 57.5            | 59.5            | 63.0            | 66.4            | 73.0            | 77.9            | 85.0 |
| 11     |                  | 151 | 72.1 | 7.87 | 58.8           | 64.0            | 67.0            | 71.3            | 76.5            | 84.0            | 87.4            |      |
| 12     |                  | 171 | 74.9 | 6.89 | 65.0           | 67.8            | 70.0            | 73.5            | 78.3            | 83.5            | 91.7            |      |
| 13     |                  | 164 | 77.7 | 7.33 | 66.0           | 70.5            | 73.5            | 76.5            | 80.8            | 88.3            | 94.7            |      |
| 14     |                  | 151 | 77.5 | 6.35 | 68.0           | 70.6            | 73.0            | 76.5            | 80.0            | 85.5            | 92.5            |      |
| 15     |                  | 198 | 79.0 | 6.00 | 69.4           | 71.6            | 75.0            | 78.9            | 82.1            | 87.4            | 92.0            |      |
| 16     |                  | 184 | 79.1 | 5.81 | 71.7           | 73.4            | 75.1            | 77.8            | 81.9            | 87.0            | 94.8            |      |
| 17     |                  | 167 | 80.2 | 5.99 | 71.0           | 73.1            | 76.5            | 79.5            | 83.0            | 89.4            | 95.0            |      |
| 18     |                  | 159 | 79.3 | 5.09 | 71.2           | 73.5            | 75.5            | 78.5            | 81.8            | 87.0            | 89.0            |      |
| 19     |                  | 127 | 78.8 | 5.75 | 70.8           | 72.9            | 75.0            | 77.8            | 81.3            | 86.9            | 92.5            |      |
| 20     |                  | 98  | 79.2 | 5.59 | 72.3           | 73.6            | 75.4            | 77.9            | 81.6            | 87.5            | 92.4            |      |
| 21     |                  | 103 | 78.2 | 4.55 | 71.3           | 72.9            | 74.8            | 77.6            | 80.6            | 84.1            | 87.8            |      |
| 22     |                  | 90  | 79.6 | 4.89 | 70.8           | 73.6            | 75.9            | 79.1            | 82.2            | 87.2            | 90.0            |      |

Table 4-2-2-2-47 Waist circumference (cm)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 53.4 | 5.26  | 46.4           | 48.0            | 50.3            | 52.4            | 55.0            | 62.2            | 67.2            |      |
|        | 7                | 222 | 55.1 | 6.53  | 47.0           | 49.2            | 51.4            | 54.0            | 56.9            | 61.5            | 73.8            |      |
|        | 8                | 196 | 58.8 | 7.96  | 48.0           | 50.4            | 53.0            | 56.8            | 62.2            | 70.6            | 77.0            |      |
|        | 9                | 193 | 61.2 | 9.20  | 50.4           | 52.2            | 54.3            | 58.5            | 67.1            | 76.3            | 83.4            |      |
|        | 10               | 185 | 63.3 | 9.07  | 51.0           | 53.9            | 56.0            | 60.2            | 69.3            | 77.8            | 83.3            |      |
|        | 11               | 176 | 67.6 | 10.60 | 54.0           | 55.9            | 59.3            | 64.5            | 73.5            | 82.4            | 89.2            |      |
|        | 12               | 188 | 68.1 | 10.90 | 54.5           | 57.0            | 60.3            | 64.7            | 74.5            | 84.6            | 93.4            |      |
|        | 13               | 178 | 67.6 | 9.91  | 54.5           | 57.2            | 60.9            | 65.0            | 72.0            | 81.6            | 94.0            |      |
|        | 14               | 182 | 69.8 | 10.47 | 56.6           | 60.2            | 62.7            | 66.2            | 73.8            | 85.4            | 96.2            |      |
|        | 15               | 179 | 69.7 | 8.16  | 59.9           | 62.0            | 64.2            | 67.5            | 72.5            | 80.2            | 92.1            |      |
|        | 16               | 174 | 70.8 | 8.17  | 59.6           | 62.5            | 65.4            | 69.4            | 74.2            | 83.3            | 92.4            |      |
|        | 17               | 166 | 71.4 | 8.92  | 60.7           | 63.2            | 66.2            | 69.1            | 74.2            | 83.1            | 101.9           |      |
|        | 18               | 162 | 72.1 | 8.09  | 61.7           | 63.9            | 67.1            | 70.4            | 74.6            | 82.7            | 93.7            |      |
|        | 19               | 120 | 73.8 | 8.12  | 63.1           | 66.0            | 67.8            | 71.8            | 78.1            | 83.0            | 94.8            |      |
|        | 20               | 102 | 74.0 | 7.83  | 59.7           | 64.0            | 69.1            | 72.3            | 78.1            | 84.9            | 90.3            |      |
|        | 21               | 99  | 73.2 | 7.44  | 62.3           | 65.5            | 68.2            | 71.7            | 78.4            | 84.2            | 91.8            |      |
|        | 22               | 82  | 74.9 | 7.20  | 64.0           | 67.3            | 70.1            | 73.5            | 78.6            | 87.2            | 93.1            |      |
|        | F                | 6   | 154  | 51.5  | 4.40           | 46.0            | 46.6            | 48.2            | 51.0            | 53.5            | 56.2            | 62.6 |
|        |                  | 7   | 165  | 54.0  | 6.47           | 46.5            | 48.5            | 50.0            | 52.0            | 56.4            | 63.6            | 71.2 |
|        |                  | 8   | 150  | 55.5  | 6.39           | 46.8            | 49.2            | 51.7            | 54.0            | 57.1            | 64.8            | 73.9 |
|        |                  | 9   | 165  | 58.7  | 7.80           | 48.0            | 50.1            | 52.5            | 57.0            | 63.5            | 71.0            | 75.9 |
|        |                  | 10  | 163  | 60.5  | 8.59           | 50.0            | 51.6            | 53.6            | 59.4            | 65.0            | 71.8            | 80.4 |
| 11     |                  | 151 | 63.8 | 8.37  | 52.0           | 55.0            | 58.4            | 62.0            | 67.5            | 75.9            | 84.6            |      |
| 12     |                  | 172 | 64.3 | 7.27  | 55.0           | 57.0            | 59.6            | 63.0            | 67.7            | 73.4            | 82.0            |      |
| 13     |                  | 164 | 65.8 | 8.52  | 54.8           | 57.5            | 60.0            | 64.2            | 68.9            | 78.0            | 87.1            |      |
| 14     |                  | 151 | 65.5 | 7.76  | 55.8           | 57.5            | 60.2            | 64.0            | 68.8            | 75.0            | 85.6            |      |
| 15     |                  | 198 | 67.1 | 6.69  | 56.8           | 59.9            | 62.5            | 66.0            | 71.5            | 77.1            | 82.5            |      |
| 16     |                  | 184 | 66.4 | 6.70  | 57.7           | 59.4            | 62.0            | 65.0            | 69.1            | 74.5            | 81.6            |      |
| 17     |                  | 167 | 67.5 | 6.95  | 57.5           | 59.1            | 63.0            | 66.5            | 71.5            | 76.0            | 85.3            |      |
| 18     |                  | 159 | 66.3 | 5.94  | 57.2           | 60.0            | 62.5            | 66.0            | 68.5            | 73.3            | 79.9            |      |
| 19     |                  | 127 | 66.1 | 6.82  | 56.7           | 59.7            | 61.9            | 64.5            | 68.5            | 74.8            | 84.6            |      |
| 20     |                  | 98  | 66.0 | 6.68  | 57.3           | 59.1            | 61.2            | 64.7            | 69.5            | 75.1            | 80.2            |      |
| 21     |                  | 103 | 65.0 | 5.36  | 57.0           | 58.4            | 61.1            | 64.4            | 68.0            | 73.1            | 78.8            |      |
| 22     |                  | 90  | 65.6 | 6.17  | 56.1           | 59.8            | 61.5            | 64.9            | 69.5            | 73.9            | 80.5            |      |

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Table 4-2-2-2-48 Hip circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 60.8 | 4.82 | 52.7           | 55.2            | 57.8            | 60.0            | 63.5            | 68.1            | 72.4            |      |
|        | 7                | 222 | 63.2 | 5.79 | 54.6           | 56.4            | 59.5            | 62.5            | 65.5            | 70.1            | 79.3            |      |
|        | 8                | 196 | 67.0 | 6.86 | 57.0           | 58.9            | 62.0            | 66.0            | 71.4            | 77.2            | 81.4            |      |
|        | 9                | 193 | 69.8 | 7.06 | 60.7           | 62.0            | 64.0            | 67.7            | 74.8            | 80.1            | 86.1            |      |
|        | 10               | 185 | 72.9 | 7.25 | 61.8           | 64.3            | 67.2            | 71.8            | 77.9            | 83.8            | 86.9            |      |
|        | 11               | 176 | 77.1 | 8.36 | 64.7           | 66.8            | 70.6            | 76.5            | 83.0            | 87.8            | 92.6            |      |
|        | 12               | 187 | 79.5 | 8.82 | 66.0           | 69.0            | 72.8            | 78.1            | 84.3            | 92.6            | 98.4            |      |
|        | 13               | 178 | 81.6 | 8.14 | 67.5           | 72.0            | 76.1            | 81.0            | 86.0            | 91.9            | 101.1           |      |
|        | 14               | 182 | 85.2 | 7.89 | 73.6           | 76.9            | 79.3            | 84.0            | 89.2            | 97.0            | 105.8           |      |
|        | 15               | 179 | 86.1 | 6.33 | 76.6           | 78.9            | 82.0            | 85.0            | 89.6            | 93.7            | 101.0           |      |
|        | 16               | 174 | 87.3 | 6.50 | 78.0           | 79.9            | 82.8            | 86.5            | 90.8            | 95.6            | 102.8           |      |
|        | 17               | 166 | 87.6 | 7.05 | 78.6           | 80.4            | 83.4            | 86.1            | 90.2            | 96.0            | 107.0           |      |
|        | 18               | 162 | 88.6 | 6.11 | 78.5           | 81.9            | 84.8            | 88.0            | 91.0            | 96.1            | 104.3           |      |
|        | 19               | 120 | 88.4 | 6.08 | 79.2           | 81.6            | 85.0            | 87.4            | 90.8            | 95.5            | 105.6           |      |
|        | 20               | 102 | 89.1 | 5.57 | 80.7           | 82.7            | 85.3            | 88.5            | 91.6            | 97.1            | 101.6           |      |
|        | 21               | 99  | 88.2 | 5.25 | 79.2           | 82.2            | 84.5            | 87.1            | 91.2            | 93.9            | 99.8            |      |
|        | 22               | 82  | 88.2 | 4.69 | 81.6           | 83.0            | 85.1            | 87.9            | 90.0            | 97.1            | 98.8            |      |
|        | F                | 6   | 155  | 60.2 | 4.30           | 53.3            | 55.1            | 57.5            | 59.5            | 62.6            | 66.0            | 69.6 |
|        |                  | 7   | 165  | 63.2 | 5.73           | 56.1            | 57.4            | 59.1            | 62.0            | 66.0            | 71.1            | 76.9 |
|        |                  | 8   | 150  | 65.6 | 5.83           | 55.9            | 59.5            | 61.7            | 65.0            | 68.0            | 73.9            | 79.7 |
|        |                  | 9   | 165  | 70.0 | 6.76           | 60.6            | 62.5            | 65.0            | 68.5            | 74.7            | 79.6            | 85.5 |
|        |                  | 10  | 161  | 73.3 | 8.18           | 61.3            | 64.1            | 67.5            | 72.5            | 78.5            | 83.9            | 89.7 |
| 11     |                  | 151 | 78.4 | 7.11 | 66.3           | 70.0            | 72.7            | 77.5            | 83.2            | 87.5            | 93.9            |      |
| 12     |                  | 172 | 81.7 | 6.92 | 70.6           | 73.8            | 77.0            | 81.0            | 85.9            | 90.1            | 96.6            |      |
| 13     |                  | 164 | 85.3 | 7.40 | 72.9           | 78.0            | 80.6            | 84.5            | 89.0            | 94.0            | 103.6           |      |
| 14     |                  | 151 | 85.6 | 6.74 | 74.5           | 78.8            | 82.0            | 85.0            | 88.0            | 94.4            | 104.3           |      |
| 15     |                  | 198 | 87.8 | 5.51 | 78.0           | 81.0            | 83.9            | 87.5            | 90.9            | 96.0            | 99.5            |      |
| 16     |                  | 184 | 87.8 | 6.11 | 79.5           | 82.0            | 84.0            | 86.5            | 90.6            | 96.5            | 104.2           |      |
| 17     |                  | 167 | 88.6 | 6.10 | 79.2           | 81.0            | 84.5            | 88.0            | 91.4            | 96.6            | 103.0           |      |
| 18     |                  | 159 | 87.9 | 5.23 | 79.4           | 81.5            | 84.5            | 88.0            | 90.1            | 94.0            | 99.3            |      |
| 19     |                  | 127 | 87.7 | 5.57 | 80.0           | 82.1            | 83.5            | 87.0            | 91.0            | 94.6            | 99.8            |      |
| 20     |                  | 98  | 86.9 | 5.79 | 79.3           | 81.1            | 83.0            | 85.5            | 90.5            | 94.1            | 98.6            |      |
| 21     |                  | 103 | 86.7 | 3.98 | 79.9           | 81.7            | 83.9            | 86.2            | 89.0            | 92.5            | 96.7            |      |
| 22     |                  | 90  | 86.8 | 4.88 | 78.2           | 81.2            | 83.4            | 86.3            | 89.6            | 93.4            | 97.2            |      |

Table 4-2-2-2-49 Waist to Hip Ratio (WHR)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |       |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| M      | 6                | 173 | 0.878 | 0.039 | 0.816          | 0.836           | 0.853           | 0.877           | 0.897           | 0.926           | 0.961           |       |
|        | 7                | 222 | 0.871 | 0.039 | 0.804          | 0.826           | 0.847           | 0.869           | 0.891           | 0.919           | 0.946           |       |
|        | 8                | 196 | 0.876 | 0.044 | 0.801          | 0.818           | 0.846           | 0.871           | 0.901           | 0.934           | 0.967           |       |
|        | 9                | 193 | 0.874 | 0.052 | 0.804          | 0.817           | 0.836           | 0.862           | 0.904           | 0.953           | 0.995           |       |
|        | 10               | 185 | 0.866 | 0.052 | 0.791          | 0.806           | 0.826           | 0.857           | 0.898           | 0.943           | 0.993           |       |
|        | 11               | 176 | 0.873 | 0.054 | 0.787          | 0.808           | 0.828           | 0.867           | 0.906           | 0.954           | 0.988           |       |
|        | 12               | 188 | 0.870 | 0.226 | 0.776          | 0.789           | 0.808           | 0.842           | 0.889           | 0.945           | 0.985           |       |
|        | 13               | 178 | 0.826 | 0.055 | 0.756          | 0.769           | 0.790           | 0.814           | 0.848           | 0.903           | 0.971           |       |
|        | 14               | 182 | 0.816 | 0.054 | 0.734          | 0.759           | 0.780           | 0.807           | 0.836           | 0.900           | 0.949           |       |
|        | 15               | 179 | 0.808 | 0.045 | 0.735          | 0.760           | 0.779           | 0.798           | 0.829           | 0.874           | 0.915           |       |
|        | 16               | 174 | 0.809 | 0.043 | 0.742          | 0.758           | 0.781           | 0.806           | 0.829           | 0.870           | 0.909           |       |
|        | 17               | 166 | 0.813 | 0.051 | 0.751          | 0.763           | 0.782           | 0.804           | 0.831           | 0.878           | 0.953           |       |
|        | 18               | 162 | 0.813 | 0.044 | 0.741          | 0.766           | 0.784           | 0.807           | 0.830           | 0.874           | 0.907           |       |
|        | 19               | 120 | 0.834 | 0.058 | 0.760          | 0.779           | 0.801           | 0.824           | 0.862           | 0.890           | 0.932           |       |
|        | 20               | 102 | 0.829 | 0.051 | 0.720          | 0.776           | 0.790           | 0.827           | 0.864           | 0.896           | 0.927           |       |
|        | 21               | 99  | 0.829 | 0.050 | 0.748          | 0.770           | 0.787           | 0.830           | 0.856           | 0.901           | 0.925           |       |
|        | 22               | 82  | 0.847 | 0.042 | 0.776          | 0.795           | 0.821           | 0.841           | 0.868           | 0.915           | 0.955           |       |
|        | F                | 6   | 155   | 0.852 | 0.054          | 0.780           | 0.808           | 0.833           | 0.856           | 0.875           | 0.898           | 0.931 |
|        |                  | 7   | 165   | 0.853 | 0.041          | 0.782           | 0.801           | 0.818           | 0.850           | 0.882           | 0.904           | 0.946 |
|        |                  | 8   | 150   | 0.846 | 0.045          | 0.763           | 0.793           | 0.817           | 0.840           | 0.872           | 0.912           | 0.939 |
|        |                  | 9   | 165   | 0.836 | 0.047          | 0.750           | 0.779           | 0.805           | 0.833           | 0.864           | 0.899           | 0.945 |
|        |                  | 10  | 163   | 0.846 | 0.206          | 0.745           | 0.768           | 0.787           | 0.816           | 0.850           | 0.892           | 0.930 |
| 11     |                  | 151 | 0.812 | 0.057 | 0.744          | 0.756           | 0.776           | 0.797           | 0.840           | 0.905           | 0.959           |       |
| 12     |                  | 172 | 0.786 | 0.041 | 0.716          | 0.736           | 0.758           | 0.786           | 0.807           | 0.842           | 0.886           |       |
| 13     |                  | 164 | 0.771 | 0.065 | 0.686          | 0.712           | 0.737           | 0.758           | 0.799           | 0.836           | 0.889           |       |
| 14     |                  | 151 | 0.765 | 0.056 | 0.682          | 0.707           | 0.728           | 0.754           | 0.790           | 0.828           | 0.876           |       |
| 15     |                  | 198 | 0.764 | 0.046 | 0.682          | 0.712           | 0.733           | 0.758           | 0.790           | 0.829           | 0.867           |       |
| 16     |                  | 184 | 0.755 | 0.040 | 0.694          | 0.707           | 0.726           | 0.750           | 0.783           | 0.802           | 0.839           |       |
| 17     |                  | 167 | 0.761 | 0.047 | 0.685          | 0.705           | 0.729           | 0.757           | 0.788           | 0.827           | 0.884           |       |
| 18     |                  | 159 | 0.753 | 0.040 | 0.675          | 0.702           | 0.724           | 0.753           | 0.782           | 0.798           | 0.836           |       |
| 19     |                  | 127 | 0.753 | 0.043 | 0.685          | 0.705           | 0.725           | 0.748           | 0.773           | 0.813           | 0.866           |       |
| 20     |                  | 98  | 0.759 | 0.041 | 0.698          | 0.710           | 0.728           | 0.757           | 0.783           | 0.807           | 0.846           |       |
| 21     |                  | 103 | 0.749 | 0.044 | 0.683          | 0.698           | 0.714           | 0.744           | 0.783           | 0.801           | 0.825           |       |
| 22     |                  | 90  | 0.755 | 0.037 | 0.674          | 0.715           | 0.735           | 0.755           | 0.772           | 0.802           | 0.842           |       |

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Table 4-2-2-2-50 Shoulder width (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 26.1 | 1.30 | 23.5           | 24.2            | 25.2            | 26.2            | 27.0            | 27.9            | 28.5            |      |
|        | 7                | 221 | 26.9 | 1.41 | 24.4           | 25.2            | 26.0            | 26.9            | 27.8            | 28.5            | 30.1            |      |
|        | 8                | 196 | 27.9 | 1.38 | 25.4           | 26.2            | 27.0            | 27.8            | 29.0            | 29.8            | 30.5            |      |
|        | 9                | 192 | 29.2 | 1.54 | 26.5           | 27.2            | 28.2            | 29.0            | 30.3            | 31.2            | 32.6            |      |
|        | 10               | 185 | 30.4 | 1.91 | 27.0           | 28.0            | 29.2            | 30.5            | 31.7            | 32.7            | 34.0            |      |
|        | 11               | 176 | 31.7 | 2.14 | 28.3           | 29.2            | 30.3            | 31.5            | 33.1            | 34.5            | 35.7            |      |
|        | 12               | 188 | 33.1 | 2.20 | 29.1           | 30.0            | 31.4            | 33.3            | 34.7            | 35.9            | 37.3            |      |
|        | 13               | 178 | 35.0 | 2.50 | 30.6           | 31.9            | 33.2            | 35.0            | 36.7            | 37.8            | 40.0            |      |
|        | 14               | 182 | 36.7 | 2.12 | 32.3           | 33.9            | 35.4            | 36.5            | 38.2            | 39.5            | 40.0            |      |
|        | 15               | 179 | 37.5 | 2.00 | 34.4           | 35.5            | 36.4            | 37.5            | 38.6            | 40.0            | 41.1            |      |
|        | 16               | 174 | 38.1 | 2.04 | 33.6           | 36.0            | 37.0            | 38.3            | 39.4            | 40.7            | 41.7            |      |
|        | 17               | 166 | 38.4 | 2.23 | 33.6           | 36.0            | 37.3            | 38.5            | 39.8            | 41.0            | 41.9            |      |
|        | 18               | 162 | 38.8 | 1.93 | 34.7           | 36.5            | 37.4            | 38.9            | 40.0            | 41.3            | 42.2            |      |
|        | 19               | 120 | 39.0 | 1.97 | 35.4           | 36.6            | 37.7            | 39.0            | 40.2            | 41.5            | 42.6            |      |
|        | 20               | 102 | 39.3 | 2.13 | 35.8           | 37.3            | 38.5            | 39.5            | 40.5            | 41.3            | 41.8            |      |
|        | 21               | 99  | 39.5 | 1.51 | 36.5           | 37.6            | 38.4            | 39.5            | 40.5            | 41.5            | 42.8            |      |
|        | 22               | 82  | 39.4 | 1.28 | 36.8           | 37.6            | 38.8            | 39.8            | 40.2            | 40.8            | 41.7            |      |
|        | F                | 6   | 154  | 25.3 | 1.21           | 22.7            | 23.9            | 24.6            | 25.3            | 26.2            | 27.0            | 27.5 |
|        |                  | 7   | 164  | 26.3 | 1.57           | 23.6            | 24.3            | 25.2            | 26.1            | 27.3            | 28.4            | 29.7 |
|        |                  | 8   | 149  | 27.3 | 1.52           | 24.1            | 25.5            | 26.3            | 27.3            | 28.3            | 29.2            | 29.9 |
|        |                  | 9   | 165  | 28.8 | 1.69           | 25.3            | 26.6            | 27.6            | 28.7            | 29.8            | 31.0            | 32.0 |
|        |                  | 10  | 163  | 29.8 | 1.99           | 26.5            | 27.4            | 28.7            | 29.6            | 31.0            | 32.2            | 33.7 |
| 11     |                  | 151 | 31.5 | 1.76 | 28.0           | 29.0            | 30.3            | 31.3            | 32.7            | 34.0            | 34.8            |      |
| 12     |                  | 172 | 32.5 | 1.85 | 29.0           | 30.8            | 31.3            | 32.5            | 33.6            | 34.5            | 36.3            |      |
| 13     |                  | 164 | 33.4 | 1.84 | 30.5           | 31.1            | 32.3            | 33.5            | 34.6            | 35.4            | 36.7            |      |
| 14     |                  | 151 | 33.6 | 1.61 | 30.2           | 31.7            | 32.7            | 33.7            | 34.6            | 35.6            | 36.6            |      |
| 15     |                  | 198 | 34.0 | 1.76 | 31.0           | 31.9            | 32.8            | 34.1            | 35.1            | 36.1            | 37.2            |      |
| 16     |                  | 184 | 34.2 | 1.67 | 31.1           | 32.1            | 32.9            | 34.1            | 35.3            | 36.3            | 37.3            |      |
| 17     |                  | 167 | 34.1 | 1.48 | 31.6           | 32.3            | 33.0            | 34.0            | 35.4            | 36.0            | 37.2            |      |
| 18     |                  | 159 | 34.3 | 1.87 | 31.2           | 32.2            | 33.1            | 34.3            | 35.5            | 36.5            | 37.3            |      |
| 19     |                  | 127 | 34.5 | 1.77 | 30.6           | 32.2            | 33.2            | 34.6            | 35.6            | 36.6            | 37.6            |      |
| 20     |                  | 98  | 34.5 | 1.60 | 31.1           | 32.3            | 33.5            | 34.6            | 35.7            | 36.5            | 37.2            |      |
| 21     |                  | 103 | 34.7 | 1.57 | 31.8           | 32.5            | 33.6            | 34.8            | 35.6            | 36.3            | 38.1            |      |
| 22     |                  | 90  | 34.7 | 1.54 | 31.7           | 32.6            | 33.6            | 34.8            | 35.6            | 36.7            | 38.0            |      |

Table 4-2-2-2-51 Pelvis width (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 18.7 | 0.98 | 17.0           | 17.4            | 18.0            | 18.7            | 19.3            | 20.2            | 20.6            |      |
|        | 7                | 222 | 19.3 | 1.41 | 17.3           | 17.7            | 18.4            | 19.2            | 20.0            | 20.7            | 22.3            |      |
|        | 8                | 196 | 19.9 | 1.26 | 17.6           | 18.3            | 19.1            | 19.9            | 20.7            | 21.5            | 22.3            |      |
|        | 9                | 193 | 20.9 | 1.53 | 18.2           | 19.1            | 19.9            | 20.7            | 21.8            | 23.0            | 24.1            |      |
|        | 10               | 185 | 21.8 | 1.58 | 18.9           | 20.0            | 20.7            | 21.8            | 22.8            | 24.0            | 24.9            |      |
|        | 11               | 176 | 22.8 | 1.72 | 20.0           | 20.7            | 21.4            | 22.8            | 24.0            | 25.0            | 26.4            |      |
|        | 12               | 188 | 23.7 | 1.89 | 20.6           | 21.2            | 22.3            | 23.4            | 25.0            | 26.2            | 27.3            |      |
|        | 13               | 178 | 24.8 | 2.01 | 21.4           | 22.2            | 23.5            | 24.8            | 26.0            | 27.3            | 28.5            |      |
|        | 14               | 182 | 25.8 | 1.81 | 22.5           | 23.5            | 24.6            | 25.8            | 27.0            | 28.0            | 29.7            |      |
|        | 15               | 179 | 26.3 | 1.55 | 23.5           | 24.2            | 25.3            | 26.2            | 27.4            | 28.2            | 29.5            |      |
|        | 16               | 174 | 26.4 | 1.55 | 23.8           | 24.4            | 25.3            | 26.4            | 27.3            | 28.3            | 29.4            |      |
|        | 17               | 166 | 26.7 | 1.61 | 23.8           | 24.9            | 25.5            | 26.6            | 27.8            | 28.5            | 30.0            |      |
|        | 18               | 162 | 26.8 | 1.58 | 24.0           | 24.9            | 25.9            | 26.7            | 27.6            | 28.9            | 30.3            |      |
|        | 19               | 120 | 27.1 | 1.66 | 24.3           | 24.9            | 25.8            | 27.1            | 28.2            | 29.2            | 30.5            |      |
|        | 20               | 102 | 27.1 | 1.59 | 24.8           | 25.3            | 26.2            | 27.0            | 28.2            | 29.0            | 30.4            |      |
|        | 21               | 99  | 27.4 | 1.52 | 25.0           | 25.2            | 26.2            | 27.2            | 28.3            | 29.6            | 30.2            |      |
|        | 22               | 82  | 27.5 | 1.05 | 25.9           | 26.2            | 27.0            | 27.4            | 27.9            | 28.8            | 30.3            |      |
|        | F                | 6   | 155  | 18.0 | 1.94           | 15.9            | 16.3            | 17.0            | 17.9            | 18.6            | 19.4            | 23.0 |
|        |                  | 7   | 164  | 18.9 | 1.82           | 16.5            | 17.0            | 17.7            | 18.6            | 19.5            | 21.1            | 22.7 |
|        |                  | 8   | 149  | 19.3 | 1.47           | 16.8            | 17.5            | 18.2            | 19.1            | 20.3            | 21.5            | 22.2 |
|        |                  | 9   | 165  | 20.6 | 1.83           | 18.0            | 18.5            | 19.3            | 20.5            | 21.5            | 23.1            | 24.4 |
|        |                  | 10  | 163  | 21.7 | 1.98           | 18.7            | 19.4            | 20.4            | 21.4            | 22.9            | 24.0            | 25.9 |
| 11     |                  | 151 | 22.8 | 1.64 | 19.6           | 20.7            | 21.7            | 22.8            | 24.0            | 24.8            | 26.5            |      |
| 12     |                  | 172 | 23.9 | 1.59 | 21.0           | 21.9            | 22.8            | 23.9            | 24.9            | 25.9            | 26.9            |      |
| 13     |                  | 164 | 24.9 | 1.70 | 22.2           | 22.8            | 23.7            | 24.8            | 26.0            | 27.1            | 28.0            |      |
| 14     |                  | 151 | 25.2 | 1.72 | 22.0           | 23.1            | 24.0            | 25.0            | 26.3            | 27.3            | 28.0            |      |
| 15     |                  | 198 | 25.6 | 1.60 | 22.7           | 23.3            | 24.5            | 25.8            | 26.8            | 27.9            | 28.2            |      |
| 16     |                  | 184 | 25.6 | 1.46 | 23.2           | 23.7            | 24.5            | 25.4            | 26.6            | 27.5            | 28.6            |      |
| 17     |                  | 167 | 25.8 | 1.63 | 23.2           | 23.6            | 25.0            | 25.8            | 26.9            | 27.5            | 28.5            |      |
| 18     |                  | 159 | 25.8 | 1.64 | 22.7           | 23.8            | 24.7            | 25.8            | 26.7            | 27.7            | 29.1            |      |
| 19     |                  | 127 | 25.6 | 1.56 | 23.1           | 23.7            | 24.4            | 25.6            | 26.5            | 27.4            | 28.6            |      |
| 20     |                  | 98  | 25.6 | 1.48 | 22.5           | 23.6            | 24.7            | 25.6            | 26.5            | 27.6            | 28.4            |      |
| 21     |                  | 102 | 25.6 | 1.57 | 22.9           | 23.9            | 24.5            | 25.4            | 26.9            | 28.0            | 28.5            |      |
| 22     |                  | 90  | 25.8 | 1.43 | 23.2           | 23.9            | 24.9            | 25.6            | 26.6            | 27.6            | 28.9            |      |

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Table 4-2-2-2-52 Upper arm skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 9.5  | 3.83 | 4.5            | 5.5             | 7.0             | 8.0             | 11.0            | 15.0            | 19.8            |      |
|        | 7                | 221 | 10.1 | 4.63 | 5.0            | 6.0             | 7.0             | 9.0             | 11.5            | 15.5            | 22.7            |      |
|        | 8                | 196 | 12.4 | 6.51 | 5.0            | 6.0             | 7.5             | 10.0            | 15.5            | 22.5            | 27.5            |      |
|        | 9                | 193 | 13.4 | 6.77 | 5.0            | 6.2             | 8.0             | 11.0            | 18.0            | 24.0            | 29.0            |      |
|        | 10               | 185 | 13.9 | 6.58 | 5.5            | 7.0             | 9.0             | 11.5            | 18.8            | 23.2            | 28.6            |      |
|        | 11               | 176 | 15.4 | 6.94 | 5.7            | 7.4             | 10.0            | 14.8            | 20.5            | 25.0            | 30.0            |      |
|        | 12               | 187 | 14.2 | 7.55 | 5.5            | 6.0             | 8.0             | 12.0            | 18.5            | 26.0            | 30.0            |      |
|        | 13               | 178 | 11.9 | 6.64 | 5.0            | 6.0             | 7.0             | 10.0            | 15.0            | 21.1            | 30.6            |      |
|        | 14               | 182 | 11.8 | 6.08 | 5.0            | 6.0             | 7.5             | 10.0            | 14.6            | 19.9            | 28.5            |      |
|        | 15               | 179 | 11.3 | 5.62 | 4.7            | 6.0             | 7.5             | 9.5             | 13.5            | 19.0            | 27.9            |      |
|        | 16               | 174 | 11.0 | 5.42 | 5.0            | 6.0             | 7.0             | 9.5             | 13.5            | 19.5            | 24.6            |      |
|        | 17               | 166 | 10.8 | 5.29 | 5.0            | 5.5             | 7.0             | 9.5             | 13.0            | 17.5            | 24.5            |      |
|        | 18               | 162 | 11.0 | 5.47 | 4.5            | 5.0             | 7.0             | 9.5             | 13.5            | 19.0            | 25.0            |      |
|        | 19               | 119 | 10.9 | 5.33 | 4.5            | 5.5             | 6.5             | 9.5             | 14.0            | 18.5            | 24.2            |      |
|        | 20               | 102 | 11.7 | 5.94 | 4.5            | 5.5             | 7.0             | 10.0            | 15.0            | 21.4            | 24.0            |      |
|        | 21               | 99  | 10.7 | 5.61 | 4.5            | 5.5             | 6.0             | 9.0             | 13.5            | 20.0            | 23.0            |      |
|        | 22               | 82  | 11.3 | 6.11 | 4.5            | 6.0             | 6.5             | 9.8             | 13.6            | 21.2            | 28.3            |      |
|        | F                | 6   | 155  | 9.9  | 2.93           | 5.6             | 7.0             | 8.0             | 9.2             | 11.4            | 13.0            | 18.4 |
|        |                  | 7   | 165  | 10.9 | 4.19           | 5.5             | 6.6             | 8.1             | 9.9             | 13.0            | 16.9            | 21.6 |
|        |                  | 8   | 150  | 12.0 | 4.78           | 6.2             | 7.3             | 8.6             | 10.7            | 13.0            | 20.0            | 23.1 |
|        |                  | 9   | 165  | 13.4 | 5.17           | 6.3             | 8.0             | 9.7             | 12.4            | 16.0            | 20.6            | 26.6 |
|        |                  | 10  | 163  | 14.0 | 4.96           | 7.0             | 8.5             | 9.8             | 12.8            | 17.8            | 21.3            | 24.8 |
| 11     |                  | 151 | 13.9 | 5.44 | 6.5            | 8.0             | 9.8             | 12.1            | 17.0            | 22.5            | 25.5            |      |
| 12     |                  | 172 | 14.7 | 5.15 | 6.9            | 9.0             | 11.0            | 13.8            | 17.8            | 21.1            | 26.4            |      |
| 13     |                  | 164 | 16.1 | 6.00 | 7.5            | 9.9             | 12.7            | 14.8            | 18.5            | 22.6            | 32.0            |      |
| 14     |                  | 151 | 16.4 | 5.13 | 8.4            | 10.2            | 12.7            | 15.8            | 19.4            | 22.5            | 29.5            |      |
| 15     |                  | 198 | 16.7 | 4.88 | 10.0           | 11.2            | 13.1            | 15.8            | 19.7            | 23.9            | 27.5            |      |
| 16     |                  | 184 | 16.7 | 5.23 | 8.4            | 11.0            | 13.0            | 16.3            | 19.5            | 23.4            | 26.3            |      |
| 17     |                  | 167 | 17.4 | 5.22 | 8.2            | 10.8            | 14.5            | 17.0            | 20.0            | 23.0            | 28.6            |      |
| 18     |                  | 159 | 17.4 | 4.76 | 9.3            | 11.4            | 14.0            | 17.0            | 20.0            | 23.5            | 28.0            |      |
| 19     |                  | 127 | 16.6 | 4.64 | 9.9            | 11.3            | 13.0            | 15.5            | 19.4            | 22.3            | 27.2            |      |
| 20     |                  | 98  | 16.1 | 5.82 | 8.5            | 10.5            | 12.0            | 14.8            | 18.6            | 23.5            | 31.2            |      |
| 21     |                  | 103 | 16.0 | 4.37 | 9.5            | 10.6            | 12.8            | 15.5            | 18.3            | 22.8            | 26.4            |      |
| 22     |                  | 90  | 15.8 | 4.77 | 8.6            | 10.0            | 12.0            | 14.5            | 19.0            | 23.2            | 26.6            |      |

Table 4-2-2-2-53 Subscapular skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 6.5  | 3.35 | 3.5            | 4.0             | 4.5             | 5.0             | 6.5             | 11.3            | 17.0            |      |
|        | 7                | 221 | 7.3  | 4.87 | 4.0            | 4.0             | 5.0             | 5.5             | 7.5             | 11.5            | 24.0            |      |
|        | 8                | 196 | 9.9  | 6.51 | 4.0            | 4.5             | 5.0             | 7.5             | 12.0            | 21.0            | 27.0            |      |
|        | 9                | 193 | 10.9 | 7.51 | 4.0            | 4.5             | 5.0             | 7.5             | 14.8            | 23.0            | 29.3            |      |
|        | 10               | 185 | 11.5 | 7.50 | 4.5            | 5.5             | 6.0             | 8.0             | 15.8            | 22.7            | 30.7            |      |
|        | 11               | 176 | 13.5 | 8.37 | 5.0            | 5.5             | 7.0             | 10.5            | 19.5            | 26.7            | 33.0            |      |
|        | 12               | 187 | 13.1 | 9.01 | 5.0            | 5.5             | 7.0             | 9.0             | 17.0            | 26.6            | 36.4            |      |
|        | 13               | 178 | 11.4 | 7.71 | 5.0            | 5.0             | 6.5             | 8.8             | 13.0            | 22.7            | 33.6            |      |
|        | 14               | 182 | 11.5 | 6.42 | 5.5            | 6.0             | 7.5             | 9.5             | 12.8            | 22.0            | 28.8            |      |
|        | 15               | 179 | 11.5 | 6.21 | 5.5            | 6.5             | 8.0             | 9.5             | 13.0            | 19.5            | 29.3            |      |
|        | 16               | 174 | 11.7 | 5.86 | 6.1            | 7.0             | 8.0             | 10.0            | 13.1            | 19.5            | 28.0            |      |
|        | 17               | 166 | 11.8 | 6.07 | 5.5            | 7.0             | 8.0             | 10.0            | 13.0            | 18.2            | 31.0            |      |
|        | 18               | 162 | 12.2 | 5.81 | 6.4            | 7.0             | 8.9             | 10.0            | 13.5            | 20.0            | 27.1            |      |
|        | 19               | 119 | 13.2 | 6.25 | 6.5            | 8.0             | 9.0             | 11.5            | 15.5            | 20.5            | 32.8            |      |
|        | 20               | 102 | 14.2 | 7.47 | 6.0            | 8.0             | 9.5             | 12.3            | 17.0            | 23.9            | 32.6            |      |
|        | 21               | 99  | 12.8 | 6.22 | 6.5            | 7.5             | 8.5             | 10.5            | 15.0            | 20.0            | 26.0            |      |
|        | 22               | 82  | 12.8 | 5.96 | 7.0            | 7.5             | 9.0             | 11.0            | 14.6            | 24.9            | 28.5            |      |
|        | F                | 6   | 155  | 7.3  | 3.34           | 4.4             | 5.0             | 5.5             | 6.2             | 8.0             | 10.0            | 18.7 |
|        |                  | 7   | 165  | 8.7  | 5.31           | 4.3             | 5.0             | 5.5             | 6.5             | 9.0             | 17.2            | 23.4 |
|        |                  | 8   | 150  | 9.2  | 5.46           | 4.7             | 5.0             | 5.7             | 7.0             | 10.6            | 17.9            | 24.7 |
|        |                  | 9   | 165  | 11.5 | 6.73           | 5.1             | 6.0             | 7.0             | 9.2             | 15.2            | 21.3            | 31.0 |
|        |                  | 10  | 163  | 12.2 | 6.70           | 5.1             | 6.0             | 7.3             | 9.5             | 15.0            | 22.3            | 30.2 |
| 11     |                  | 151 | 13.1 | 7.57 | 6.0            | 6.8             | 7.5             | 10.1            | 16.5            | 25.3            | 34.3            |      |
| 12     |                  | 172 | 13.6 | 6.14 | 6.5            | 7.5             | 9.1             | 12.0            | 16.2            | 21.8            | 28.2            |      |
| 13     |                  | 164 | 15.4 | 7.09 | 7.5            | 8.7             | 11.0            | 13.0            | 18.0            | 26.3            | 35.5            |      |
| 14     |                  | 151 | 16.3 | 6.78 | 8.0            | 9.3             | 11.5            | 15.0            | 19.4            | 25.0            | 32.2            |      |
| 15     |                  | 198 | 16.2 | 6.07 | 8.4            | 10.0            | 12.0            | 14.7            | 19.2            | 25.0            | 32.0            |      |
| 16     |                  | 184 | 16.5 | 6.50 | 8.8            | 10.2            | 12.0            | 15.0            | 19.0            | 25.0            | 33.6            |      |
| 17     |                  | 167 | 17.3 | 6.43 | 8.7            | 10.1            | 12.8            | 16.1            | 20.5            | 26.3            | 36.0            |      |
| 18     |                  | 159 | 16.9 | 6.45 | 8.5            | 10.0            | 12.3            | 15.5            | 20.5            | 25.0            | 35.1            |      |
| 19     |                  | 127 | 17.6 | 6.91 | 9.1            | 11.5            | 13.4            | 15.5            | 20.8            | 26.1            | 37.0            |      |
| 20     |                  | 97  | 17.4 | 6.53 | 8.8            | 10.5            | 12.9            | 15.5            | 20.8            | 26.2            | 36.1            |      |
| 21     |                  | 103 | 17.6 | 6.37 | 9.5            | 11.0            | 13.0            | 16.5            | 20.5            | 25.0            | 36.0            |      |
| 22     |                  | 90  | 18.2 | 6.85 | 9.5            | 11.1            | 13.5            | 16.5            | 21.1            | 29.4            | 38.0            |      |

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Table 4-2-2-2-54 Abdominal skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 7.8  | 5.43  | 3.0            | 3.7             | 4.5             | 5.5             | 8.5             | 16.6            | 24.7            |      |
|        | 7                | 221 | 8.9  | 6.21  | 3.3            | 4.0             | 5.0             | 7.0             | 10.0            | 16.4            | 28.2            |      |
|        | 8                | 196 | 12.7 | 8.87  | 3.5            | 4.5             | 6.0             | 9.3             | 17.9            | 28.0            | 33.1            |      |
|        | 9                | 193 | 13.7 | 9.36  | 4.0            | 4.5             | 6.0             | 10.5            | 20.0            | 30.3            | 33.7            |      |
|        | 10               | 185 | 15.1 | 9.96  | 4.0            | 5.3             | 7.0             | 10.5            | 21.5            | 30.8            | 37.1            |      |
|        | 11               | 176 | 18.0 | 11.23 | 4.5            | 5.5             | 8.6             | 15.3            | 26.0            | 35.3            | 38.7            |      |
|        | 12               | 187 | 16.7 | 11.66 | 4.0            | 5.0             | 7.0             | 12.0            | 25.0            | 33.6            | 44.2            |      |
|        | 13               | 178 | 14.8 | 11.15 | 4.2            | 5.0             | 6.5             | 10.3            | 20.0            | 31.1            | 44.0            |      |
|        | 14               | 182 | 14.8 | 10.62 | 5.0            | 5.5             | 7.0             | 11.0            | 18.0            | 32.7            | 41.3            |      |
|        | 15               | 179 | 14.0 | 9.24  | 4.7            | 5.5             | 7.5             | 11.0            | 18.5            | 28.0            | 37.5            |      |
|        | 16               | 174 | 14.1 | 9.27  | 4.6            | 6.0             | 8.0             | 10.5            | 17.5            | 27.5            | 40.5            |      |
|        | 17               | 166 | 14.4 | 9.46  | 5.0            | 6.0             | 7.5             | 10.8            | 19.6            | 30.0            | 39.0            |      |
|        | 18               | 162 | 14.4 | 9.83  | 5.0            | 6.0             | 7.9             | 10.8            | 15.6            | 29.0            | 40.6            |      |
|        | 19               | 120 | 14.9 | 9.86  | 5.0            | 6.0             | 7.5             | 11.3            | 20.5            | 30.8            | 39.4            |      |
|        | 20               | 102 | 15.6 | 9.69  | 5.0            | 5.7             | 8.4             | 13.3            | 20.0            | 29.4            | 42.6            |      |
|        | 21               | 99  | 13.6 | 8.89  | 5.0            | 6.0             | 7.0             | 10.5            | 19.0            | 25.0            | 41.0            |      |
|        | 22               | 82  | 15.1 | 10.45 | 4.5            | 5.5             | 7.5             | 13.3            | 17.1            | 31.4            | 46.6            |      |
|        | F                | 6   | 155  | 8.1   | 3.98           | 3.9             | 4.8             | 5.6             | 6.9             | 9.0             | 13.2            | 21.3 |
|        |                  | 7   | 165  | 10.1  | 6.49           | 4.2             | 4.8             | 6.0             | 7.5             | 11.6            | 20.7            | 28.0 |
|        |                  | 8   | 150  | 11.6  | 6.70           | 4.5             | 5.3             | 6.8             | 9.3             | 13.9            | 22.2            | 28.8 |
|        |                  | 9   | 165  | 14.6  | 7.98           | 5.0             | 6.4             | 8.3             | 12.0            | 21.0            | 26.7            | 32.5 |
|        |                  | 10  | 163  | 15.9  | 7.97           | 5.2             | 7.0             | 9.0             | 14.3            | 21.5            | 27.0            | 33.1 |
| 11     |                  | 151 | 17.0 | 8.34  | 6.4            | 8.0             | 10.8            | 15.0            | 22.0            | 29.8            | 33.7            |      |
| 12     |                  | 172 | 18.9 | 8.04  | 7.1            | 10.5            | 13.0            | 17.9            | 22.8            | 29.4            | 36.7            |      |
| 13     |                  | 164 | 21.7 | 8.61  | 9.4            | 11.7            | 15.9            | 20.9            | 25.7            | 33.0            | 41.2            |      |
| 14     |                  | 151 | 21.0 | 8.47  | 10.8           | 11.4            | 15.0            | 19.5            | 26.5            | 32.6            | 38.7            |      |
| 15     |                  | 198 | 22.9 | 7.24  | 12.5           | 15.0            | 17.6            | 22.2            | 26.8            | 31.0            | 42.0            |      |
| 16     |                  | 184 | 22.3 | 7.95  | 10.4           | 14.2            | 17.0            | 21.4            | 25.9            | 32.6            | 42.7            |      |
| 17     |                  | 167 | 22.9 | 7.44  | 10.0           | 14.0            | 18.1            | 22.2            | 27.0            | 33.2            | 41.2            |      |
| 18     |                  | 159 | 21.6 | 7.26  | 11.2           | 13.5            | 15.8            | 20.4            | 26.6            | 31.0            | 37.0            |      |
| 19     |                  | 127 | 20.1 | 6.77  | 9.9            | 12.3            | 15.5            | 19.3            | 23.5            | 29.7            | 33.3            |      |
| 20     |                  | 98  | 19.1 | 7.18  | 9.0            | 11.5            | 14.1            | 18.3            | 21.8            | 29.1            | 39.1            |      |
| 21     |                  | 103 | 18.6 | 5.65  | 8.6            | 12.4            | 14.8            | 17.5            | 22.0            | 27.1            | 31.4            |      |
| 22     |                  | 90  | 19.2 | 6.03  | 8.3            | 12.5            | 15.0            | 18.4            | 22.0            | 28.4            | 32.8            |      |

Table 4-2-2-2-55 Percent body fat (%)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 9                | 193 | 15.7 | 6.68 | 8.8            | 9.5             | 10.4            | 13.4            | 19.7            | 26.6            | 30.4            |
|        | 10               | 185 | 16.3 | 6.57 | 9.2            | 10.2            | 11.6            | 13.4            | 20.3            | 26.2            | 33.3            |
|        | 11               | 176 | 18.0 | 7.12 | 9.6            | 10.4            | 12.0            | 16.1            | 23.1            | 28.6            | 33.7            |
|        | 12               | 187 | 17.2 | 7.78 | 9.5            | 10.0            | 11.4            | 13.7            | 21.7            | 29.6            | 36.3            |
|        | 13               | 178 | 15.3 | 6.77 | 9.3            | 9.7             | 10.7            | 13.0            | 16.9            | 26.1            | 33.9            |
|        | 14               | 182 | 15.3 | 5.82 | 9.5            | 10.2            | 11.1            | 13.4            | 17.2            | 23.8            | 30.7            |
|        | 15               | 179 | 15.1 | 5.49 | 9.5            | 10.4            | 11.4            | 13.4            | 16.9            | 22.2            | 32.4            |
|        | 16               | 174 | 15.0 | 5.12 | 10.0           | 10.5            | 11.6            | 13.2            | 16.9            | 22.1            | 28.5            |
|        | 17               | 166 | 14.9 | 5.25 | 10.0           | 10.4            | 11.6            | 13.2            | 16.5            | 21.6            | 31.0            |
|        | 18               | 162 | 15.2 | 5.18 | 9.5            | 10.4            | 11.8            | 13.4            | 17.1            | 24.0            | 30.2            |
|        | 19               | 119 | 15.6 | 5.29 | 10.0           | 10.7            | 11.6            | 14.1            | 17.9            | 22.2            | 30.1            |
|        | 20               | 102 | 16.5 | 6.30 | 9.5            | 10.7            | 12.5            | 15.1            | 18.7            | 25.0            | 32.0            |
|        | 21               | 99  | 15.4 | 5.34 | 10.0           | 10.7            | 11.4            | 13.2            | 17.4            | 23.2            | 27.3            |
|        | 22               | 82  | 15.7 | 5.67 | 10.0           | 10.7            | 11.8            | 13.5            | 17.2            | 26.5            | 30.6            |
| F      | 9                | 165 | 18.4 | 6.38 | 11.8           | 12.4            | 13.9            | 16.4            | 21.9            | 27.1            | 36.9            |
|        | 10               | 163 | 19.1 | 6.20 | 12.1           | 12.9            | 14.4            | 16.8            | 23.1            | 28.5            | 35.1            |
|        | 11               | 151 | 19.6 | 7.00 | 12.3           | 13.0            | 14.3            | 17.4            | 22.9            | 31.0            | 37.0            |
|        | 12               | 172 | 20.2 | 6.05 | 12.5           | 14.1            | 16.3            | 19.1            | 22.8            | 28.0            | 35.7            |
|        | 13               | 164 | 22.1 | 7.12 | 13.4           | 15.4            | 17.7            | 20.0            | 24.9            | 30.9            | 42.9            |
|        | 14               | 151 | 22.7 | 6.35 | 14.2           | 16.3            | 18.3            | 21.2            | 25.6            | 31.4            | 39.7            |
|        | 15               | 198 | 22.8 | 5.76 | 15.6           | 17.0            | 18.9            | 21.0            | 25.8            | 31.9            | 36.4            |
|        | 16               | 184 | 23.0 | 6.25 | 14.4           | 16.9            | 18.7            | 21.7            | 25.9            | 30.7            | 37.4            |
|        | 17               | 167 | 23.8 | 6.19 | 14.6           | 16.9            | 20.2            | 22.6            | 26.8            | 31.8            | 40.5            |
|        | 18               | 159 | 23.5 | 5.96 | 14.7           | 16.9            | 19.0            | 22.6            | 26.8            | 31.3            | 39.8            |
|        | 19               | 127 | 23.5 | 6.19 | 15.4           | 17.7            | 19.5            | 22.2            | 26.3            | 30.5            | 40.7            |
|        | 20               | 97  | 23.1 | 6.72 | 14.3           | 16.7            | 18.7            | 21.3            | 25.6            | 31.9            | 42.4            |
|        | 21               | 103 | 23.2 | 5.58 | 15.5           | 16.9            | 19.5            | 22.1            | 26.3            | 31.4            | 36.3            |
|        | 22               | 90  | 23.4 | 6.23 | 14.8           | 16.9            | 19.2            | 22.2            | 25.6            | 32.3            | 40.4            |

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Table 4-2-2-2-56 Lean body mass (kg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 9                | 193 | 26.0 | 3.91  | 20.4           | 21.6            | 22.9            | 25.2            | 28.4            | 31.6            | 35.3            |
|        | 10               | 185 | 29.0 | 4.84  | 21.4           | 23.0            | 25.4            | 28.0            | 32.1            | 35.7            | 37.9            |
|        | 11               | 176 | 32.6 | 6.16  | 23.5           | 26.1            | 27.8            | 32.1            | 35.9            | 40.9            | 45.4            |
|        | 12               | 187 | 36.2 | 6.50  | 26.0           | 28.2            | 31.4            | 35.5            | 40.5            | 44.4            | 50.8            |
|        | 13               | 178 | 41.0 | 7.07  | 28.7           | 31.8            | 35.8            | 41.0            | 45.4            | 49.5            | 56.9            |
|        | 14               | 182 | 45.7 | 7.14  | 34.5           | 37.6            | 40.7            | 44.7            | 49.7            | 54.7            | 62.0            |
|        | 15               | 179 | 47.7 | 8.45  | 36.7           | 39.5            | 42.8            | 47.2            | 50.9            | 55.2            | 59.0            |
|        | 16               | 174 | 49.0 | 5.96  | 38.5           | 41.9            | 44.6            | 48.7            | 53.1            | 56.8            | 63.0            |
|        | 17               | 166 | 49.5 | 6.23  | 39.7           | 43.1            | 45.7            | 48.6            | 52.6            | 58.1            | 63.5            |
|        | 18               | 162 | 50.2 | 5.66  | 39.0           | 43.0            | 46.3            | 50.0            | 53.8            | 58.0            | 60.7            |
|        | 19               | 119 | 50.6 | 5.29  | 40.9           | 43.9            | 46.9            | 50.0            | 53.8            | 57.8            | 61.8            |
|        | 20               | 102 | 51.1 | 5.70  | 41.1           | 43.3            | 47.3            | 50.8            | 54.3            | 59.2            | 64.7            |
|        | 21               | 99  | 52.7 | 18.67 | 41.9           | 43.8            | 45.8            | 49.9            | 54.4            | 60.7            | 68.2            |
|        | 22               | 82  | 50.9 | 4.34  | 43.8           | 46.1            | 48.0            | 50.0            | 52.3            | 57.7            | 62.1            |
| F      | 9                | 165 | 24.6 | 3.90  | 18.6           | 20.4            | 21.7            | 24.0            | 27.0            | 30.0            | 34.0            |
|        | 10               | 163 | 27.5 | 5.14  | 20.4           | 21.6            | 23.9            | 26.9            | 30.5            | 33.9            | 38.5            |
|        | 11               | 151 | 31.4 | 4.46  | 23.0           | 26.4            | 28.4            | 31.0            | 34.6            | 37.6            | 40.6            |
|        | 12               | 172 | 33.5 | 4.13  | 26.0           | 28.4            | 30.6            | 33.3            | 35.8            | 39.0            | 42.2            |
|        | 13               | 164 | 36.0 | 4.75  | 28.2           | 30.7            | 32.8            | 35.4            | 38.8            | 42.5            | 47.1            |
|        | 14               | 151 | 36.0 | 4.24  | 28.9           | 31.1            | 33.2            | 35.6            | 38.5            | 41.9            | 46.0            |
|        | 15               | 198 | 37.9 | 4.50  | 30.3           | 32.4            | 34.8            | 37.2            | 40.9            | 44.5            | 46.6            |
|        | 16               | 184 | 37.5 | 4.14  | 30.9           | 32.7            | 34.6            | 36.9            | 39.6            | 43.3            | 45.9            |
|        | 17               | 167 | 37.6 | 4.05  | 30.8           | 32.5            | 34.6            | 37.7            | 40.4            | 42.4            | 46.7            |
|        | 18               | 159 | 37.4 | 3.96  | 30.7           | 32.3            | 34.4            | 37.3            | 39.9            | 43.1            | 45.8            |
|        | 19               | 127 | 37.3 | 3.70  | 31.4           | 32.8            | 34.4            | 36.8            | 39.7            | 42.0            | 45.6            |
|        | 20               | 97  | 37.0 | 3.36  | 31.5           | 32.9            | 34.9            | 36.7            | 38.8            | 41.9            | 44.9            |
|        | 21               | 103 | 36.9 | 3.34  | 31.4           | 32.9            | 34.5            | 36.9            | 39.0            | 41.7            | 44.6            |
|        | 22               | 90  | 36.9 | 3.75  | 30.2           | 32.0            | 34.7            | 36.8            | 39.2            | 42.5            | 45.8            |

## 4.2.4 Physiological function

Table 4-2-2-2-57 Pulse (times/min)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |       |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| M      | 6                | 173 | 92.7 | 11.47 | 72.0           | 76.0            | 84.0            | 92.0            | 101.5           | 106.6           | 114.0           |       |
|        | 7                | 222 | 90.5 | 11.06 | 72.0           | 76.0            | 82.0            | 90.0            | 98.0            | 106.0           | 114.6           |       |
|        | 8                | 196 | 90.9 | 11.76 | 69.8           | 78.0            | 84.0            | 89.0            | 98.0            | 106.0           | 116.4           |       |
|        | 9                | 192 | 90.9 | 11.70 | 71.6           | 76.0            | 83.3            | 90.0            | 99.5            | 106.0           | 115.3           |       |
|        | 10               | 185 | 88.2 | 10.86 | 70.0           | 73.2            | 80.0            | 88.0            | 96.0            | 102.0           | 106.8           |       |
|        | 11               | 176 | 89.4 | 11.91 | 64.6           | 72.0            | 82.0            | 90.0            | 98.0            | 104.0           | 112.0           |       |
|        | 12               | 188 | 89.7 | 12.55 | 70.0           | 75.9            | 82.0            | 88.0            | 96.0            | 108.0           | 118.0           |       |
|        | 13               | 178 | 86.7 | 11.58 | 66.7           | 73.9            | 78.0            | 86.0            | 95.3            | 102.0           | 108.0           |       |
|        | 14               | 182 | 84.7 | 9.81  | 67.0           | 72.0            | 78.0            | 84.0            | 92.0            | 98.0            | 102.0           |       |
|        | 15               | 179 | 86.1 | 12.71 | 64.0           | 70.0            | 78.0            | 84.0            | 94.0            | 102.0           | 114.4           |       |
|        | 16               | 174 | 81.9 | 11.47 | 64.5           | 68.0            | 74.0            | 80.0            | 88.0            | 99.0            | 110.0           |       |
|        | 17               | 166 | 81.2 | 11.46 | 60.0           | 68.0            | 72.0            | 80.0            | 88.0            | 96.0            | 106.0           |       |
|        | 18               | 162 | 79.4 | 10.25 | 63.8           | 68.0            | 72.0            | 78.0            | 84.0            | 92.0            | 103.1           |       |
|        | 19               | 120 | 81.9 | 11.48 | 60.0           | 68.2            | 74.0            | 81.0            | 89.5            | 98.0            | 104.2           |       |
|        | 20               | 101 | 78.3 | 10.18 | 60.0           | 64.0            | 72.0            | 78.0            | 84.5            | 90.0            | 101.6           |       |
|        | 21               | 99  | 76.6 | 10.75 | 60.0           | 62.0            | 68.0            | 78.0            | 84.0            | 92.0            | 99.0            |       |
|        | 22               | 82  | 75.4 | 7.75  | 61.0           | 66.6            | 70.0            | 74.0            | 82.0            | 86.0            | 90.0            |       |
|        | F                | 6   | 155  | 93.1  | 12.28          | 70.7            | 78.0            | 84.0            | 94.0            | 100.0           | 108.0           | 114.6 |
|        |                  | 7   | 164  | 93.3  | 12.52          | 71.8            | 76.0            | 84.0            | 92.0            | 102.0           | 110.0           | 120.0 |
|        |                  | 8   | 150  | 90.7  | 12.98          | 69.1            | 74.0            | 82.0            | 90.0            | 100.0           | 108.0           | 116.8 |
|        |                  | 9   | 165  | 91.4  | 11.59          | 70.0            | 76.0            | 82.0            | 90.0            | 100.0           | 106.0           | 117.0 |
|        |                  | 10  | 163  | 90.4  | 13.07          | 69.8            | 74.0            | 80.0            | 90.0            | 100.0           | 107.2           | 120.0 |
| 11     |                  | 151 | 90.4 | 11.54 | 68.0           | 76.0            | 82.0            | 90.0            | 98.0            | 104.0           | 116.0           |       |
| 12     |                  | 172 | 89.4 | 12.72 | 68.0           | 74.0            | 78.5            | 88.0            | 99.5            | 106.0           | 116.0           |       |
| 13     |                  | 164 | 87.4 | 11.06 | 69.9           | 74.0            | 78.0            | 86.0            | 96.0            | 102.0           | 110.0           |       |
| 14     |                  | 151 | 86.8 | 11.19 | 70.0           | 74.0            | 78.0            | 86.0            | 94.0            | 102.0           | 112.0           |       |
| 15     |                  | 198 | 84.6 | 10.55 | 67.9           | 72.0            | 78.0            | 84.0            | 91.3            | 98.0            | 110.1           |       |
| 16     |                  | 184 | 83.8 | 11.53 | 64.0           | 70.0            | 76.0            | 82.0            | 90.0            | 98.0            | 110.0           |       |
| 17     |                  | 167 | 83.5 | 11.23 | 68.0           | 70.0            | 74.0            | 82.0            | 90.0            | 100.0           | 110.0           |       |
| 18     |                  | 159 | 81.4 | 10.01 | 64.0           | 70.0            | 74.0            | 80.0            | 88.0            | 96.0            | 102.0           |       |
| 19     |                  | 127 | 82.9 | 10.33 | 64.0           | 68.0            | 76.0            | 82.0            | 90.0            | 94.0            | 105.0           |       |
| 20     |                  | 98  | 83.2 | 11.64 | 64.0           | 70.0            | 76.0            | 80.0            | 90.0            | 100.0           | 110.0           |       |
| 21     |                  | 103 | 83.2 | 11.03 | 62.2           | 70.8            | 76.0            | 82.0            | 90.0            | 96.0            | 100.0           |       |
| 22     |                  | 90  | 79.8 | 8.67  | 63.5           | 70.0            | 72.0            | 80.0            | 86.0            | 90.0            | 96.6            |       |

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Table 4-2-2-2-58 Systolic pressure (mmHg)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |       |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| M      | 6                | 173 | 89.8  | 9.53  | 70.0           | 78.0            | 83.0            | 90.0            | 96.0            | 102.0           | 110.0           |       |
|        | 7                | 221 | 90.9  | 9.57  | 74.0           | 78.0            | 84.0            | 92.0            | 98.0            | 102.0           | 110.0           |       |
|        | 8                | 196 | 91.6  | 9.49  | 72.0           | 80.0            | 86.0            | 90.0            | 97.5            | 104.0           | 110.0           |       |
|        | 9                | 193 | 96.1  | 11.11 | 76.0           | 80.8            | 88.0            | 96.0            | 104.0           | 110.0           | 118.0           |       |
|        | 10               | 185 | 99.4  | 11.59 | 80.0           | 84.0            | 92.0            | 100.0           | 106.0           | 114.8           | 122.8           |       |
|        | 11               | 176 | 102.9 | 11.30 | 84.0           | 89.4            | 95.0            | 102.0           | 110.0           | 120.0           | 124.0           |       |
|        | 12               | 188 | 105.6 | 11.48 | 85.0           | 92.0            | 98.0            | 105.0           | 114.0           | 120.0           | 127.3           |       |
|        | 13               | 178 | 110.2 | 12.52 | 90.0           | 92.9            | 100.0           | 110.0           | 120.0           | 128.0           | 136.0           |       |
|        | 14               | 182 | 112.0 | 11.84 | 91.0           | 96.6            | 104.0           | 110.0           | 120.0           | 127.4           | 140.0           |       |
|        | 15               | 179 | 114.9 | 12.66 | 92.0           | 100.0           | 107.0           | 114.0           | 122.0           | 130.0           | 140.0           |       |
|        | 16               | 174 | 114.2 | 11.93 | 95.0           | 100.0           | 106.0           | 113.0           | 120.0           | 130.0           | 139.5           |       |
|        | 17               | 166 | 115.7 | 11.85 | 92.0           | 100.0           | 110.0           | 116.0           | 124.0           | 130.0           | 140.0           |       |
|        | 18               | 162 | 115.2 | 11.69 | 94.0           | 100.0           | 108.0           | 116.0           | 124.0           | 130.0           | 140.0           |       |
|        | 19               | 120 | 116.6 | 11.45 | 96.0           | 100.0           | 110.0           | 117.0           | 124.0           | 131.8           | 138.0           |       |
|        | 20               | 102 | 116.5 | 11.54 | 96.0           | 100.0           | 110.0           | 116.0           | 124.0           | 130.0           | 141.8           |       |
|        | 21               | 99  | 112.6 | 9.34  | 98.0           | 100.0           | 106.0           | 112.0           | 120.0           | 124.0           | 130.0           |       |
|        | 22               | 82  | 113.7 | 8.95  | 100.0          | 100.6           | 106.0           | 114.0           | 120.0           | 127.4           | 130.0           |       |
|        | F                | 6   | 155   | 86.5  | 9.72           | 69.0            | 74.0            | 80.0            | 86.0            | 94.0            | 100.0           | 104.0 |
|        |                  | 7   | 165   | 88.1  | 8.98           | 72.0            | 76.0            | 80.0            | 88.0            | 94.0            | 100.0           | 104.0 |
|        |                  | 8   | 150   | 89.9  | 10.61          | 72.0            | 78.2            | 82.0            | 88.0            | 96.0            | 104.0           | 114.0 |
|        |                  | 9   | 165   | 95.5  | 9.66           | 80.0            | 83.2            | 90.0            | 96.0            | 102.0           | 110.0           | 114.0 |
|        |                  | 10  | 162   | 100.1 | 11.53          | 80.0            | 86.0            | 92.0            | 100.0           | 108.0           | 117.4           | 124.0 |
| 11     |                  | 151 | 101.3 | 11.20 | 81.0           | 86.4            | 92.0            | 102.0           | 110.0           | 114.0           | 124.0           |       |
| 12     |                  | 172 | 104.8 | 10.34 | 86.0           | 92.0            | 98.0            | 103.0           | 112.0           | 120.0           | 125.6           |       |
| 13     |                  | 164 | 106.4 | 10.71 | 88.0           | 93.0            | 100.0           | 105.0           | 112.0           | 120.0           | 132.0           |       |
| 14     |                  | 151 | 105.2 | 10.56 | 90.0           | 90.4            | 98.0            | 106.0           | 112.0           | 120.0           | 128.0           |       |
| 15     |                  | 198 | 106.6 | 10.64 | 90.0           | 93.8            | 98.0            | 106.0           | 112.0           | 122.0           | 128.1           |       |
| 16     |                  | 184 | 107.5 | 11.27 | 90.0           | 94.0            | 100.0           | 106.0           | 115.0           | 124.0           | 130.0           |       |
| 17     |                  | 167 | 105.8 | 11.52 | 88.0           | 92.0            | 98.0            | 104.0           | 112.0           | 120.0           | 126.0           |       |
| 18     |                  | 159 | 104.0 | 10.84 | 87.0           | 90.0            | 96.0            | 102.0           | 110.0           | 120.0           | 124.4           |       |
| 19     |                  | 127 | 103.0 | 9.75  | 89.0           | 90.0            | 96.0            | 100.0           | 110.0           | 118.0           | 124.3           |       |
| 20     |                  | 98  | 102.8 | 11.29 | 80.0           | 89.8            | 94.0            | 101.0           | 110.0           | 120.0           | 130.0           |       |
| 21     |                  | 103 | 100.3 | 10.95 | 80.0           | 88.0            | 90.0            | 100.0           | 110.0           | 114.0           | 120.0           |       |
| 22     |                  | 90  | 103.0 | 10.96 | 76.0           | 92.0            | 98.0            | 101.5           | 110.0           | 120.0           | 122.5           |       |

Table 4-2-2-2-59 Diastolic pressure (mmHg)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 172 | 55.2 | 7.65 | 42.0           | 48.0            | 50.0            | 54.0            | 60.0            | 64.0            | 70.0            |      |
|        | 7                | 222 | 55.2 | 7.51 | 43.0           | 48.0            | 50.0            | 54.0            | 60.0            | 64.0            | 70.6            |      |
|        | 8                | 196 | 55.8 | 8.15 | 40.0           | 46.0            | 50.0            | 56.0            | 60.0            | 68.0            | 72.2            |      |
|        | 9                | 193 | 59.1 | 7.64 | 46.0           | 50.0            | 54.0            | 60.0            | 64.0            | 70.0            | 76.0            |      |
|        | 10               | 185 | 59.9 | 8.34 | 46.0           | 50.0            | 54.0            | 60.0            | 66.0            | 70.0            | 78.0            |      |
|        | 11               | 176 | 62.9 | 8.53 | 50.0           | 50.0            | 58.0            | 60.0            | 70.0            | 76.0            | 80.0            |      |
|        | 12               | 188 | 62.9 | 8.43 | 49.0           | 50.0            | 58.0            | 62.0            | 70.0            | 74.0            | 80.0            |      |
|        | 13               | 178 | 65.1 | 9.00 | 50.0           | 54.9            | 60.0            | 64.0            | 70.0            | 78.0            | 82.0            |      |
|        | 14               | 182 | 67.5 | 8.41 | 50.0           | 58.0            | 60.0            | 68.0            | 74.0            | 80.0            | 80.0            |      |
|        | 15               | 179 | 68.1 | 8.67 | 53.0           | 60.0            | 60.0            | 68.0            | 72.0            | 80.0            | 89.2            |      |
|        | 16               | 174 | 68.9 | 8.51 | 55.0           | 60.0            | 60.0            | 70.0            | 74.0            | 80.0            | 83.5            |      |
|        | 17               | 166 | 69.7 | 8.24 | 58.0           | 60.0            | 62.0            | 70.0            | 76.3            | 80.0            | 84.0            |      |
|        | 18               | 162 | 70.3 | 8.27 | 58.0           | 60.0            | 64.0            | 70.0            | 76.0            | 80.0            | 86.4            |      |
|        | 19               | 120 | 70.4 | 7.55 | 55.0           | 60.0            | 66.0            | 70.0            | 76.0            | 80.0            | 86.1            |      |
|        | 20               | 102 | 72.1 | 7.29 | 60.0           | 62.0            | 68.0            | 70.0            | 80.0            | 80.0            | 84.0            |      |
|        | 21               | 99  | 69.7 | 7.86 | 54.0           | 60.0            | 64.0            | 70.0            | 75.0            | 80.0            | 85.0            |      |
|        | 22               | 82  | 71.5 | 6.43 | 60.0           | 62.0            | 68.0            | 70.0            | 76.0            | 80.0            | 83.0            |      |
|        | F                | 6   | 155  | 54.2 | 6.85           | 42.0            | 46.0            | 50.0            | 54.0            | 60.0            | 62.0            | 67.3 |
|        |                  | 7   | 164  | 54.8 | 6.79           | 44.0            | 48.0            | 50.0            | 54.0            | 60.0            | 62.0            | 68.1 |
|        |                  | 8   | 150  | 54.9 | 7.02           | 40.0            | 48.0            | 50.0            | 54.5            | 60.0            | 64.0            | 68.0 |
|        |                  | 9   | 165  | 58.9 | 8.06           | 42.0            | 48.0            | 54.0            | 60.0            | 64.0            | 70.0            | 76.0 |
|        |                  | 10  | 163  | 60.5 | 9.23           | 48.0            | 50.0            | 54.0            | 60.0            | 66.0            | 73.2            | 80.3 |
| 11     |                  | 151 | 62.8 | 8.33 | 47.0           | 50.4            | 58.0            | 62.0            | 68.0            | 75.6            | 80.9            |      |
| 12     |                  | 172 | 66.1 | 7.81 | 51.0           | 56.6            | 60.0            | 66.0            | 70.0            | 77.4            | 81.6            |      |
| 13     |                  | 164 | 66.8 | 7.52 | 52.0           | 58.0            | 60.0            | 66.0            | 70.0            | 78.0            | 82.0            |      |
| 14     |                  | 151 | 66.4 | 8.17 | 52.0           | 56.0            | 60.0            | 66.0            | 70.0            | 78.0            | 80.9            |      |
| 15     |                  | 198 | 67.2 | 7.86 | 55.0           | 60.0            | 60.0            | 66.0            | 70.5            | 78.2            | 84.1            |      |
| 16     |                  | 184 | 67.6 | 8.26 | 56.0           | 60.0            | 60.0            | 68.0            | 72.0            | 80.0            | 82.0            |      |
| 17     |                  | 167 | 68.8 | 8.54 | 55.0           | 59.6            | 62.0            | 70.0            | 74.0            | 80.0            | 84.0            |      |
| 18     |                  | 159 | 67.5 | 8.34 | 54.0           | 58.0            | 60.0            | 68.0            | 72.0            | 80.0            | 82.8            |      |
| 19     |                  | 127 | 68.1 | 8.49 | 54.0           | 59.6            | 60.0            | 70.0            | 74.0            | 80.0            | 84.3            |      |
| 20     |                  | 98  | 65.8 | 8.39 | 50.0           | 58.0            | 60.0            | 64.0            | 70.0            | 80.0            | 85.2            |      |
| 21     |                  | 103 | 64.8 | 7.77 | 50.0           | 56.0            | 60.0            | 64.0            | 70.0            | 75.2            | 83.8            |      |
| 22     |                  | 90  | 65.8 | 9.39 | 50.0           | 56.0            | 60.0            | 64.0            | 70.0            | 80.0            | 86.5            |      |

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Table 4-2-2-2-60 Pressure difference (mmHg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 172 | 34.6 | 8.17  | 20.4           | 24.0            | 30.0            | 34.0            | 40.0            | 46.0            | 50.0            |      |
|        | 7                | 221 | 35.9 | 8.72  | 20.0           | 26.0            | 30.0            | 34.0            | 42.0            | 46.0            | 52.0            |      |
|        | 8                | 196 | 35.7 | 9.07  | 21.8           | 24.0            | 30.0            | 34.5            | 42.0            | 48.0            | 56.0            |      |
|        | 9                | 193 | 37.0 | 10.09 | 20.0           | 24.0            | 30.0            | 36.0            | 42.0            | 51.2            | 58.4            |      |
|        | 10               | 185 | 39.5 | 10.06 | 20.0           | 26.0            | 32.0            | 40.0            | 46.0            | 52.0            | 58.8            |      |
|        | 11               | 176 | 40.0 | 9.14  | 26.0           | 30.0            | 32.5            | 40.0            | 46.0            | 52.0            | 59.4            |      |
|        | 12               | 188 | 42.6 | 11.57 | 22.0           | 28.0            | 36.0            | 42.0            | 50.0            | 60.0            | 64.7            |      |
|        | 13               | 178 | 45.1 | 12.74 | 22.7           | 30.0            | 38.0            | 44.0            | 52.0            | 62.0            | 74.5            |      |
|        | 14               | 182 | 44.4 | 11.88 | 25.0           | 30.0            | 36.0            | 43.0            | 50.0            | 60.0            | 72.0            |      |
|        | 15               | 179 | 46.9 | 12.16 | 24.8           | 34.0            | 38.0            | 46.0            | 54.0            | 62.0            | 73.2            |      |
|        | 16               | 174 | 45.2 | 12.29 | 22.0           | 32.0            | 38.0            | 44.0            | 52.0            | 62.0            | 70.0            |      |
|        | 17               | 166 | 45.9 | 11.49 | 26.0           | 32.0            | 38.0            | 44.0            | 54.0            | 60.0            | 70.0            |      |
|        | 18               | 162 | 44.9 | 11.42 | 24.7           | 30.0            | 36.0            | 46.0            | 52.0            | 58.0            | 70.4            |      |
|        | 19               | 120 | 46.2 | 11.98 | 26.0           | 32.0            | 36.0            | 44.0            | 54.0            | 62.0            | 70.2            |      |
|        | 20               | 102 | 44.4 | 11.01 | 26.2           | 30.0            | 36.8            | 42.0            | 50.0            | 61.4            | 69.6            |      |
|        | 21               | 99  | 42.9 | 8.96  | 28.0           | 30.0            | 38.0            | 40.0            | 50.0            | 55.0            | 60.0            |      |
|        | 22               | 82  | 42.2 | 7.69  | 26.9           | 30.6            | 37.5            | 42.0            | 48.0            | 52.0            | 56.0            |      |
|        | F                | 6   | 155  | 32.3  | 8.26           | 19.4            | 22.0            | 28.0            | 32.0            | 38.0            | 42.0            | 48.0 |
|        |                  | 7   | 164  | 33.3  | 7.44           | 20.0            | 24.0            | 26.5            | 34.0            | 40.0            | 43.0            | 48.0 |
|        |                  | 8   | 150  | 35.0  | 8.96           | 22.0            | 24.0            | 29.5            | 34.0            | 40.0            | 46.0            | 54.0 |
|        |                  | 9   | 165  | 36.6  | 8.13           | 22.0            | 26.0            | 30.0            | 36.0            | 42.0            | 46.0            | 52.1 |
|        |                  | 10  | 162  | 39.7  | 9.87           | 22.0            | 28.0            | 32.0            | 40.0            | 45.3            | 54.0            | 62.0 |
| 11     |                  | 151 | 38.5 | 9.47  | 24.0           | 26.0            | 30.0            | 38.0            | 46.0            | 50.0            | 58.0            |      |
| 12     |                  | 172 | 38.8 | 9.32  | 24.0           | 26.0            | 32.0            | 39.0            | 44.0            | 52.0            | 57.6            |      |
| 13     |                  | 164 | 39.6 | 10.19 | 23.9           | 28.0            | 32.0            | 39.5            | 46.0            | 52.0            | 60.1            |      |
| 14     |                  | 151 | 38.8 | 10.65 | 20.0           | 26.0            | 30.0            | 38.0            | 44.0            | 52.0            | 62.0            |      |
| 15     |                  | 198 | 39.4 | 10.20 | 22.0           | 28.0            | 31.5            | 40.0            | 46.0            | 52.2            | 62.0            |      |
| 16     |                  | 184 | 40.0 | 9.62  | 23.1           | 28.0            | 34.0            | 38.0            | 46.0            | 52.0            | 60.9            |      |
| 17     |                  | 167 | 37.0 | 8.73  | 20.1           | 25.6            | 32.0            | 36.0            | 43.0            | 48.0            | 52.0            |      |
| 18     |                  | 159 | 36.5 | 9.04  | 20.0           | 24.0            | 30.0            | 36.0            | 42.0            | 50.0            | 54.0            |      |
| 19     |                  | 127 | 34.9 | 9.14  | 17.7           | 22.0            | 30.0            | 35.0            | 40.0            | 46.0            | 50.3            |      |
| 20     |                  | 98  | 37.0 | 8.22  | 21.9           | 28.0            | 30.0            | 36.0            | 42.0            | 48.2            | 55.1            |      |
| 21     |                  | 103 | 35.5 | 8.51  | 20.0           | 25.6            | 30.0            | 34.0            | 40.0            | 49.2            | 56.0            |      |
| 22     |                  | 90  | 37.2 | 7.24  | 19.5           | 28.0            | 32.0            | 38.0            | 42.0            | 47.8            | 50.0            |      |

Table 4-2-2-2-61 Vital capacity (ml)

| Gender | Age group (year) | n   | Mean   | SD     | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |        |
|--------|------------------|-----|--------|--------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------|
| M      | 6                | 173 | 1217.3 | 213.75 | 781.0          | 971.0           | 1090.0          | 1195.0          | 1340.0          | 1479.0          | 1683.9          |        |
|        | 7                | 222 | 1361.2 | 273.76 | 878.0          | 1039.5          | 1192.5          | 1345.0          | 1527.5          | 1723.5          | 1942.4          |        |
|        | 8                | 196 | 1564.0 | 272.57 | 1059.0         | 1230.0          | 1387.5          | 1535.0          | 1745.0          | 1894.5          | 2136.4          |        |
|        | 9                | 193 | 1758.7 | 308.88 | 1145.0         | 1369.0          | 1565.0          | 1735.0          | 1947.5          | 2157.0          | 2391.8          |        |
|        | 10               | 185 | 1989.5 | 356.64 | 1314.0         | 1568.0          | 1755.0          | 1985.0          | 2177.5          | 2448.0          | 2717.7          |        |
|        | 11               | 176 | 2201.8 | 377.79 | 1561.0         | 1750.0          | 1963.8          | 2165.0          | 2462.5          | 2681.5          | 3005.0          |        |
|        | 12               | 188 | 2523.3 | 505.59 | 1700.0         | 1900.0          | 2126.3          | 2502.5          | 2853.8          | 3171.5          | 3709.3          |        |
|        | 13               | 178 | 2986.0 | 613.16 | 1959.0         | 2213.0          | 2558.8          | 2922.5          | 3407.5          | 3833.0          | 4277.8          |        |
|        | 14               | 182 | 3414.0 | 669.43 | 2047.0         | 2602.0          | 2962.5          | 3432.5          | 3852.5          | 4254.0          | 4752.7          |        |
|        | 15               | 179 | 3734.2 | 626.54 | 2601.0         | 3030.0          | 3310.0          | 3650.0          | 4110.0          | 4570.0          | 5174.0          |        |
|        | 16               | 174 | 3974.9 | 634.10 | 2718.0         | 3272.5          | 3543.8          | 3960.0          | 4330.0          | 4847.5          | 5478.8          |        |
|        | 17               | 166 | 4015.9 | 683.48 | 2870.0         | 3179.0          | 3560.0          | 4017.5          | 4483.8          | 4777.5          | 5344.9          |        |
|        | 18               | 162 | 4016.1 | 621.85 | 2774.0         | 3303.6          | 3667.5          | 3990.0          | 4362.5          | 4880.5          | 5264.4          |        |
|        | 19               | 120 | 4335.0 | 778.00 | 2864.0         | 3260.5          | 3735.0          | 4307.5          | 4892.5          | 5384.0          | 6007.2          |        |
|        | 20               | 102 | 4442.3 | 796.21 | 3123.0         | 3420.0          | 3901.3          | 4297.5          | 5048.8          | 5549.0          | 5886.0          |        |
|        | 21               | 99  | 4303.1 | 760.86 | 3150.0         | 3380.0          | 3745.0          | 4125.0          | 4760.0          | 5470.0          | 5820.0          |        |
|        | 22               | 82  | 4313.6 | 619.90 | 3222.0         | 3506.0          | 3892.5          | 4235.0          | 4886.3          | 4985.0          | 5448.6          |        |
|        | F                | 6   | 155    | 1115.4 | 227.49         | 637.0           | 798.0           | 985.0           | 1135.0          | 1255.0          | 1410.0          | 1514.8 |
|        |                  | 7   | 165    | 1271.5 | 195.37         | 875.0           | 1035.0          | 1132.5          | 1275.0          | 1402.5          | 1537.0          | 1615.2 |
|        |                  | 8   | 150    | 1393.7 | 259.05         | 920.0           | 1065.5          | 1208.8          | 1400.0          | 1538.8          | 1748.5          | 1944.7 |
|        |                  | 9   | 165    | 1615.7 | 281.37         | 1125.0          | 1311.0          | 1425.0          | 1560.0          | 1772.5          | 1991.0          | 2211.6 |
|        |                  | 10  | 163    | 1815.2 | 362.07         | 1069.0          | 1371.0          | 1580.0          | 1790.0          | 2030.0          | 2306.0          | 2582.0 |
| 11     |                  | 151 | 2120.4 | 361.94 | 1394.0         | 1686.0          | 1915.0          | 2095.0          | 2340.0          | 2542.0          | 2863.8          |        |
| 12     |                  | 172 | 2286.4 | 384.63 | 1467.0         | 1785.0          | 2051.3          | 2282.5          | 2558.8          | 2735.5          | 3020.3          |        |
| 13     |                  | 164 | 2491.6 | 461.37 | 1675.0         | 1970.0          | 2170.0          | 2480.0          | 2742.5          | 3050.0          | 3367.0          |        |
| 14     |                  | 151 | 2491.8 | 406.11 | 1702.0         | 1899.0          | 2230.0          | 2505.0          | 2785.0          | 2974.0          | 3229.0          |        |
| 15     |                  | 198 | 2708.7 | 452.35 | 1940.0         | 2103.5          | 2390.0          | 2695.0          | 2990.0          | 3290.0          | 3711.7          |        |
| 16     |                  | 184 | 2701.9 | 478.23 | 1904.0         | 2152.5          | 2366.3          | 2652.5          | 2947.5          | 3280.0          | 3795.0          |        |
| 17     |                  | 167 | 2716.3 | 430.24 | 2021.0         | 2187.0          | 2410.0          | 2690.0          | 3000.0          | 3220.0          | 3638.8          |        |
| 18     |                  | 159 | 2795.6 | 394.37 | 2098.0         | 2305.0          | 2560.0          | 2775.0          | 2985.0          | 3285.0          | 3677.0          |        |
| 19     |                  | 127 | 2793.8 | 543.87 | 1845.0         | 2113.0          | 2380.0          | 2735.0          | 3085.0          | 3493.0          | 4164.8          |        |
| 20     |                  | 98  | 2866.9 | 551.72 | 1810.0         | 2189.0          | 2493.8          | 2815.0          | 3161.3          | 3713.5          | 3988.6          |        |
| 21     |                  | 103 | 2958.4 | 539.11 | 2012.0         | 2277.0          | 2530.0          | 3000.0          | 3280.0          | 3729.0          | 4054.0          |        |
| 22     |                  | 90  | 2930.2 | 556.72 | 1994.0         | 2148.5          | 2483.8          | 2990.0          | 3285.0          | 3684.5          | 4126.1          |        |

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Table 4-2-2-2-62 Vital capacity/weight (ml/kg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 56.3 | 10.80 | 36.1           | 43.8            | 48.2            | 56.0            | 62.4            | 71.2            | 79.2            |      |
|        | 7                | 222 | 57.2 | 12.18 | 33.6           | 43.2            | 49.8            | 57.3            | 64.0            | 71.5            | 80.6            |      |
|        | 8                | 196 | 58.0 | 11.53 | 34.8           | 42.4            | 49.2            | 58.2            | 66.5            | 71.7            | 80.6            |      |
|        | 9                | 193 | 58.0 | 12.44 | 34.4           | 39.9            | 49.9            | 59.3            | 65.7            | 72.4            | 80.9            |      |
|        | 10               | 185 | 58.3 | 11.25 | 35.4           | 43.9            | 50.1            | 58.2            | 66.2            | 71.7            | 81.3            |      |
|        | 11               | 176 | 56.3 | 10.91 | 36.0           | 41.9            | 47.7            | 56.4            | 63.7            | 70.6            | 76.5            |      |
|        | 12               | 188 | 58.3 | 11.28 | 37.4           | 43.3            | 49.9            | 58.7            | 65.9            | 73.8            | 79.8            |      |
|        | 13               | 178 | 62.2 | 11.09 | 42.9           | 47.8            | 53.9            | 62.1            | 69.4            | 76.1            | 85.6            |      |
|        | 14               | 182 | 63.7 | 11.65 | 41.6           | 47.4            | 56.6            | 62.9            | 72.2            | 79.5            | 85.9            |      |
|        | 15               | 179 | 67.2 | 11.13 | 49.0           | 54.7            | 60.9            | 66.4            | 74.5            | 83.7            | 88.9            |      |
|        | 16               | 174 | 69.4 | 11.27 | 46.7           | 54.2            | 62.2            | 69.3            | 76.3            | 83.6            | 91.3            |      |
|        | 17               | 166 | 69.3 | 11.19 | 43.0           | 54.6            | 62.7            | 71.0            | 77.1            | 83.1            | 87.7            |      |
|        | 18               | 162 | 68.0 | 10.33 | 46.6           | 55.6            | 62.0            | 68.1            | 75.5            | 81.0            | 86.0            |      |
|        | 19               | 120 | 72.0 | 11.75 | 50.8           | 57.5            | 63.6            | 71.6            | 81.0            | 88.4            | 93.5            |      |
|        | 20               | 102 | 72.5 | 11.47 | 54.5           | 58.3            | 62.9            | 72.0            | 80.6            | 88.5            | 95.0            |      |
|        | 21               | 99  | 71.2 | 13.63 | 48.4           | 56.5            | 61.4            | 69.4            | 80.2            | 89.8            | 98.8            |      |
|        | 22               | 82  | 71.7 | 11.79 | 52.3           | 56.1            | 63.2            | 70.1            | 81.1            | 87.1            | 95.1            |      |
|        | F                | 6   | 155  | 53.5  | 10.31          | 35.1            | 39.6            | 44.9            | 55.1            | 59.9            | 66.1            | 69.7 |
|        |                  | 7   | 165  | 55.1  | 10.14          | 34.5            | 40.2            | 48.3            | 56.2            | 62.4            | 67.4            | 71.7 |
|        |                  | 8   | 150  | 54.7  | 10.04          | 36.0            | 41.9            | 47.2            | 55.3            | 60.5            | 67.3            | 73.9 |
|        |                  | 9   | 165  | 54.1  | 10.09          | 33.9            | 41.3            | 47.4            | 54.1            | 61.3            | 66.8            | 71.7 |
|        |                  | 10  | 163  | 54.2  | 10.74          | 28.0            | 40.1            | 47.5            | 55.0            | 61.6            | 66.4            | 73.4 |
| 11     |                  | 151 | 54.6 | 9.10  | 36.4           | 41.1            | 48.4            | 55.7            | 60.6            | 65.7            | 69.2            |      |
| 12     |                  | 172 | 54.7 | 9.56  | 33.6           | 43.2            | 49.3            | 55.1            | 61.5            | 65.9            | 70.8            |      |
| 13     |                  | 164 | 54.3 | 10.55 | 32.5           | 40.4            | 47.9            | 54.8            | 61.5            | 66.5            | 73.7            |      |
| 14     |                  | 151 | 53.7 | 9.41  | 36.9           | 41.6            | 47.4            | 54.2            | 59.2            | 65.8            | 72.0            |      |
| 15     |                  | 198 | 55.4 | 9.38  | 40.0           | 43.6            | 49.1            | 54.7            | 61.2            | 66.5            | 73.9            |      |
| 16     |                  | 184 | 55.6 | 9.54  | 36.9           | 43.1            | 50.0            | 55.6            | 61.7            | 67.3            | 74.3            |      |
| 17     |                  | 167 | 55.3 | 9.22  | 36.1           | 41.2            | 48.8            | 56.8            | 61.7            | 66.3            | 71.8            |      |
| 18     |                  | 159 | 57.4 | 9.27  | 41.5           | 46.9            | 51.1            | 57.0            | 62.0            | 68.9            | 77.9            |      |
| 19     |                  | 127 | 57.4 | 11.04 | 37.6           | 42.4            | 49.7            | 57.0            | 63.7            | 72.3            | 81.7            |      |
| 20     |                  | 98  | 59.4 | 11.48 | 37.8           | 44.8            | 52.2            | 58.4            | 66.6            | 75.0            | 82.7            |      |
| 21     |                  | 103 | 61.7 | 11.47 | 42.3           | 47.1            | 53.9            | 62.0            | 69.0            | 76.3            | 85.4            |      |
| 22     |                  | 90  | 60.7 | 10.58 | 41.5           | 48.3            | 52.8            | 60.1            | 66.7            | 75.0            | 86.2            |      |

## 4.2.5 Physical Fitness

Table 4-2-2-2-63 50 m run (sec)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 168 | 12.3 | 1.20 | 10.1           | 10.9            | 11.5            | 12.1            | 12.9            | 13.8            | 15.4            |      |
|        | 7                | 220 | 11.5 | 1.23 | 9.9            | 10.2            | 10.8            | 11.4            | 12.2            | 12.9            | 13.9            |      |
|        | 8                | 195 | 10.8 | 0.91 | 9.2            | 9.8             | 10.2            | 10.8            | 11.5            | 12.0            | 12.5            |      |
|        | 9                | 191 | 10.4 | 1.08 | 8.8            | 9.2             | 9.6             | 10.2            | 11.0            | 11.8            | 12.9            |      |
|        | 10               | 180 | 10.0 | 0.82 | 8.5            | 8.9             | 9.4             | 9.8             | 10.5            | 11.0            | 11.8            |      |
|        | 11               | 172 | 9.8  | 0.83 | 8.3            | 8.8             | 9.2             | 9.7             | 10.4            | 10.8            | 11.7            |      |
|        | 12               | 184 | 9.3  | 1.10 | 7.9            | 8.2             | 8.7             | 9.2             | 9.8             | 10.5            | 11.2            |      |
|        | 13               | 173 | 8.6  | 0.73 | 7.3            | 7.7             | 8.1             | 8.5             | 9.1             | 9.6             | 10.0            |      |
|        | 14               | 179 | 8.3  | 0.67 | 7.2            | 7.5             | 7.8             | 8.2             | 8.7             | 9.3             | 9.9             |      |
|        | 15               | 176 | 8.1  | 0.73 | 6.8            | 7.2             | 7.5             | 8.0             | 8.5             | 8.9             | 9.8             |      |
|        | 16               | 165 | 8.0  | 0.78 | 6.9            | 7.1             | 7.4             | 7.8             | 8.3             | 8.9             | 10.1            |      |
|        | 17               | 155 | 7.9  | 0.77 | 6.9            | 7.1             | 7.4             | 7.8             | 8.2             | 8.8             | 10.0            |      |
|        | 18               | 143 | 8.0  | 0.86 | 6.8            | 7.0             | 7.4             | 7.9             | 8.3             | 9.1             | 10.4            |      |
|        | 19               | 105 | 7.8  | 0.73 | 6.8            | 7.1             | 7.3             | 7.6             | 8.0             | 8.8             | 9.6             |      |
|        | 20               | 86  | 8.0  | 1.07 | 6.9            | 7.2             | 7.4             | 7.8             | 8.4             | 9.0             | 10.7            |      |
|        | 21               | 77  | 7.8  | 0.57 | 6.7            | 7.0             | 7.4             | 7.8             | 8.3             | 8.6             | 8.8             |      |
|        | 22               | 69  | 8.3  | 0.73 | 6.8            | 7.2             | 7.8             | 8.4             | 8.9             | 9.1             | 9.4             |      |
|        | F                | 6   | 147  | 12.7 | 1.09           | 11.1            | 11.4            | 11.8            | 12.8            | 13.4            | 14.2            | 14.8 |
|        |                  | 7   | 157  | 11.9 | 0.92           | 10.2            | 10.8            | 11.3            | 11.9            | 12.5            | 13.0            | 13.9 |
|        |                  | 8   | 144  | 11.2 | 0.99           | 9.5             | 10.2            | 10.7            | 11.2            | 11.8            | 12.5            | 13.6 |
|        |                  | 9   | 160  | 10.7 | 0.94           | 9.2             | 9.6             | 10.1            | 10.6            | 11.3            | 11.9            | 12.8 |
|        |                  | 10  | 160  | 10.5 | 0.88           | 9.0             | 9.4             | 9.9             | 10.4            | 10.9            | 11.5            | 11.9 |
| 11     |                  | 146 | 9.9  | 0.72 | 8.6            | 9.0             | 9.4             | 9.8             | 10.3            | 10.7            | 11.4            |      |
| 12     |                  | 167 | 10.0 | 0.90 | 8.5            | 8.9             | 9.3             | 9.9             | 10.5            | 11.0            | 12.0            |      |
| 13     |                  | 157 | 10.1 | 0.99 | 8.5            | 8.8             | 9.3             | 10.1            | 10.7            | 11.4            | 11.9            |      |
| 14     |                  | 148 | 10.0 | 1.06 | 8.5            | 8.8             | 9.3             | 9.9             | 10.6            | 11.3            | 12.1            |      |
| 15     |                  | 191 | 9.9  | 0.98 | 8.2            | 8.8             | 9.4             | 9.8             | 10.3            | 11.2            | 11.9            |      |
| 16     |                  | 172 | 9.9  | 0.84 | 8.5            | 8.8             | 9.3             | 9.8             | 10.4            | 11.1            | 11.6            |      |
| 17     |                  | 154 | 9.8  | 0.97 | 8.2            | 8.6             | 9.1             | 9.8             | 10.5            | 11.0            | 11.7            |      |
| 18     |                  | 151 | 10.0 | 1.07 | 8.3            | 8.7             | 9.3             | 9.9             | 10.6            | 11.2            | 12.7            |      |
| 19     |                  | 107 | 10.1 | 1.02 | 8.0            | 9.2             | 9.4             | 9.9             | 10.6            | 11.3            | 12.8            |      |
| 20     |                  | 84  | 10.0 | 0.97 | 8.5            | 8.9             | 9.3             | 9.9             | 10.7            | 11.3            | 12.4            |      |
| 21     |                  | 82  | 10.1 | 1.01 | 8.3            | 9.0             | 9.4             | 10.0            | 10.7            | 11.4            | 12.6            |      |
| 22     |                  | 83  | 10.3 | 0.88 | 8.3            | 9.2             | 9.7             | 10.4            | 10.8            | 11.2            | 11.9            |      |

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Table 4-2-2-2-64 Standing long jump (cm)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |       |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| M      | 6                | 160 | 101.8 | 16.55 | 71.0           | 81.2            | 90.0            | 101.0           | 113.8           | 123.0           | 130.2           |       |
|        | 7                | 212 | 113.7 | 16.79 | 80.0           | 89.3            | 103.3           | 114.0           | 125.0           | 135.0           | 145.6           |       |
|        | 8                | 193 | 120.9 | 16.64 | 91.0           | 98.0            | 110.0           | 121.0           | 131.0           | 140.0           | 155.0           |       |
|        | 9                | 190 | 132.2 | 19.50 | 92.0           | 106.0           | 120.0           | 131.5           | 145.0           | 155.9           | 169.3           |       |
|        | 10               | 184 | 133.4 | 20.64 | 87.0           | 109.5           | 121.0           | 135.5           | 148.0           | 156.5           | 168.0           |       |
|        | 11               | 175 | 141.5 | 19.84 | 105.0          | 118.0           | 128.0           | 141.0           | 155.0           | 167.4           | 183.4           |       |
|        | 12               | 188 | 154.3 | 65.52 | 110.0          | 122.9           | 137.3           | 149.0           | 162.0           | 179.0           | 195.0           |       |
|        | 13               | 178 | 169.4 | 24.31 | 127.0          | 140.0           | 150.0           | 167.5           | 186.3           | 202.2           | 216.0           |       |
|        | 14               | 182 | 178.0 | 24.93 | 133.0          | 146.0           | 157.8           | 177.0           | 198.0           | 210.7           | 220.5           |       |
|        | 15               | 179 | 195.2 | 66.06 | 140.0          | 160.0           | 173.0           | 189.0           | 208.0           | 228.0           | 254.4           |       |
|        | 16               | 174 | 201.0 | 65.88 | 141.0          | 167.0           | 180.8           | 198.0           | 213.0           | 228.5           | 247.5           |       |
|        | 17               | 166 | 209.6 | 91.24 | 146.0          | 167.8           | 183.0           | 198.5           | 218.0           | 236.3           | 253.0           |       |
|        | 18               | 162 | 205.9 | 30.08 | 138.0          | 166.6           | 186.0           | 208.0           | 224.0           | 245.0           | 260.0           |       |
|        | 19               | 120 | 206.9 | 29.24 | 145.0          | 166.2           | 191.0           | 208.0           | 221.0           | 244.0           | 265.0           |       |
|        | 20               | 102 | 205.3 | 29.56 | 142.0          | 161.0           | 185.8           | 206.5           | 227.0           | 243.7           | 250.0           |       |
|        | 21               | 99  | 205.4 | 29.58 | 148.0          | 159.0           | 186.0           | 209.0           | 228.0           | 244.0           | 256.0           |       |
|        | 22               | 82  | 213.5 | 91.58 | 160.0          | 168.0           | 181.5           | 203.0           | 224.5           | 241.7           | 252.5           |       |
|        | F                | 6   | 138   | 95.3  | 15.07          | 63.0            | 74.9            | 85.0            | 95.0            | 106.0           | 115.1           | 122.8 |
|        |                  | 7   | 154   | 102.1 | 14.63          | 76.0            | 82.0            | 92.0            | 103.0           | 110.0           | 120.0           | 132.0 |
|        |                  | 8   | 144   | 114.3 | 15.16          | 86.0            | 95.0            | 104.3           | 113.5           | 124.0           | 133.0           | 141.7 |
|        |                  | 9   | 156   | 119.9 | 15.23          | 87.0            | 101.7           | 110.0           | 121.0           | 130.0           | 138.0           | 145.9 |
|        |                  | 10  | 162   | 126.0 | 15.27          | 97.0            | 107.3           | 115.0           | 126.5           | 138.0           | 146.0           | 153.3 |
| 11     |                  | 149 | 133.0 | 17.21 | 101.0          | 114.0           | 122.0           | 132.0           | 143.5           | 156.0           | 172.0           |       |
| 12     |                  | 171 | 134.2 | 69.50 | 96.0           | 104.0           | 115.0           | 127.0           | 142.0           | 162.8           | 170.0           |       |
| 13     |                  | 161 | 133.7 | 20.05 | 101.0          | 108.0           | 119.5           | 132.0           | 146.5           | 159.6           | 177.1           |       |
| 14     |                  | 151 | 135.6 | 18.07 | 103.0          | 111.0           | 123.0           | 134.0           | 147.0           | 158.8           | 171.4           |       |
| 15     |                  | 196 | 144.1 | 64.17 | 107.0          | 117.7           | 126.0           | 138.0           | 153.8           | 166.3           | 180.1           |       |
| 16     |                  | 183 | 140.1 | 18.86 | 104.0          | 117.0           | 128.0           | 138.0           | 152.0           | 165.0           | 179.8           |       |
| 17     |                  | 165 | 145.9 | 70.10 | 107.0          | 116.0           | 127.0           | 140.0           | 153.5           | 170.0           | 191.1           |       |
| 18     |                  | 158 | 142.8 | 20.14 | 109.0          | 117.8           | 128.0           | 142.0           | 153.0           | 173.0           | 185.7           |       |
| 19     |                  | 127 | 145.7 | 18.31 | 112.0          | 123.6           | 133.0           | 144.0           | 158.0           | 169.2           | 186.1           |       |
| 20     |                  | 97  | 152.5 | 88.73 | 108.0          | 119.0           | 130.5           | 144.0           | 156.0           | 168.4           | 183.7           |       |
| 21     |                  | 103 | 144.5 | 18.30 | 118.0          | 120.4           | 130.0           | 143.0           | 157.0           | 170.8           | 179.0           |       |
| 22     |                  | 90  | 153.4 | 91.48 | 115.0          | 123.1           | 134.8           | 142.5           | 153.3           | 165.8           | 182.5           |       |

Table 4-2-2-2-65 Vertical jump (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 19.6 | 3.88 | 13.0           | 15.5            | 17.1            | 19.5            | 21.8            | 24.4            | 27.8            |      |
|        | 7                | 222 | 20.9 | 4.03 | 14.0           | 16.4            | 17.9            | 20.8            | 23.2            | 26.3            | 29.5            |      |
|        | 8                | 196 | 22.2 | 4.16 | 15.0           | 16.3            | 19.2            | 22.2            | 25.4            | 27.3            | 29.7            |      |
|        | 9                | 193 | 24.3 | 4.97 | 17.0           | 18.1            | 20.6            | 23.4            | 27.7            | 30.9            | 35.3            |      |
|        | 10               | 185 | 24.6 | 4.79 | 15.0           | 19.0            | 21.4            | 24.4            | 27.9            | 31.0            | 34.1            |      |
|        | 11               | 176 | 26.9 | 4.87 | 18.0           | 20.9            | 23.8            | 26.5            | 29.9            | 33.0            | 37.8            |      |
|        | 12               | 188 | 29.0 | 5.45 | 18.0           | 21.7            | 25.6            | 29.1            | 33.1            | 36.2            | 39.1            |      |
|        | 13               | 178 | 33.2 | 6.15 | 22.0           | 25.0            | 28.7            | 33.4            | 38.2            | 41.1            | 44.0            |      |
|        | 14               | 182 | 35.5 | 7.20 | 22.0           | 25.4            | 30.9            | 35.1            | 40.5            | 44.7            | 49.5            |      |
|        | 15               | 179 | 38.8 | 9.79 | 26.0           | 28.8            | 33.5            | 37.5            | 43.1            | 49.0            | 56.0            |      |
|        | 16               | 174 | 39.8 | 6.67 | 27.0           | 31.1            | 35.6            | 39.5            | 43.6            | 49.3            | 53.4            |      |
|        | 17               | 166 | 40.6 | 7.56 | 26.0           | 30.8            | 35.7            | 40.3            | 44.6            | 50.9            | 56.1            |      |
|        | 18               | 162 | 41.2 | 7.65 | 27.0           | 31.8            | 36.2            | 40.8            | 45.6            | 52.1            | 57.8            |      |
|        | 19               | 120 | 41.9 | 7.67 | 25.0           | 32.1            | 36.8            | 42.6            | 46.7            | 52.1            | 56.8            |      |
|        | 20               | 102 | 41.6 | 6.96 | 29.0           | 32.3            | 35.8            | 42.0            | 47.2            | 49.3            | 54.2            |      |
|        | 21               | 99  | 42.0 | 6.18 | 32.0           | 34.7            | 37.7            | 41.3            | 46.1            | 52.4            | 54.2            |      |
|        | 22               | 82  | 42.9 | 9.22 | 29.0           | 33.3            | 37.9            | 43.5            | 47.0            | 49.7            | 54.6            |      |
|        | F                | 6   | 155  | 18.9 | 3.39           | 13.0            | 14.2            | 16.6            | 19.3            | 21.0            | 23.0            | 24.9 |
|        |                  | 7   | 165  | 19.3 | 3.53           | 13.0            | 15.1            | 16.9            | 19.0            | 21.4            | 23.7            | 26.3 |
|        |                  | 8   | 150  | 21.2 | 3.84           | 14.0            | 16.2            | 18.4            | 20.8            | 23.9            | 26.4            | 29.1 |
|        |                  | 9   | 165  | 21.3 | 3.83           | 14.0            | 16.6            | 18.3            | 20.7            | 24.0            | 27.0            | 28.7 |
|        |                  | 10  | 163  | 22.7 | 3.46           | 17.0            | 18.0            | 20.4            | 22.7            | 25.0            | 27.1            | 29.6 |
| 11     |                  | 151 | 25.4 | 7.15 | 18.0           | 20.1            | 22.1            | 24.7            | 27.6            | 30.0            | 32.3            |      |
| 12     |                  | 172 | 25.4 | 7.26 | 17.0           | 19.1            | 22.0            | 24.7            | 28.3            | 30.9            | 35.3            |      |
| 13     |                  | 164 | 24.1 | 5.09 | 15.0           | 17.8            | 20.3            | 23.9            | 27.5            | 31.3            | 33.7            |      |
| 14     |                  | 151 | 23.6 | 3.80 | 17.0           | 18.6            | 21.1            | 23.2            | 25.7            | 28.2            | 31.5            |      |
| 15     |                  | 198 | 24.9 | 4.39 | 17.0           | 19.2            | 21.7            | 24.8            | 27.7            | 31.1            | 34.5            |      |
| 16     |                  | 184 | 25.3 | 4.15 | 17.0           | 20.3            | 22.6            | 24.9            | 27.9            | 30.2            | 33.4            |      |
| 17     |                  | 167 | 25.4 | 4.95 | 17.0           | 18.8            | 22.0            | 24.8            | 28.8            | 31.8            | 36.1            |      |
| 18     |                  | 159 | 24.7 | 4.25 | 17.0           | 19.2            | 22.1            | 23.9            | 27.2            | 30.7            | 34.3            |      |
| 19     |                  | 127 | 25.1 | 4.56 | 17.0           | 19.8            | 22.2            | 24.7            | 28.3            | 30.9            | 35.4            |      |
| 20     |                  | 98  | 25.8 | 8.62 | 18.0           | 19.3            | 21.8            | 25.2            | 27.4            | 31.1            | 34.6            |      |
| 21     |                  | 103 | 25.3 | 3.94 | 19.0           | 20.4            | 22.7            | 25.3            | 27.1            | 30.0            | 35.5            |      |
| 22     |                  | 90  | 25.1 | 4.18 | 18.0           | 20.5            | 22.8            | 24.4            | 27.1            | 29.7            | 35.4            |      |

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Table 4-2-2-2-66 Pull-ups with body inclined/Pull-ups/One-minute sit-ups (time)

| Gender | Age group (year) | n    | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|------|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173  | 10.3 | 6.67  | 1.0            | 3.0             | 6.0             | 10.0            | 13.0            | 18.6            | 29.6            |      |
|        | 7                | 222  | 13.2 | 7.92  | 1.0            | 4.0             | 8.0             | 12.0            | 18.0            | 23.0            | 30.0            |      |
|        | 8                | 195  | 12.7 | 8.86  | 1.0            | 2.0             | 6.0             | 10.0            | 19.0            | 28.8            | 31.0            |      |
|        | 9                | 193  | 13.7 | 12.26 | 0.0            | 3.0             | 5.0             | 10.0            | 20.0            | 30.0            | 41.0            |      |
|        | 10               | 184  | 13.0 | 10.34 | 0.0            | 3.0             | 5.0             | 11.0            | 16.8            | 26.0            | 40.0            |      |
|        | 11               | 176  | 12.9 | 9.45  | 0.0            | 3.0             | 6.0             | 10.0            | 19.0            | 27.6            | 34.1            |      |
|        | 12               | 187  | 12.5 | 10.05 | 0.0            | 0.0             | 5.0             | 11.0            | 19.0            | 25.0            | 36.4            |      |
|        | 13               | 178  | 1.2  | 4.48  | 0.0            | 0.0             | 0.0             | 0.0             | 0.0             | 2.1             | 15.0            |      |
|        | 14               | 182  | 0.9  | 1.72  | 0.0            | 0.0             | 0.0             | 0.0             | 1.0             | 3.0             | 6.0             |      |
|        | 15               | 176  | 1.5  | 2.27  | 0.0            | 0.0             | 0.0             | 1.0             | 2.0             | 5.0             | 7.7             |      |
|        | 16               | 173  | 2.0  | 2.35  | 0.0            | 0.0             | 0.0             | 1.0             | 3.0             | 5.0             | 8.0             |      |
|        | 17               | 166  | 2.6  | 2.67  | 0.0            | 0.0             | 0.0             | 2.0             | 4.0             | 7.0             | 9.0             |      |
|        | 18               | 162  | 2.6  | 2.59  | 0.0            | 0.0             | 0.0             | 2.0             | 4.0             | 6.0             | 9.1             |      |
|        | 19               | 119  | 3.1  | 3.06  | 0.0            | 0.0             | 0.0             | 3.0             | 5.0             | 7.0             | 11.0            |      |
|        | 20               | 102  | 2.8  | 2.67  | 0.0            | 0.0             | 0.8             | 2.0             | 5.0             | 7.0             | 8.9             |      |
|        | 21               | 99   | 2.9  | 2.80  | 0.0            | 0.0             | 0.0             | 2.0             | 4.0             | 6.0             | 10.0            |      |
|        | 22               | 82   | 3.1  | 2.84  | 0.0            | 0.0             | 1.0             | 2.0             | 5.0             | 8.0             | 9.5             |      |
|        | F                | 6    | 154  | 12.0  | 7.19           | 0.0             | 2.0             | 7.0             | 12.0            | 17.0            | 23.0            | 25.3 |
|        |                  | 7    | 165  | 13.9  | 7.39           | 0.0             | 3.6             | 8.0             | 14.0            | 19.5            | 23.4            | 28.0 |
|        |                  | 8    | 150  | 15.8  | 7.85           | 0.0             | 3.0             | 11.0            | 17.0            | 21.0            | 25.0            | 29.0 |
|        |                  | 9    | 165  | 18.6  | 9.19           | 0.0             | 5.0             | 12.0            | 19.0            | 25.0            | 31.0            | 35.0 |
|        |                  | 10   | 163  | 19.3  | 8.83           | 0.0             | 7.0             | 14.0            | 20.0            | 26.0            | 30.0            | 35.1 |
| 11     |                  | 151  | 23.8 | 7.59  | 10.0           | 13.2            | 19.0            | 24.0            | 28.0            | 34.0            | 39.4            |      |
| 12     |                  | 170  | 23.8 | 7.49  | 9.0            | 14.0            | 19.0            | 24.0            | 29.0            | 34.0            | 37.0            |      |
| 13     |                  | 164  | 24.0 | 8.98  | 4.0            | 12.0            | 18.3            | 25.0            | 30.0            | 35.0            | 41.0            |      |
| 14     |                  | 150  | 25.2 | 7.44  | 8.0            | 15.1            | 21.0            | 26.0            | 31.0            | 34.0            | 38.0            |      |
| 15     |                  | 198  | 26.0 | 8.02  | 10.0           | 15.9            | 21.0            | 26.0            | 31.3            | 36.0            | 41.0            |      |
| 16     |                  | 184  | 25.7 | 8.06  | 7.0            | 17.0            | 20.0            | 26.0            | 31.0            | 36.0            | 40.0            |      |
| 17     |                  | 164  | 25.1 | 8.72  | 9.0            | 13.5            | 20.0            | 26.0            | 30.0            | 36.0            | 41.0            |      |
| 18     |                  | 159  | 24.3 | 9.23  | 6.0            | 12.0            | 19.0            | 25.0            | 30.0            | 36.0            | 43.0            |      |
| 19     |                  | 126  | 24.1 | 8.82  | 2.0            | 12.7            | 18.8            | 25.0            | 30.3            | 34.0            | 39.2            |      |
| 20     |                  | 98   | 22.7 | 7.80  | 6.0            | 13.0            | 17.0            | 23.0            | 28.0            | 32.1            | 38.1            |      |
| 21     |                  | 102  | 23.0 | 8.63  | 1.0            | 12.3            | 18.0            | 23.0            | 29.0            | 35.0            | 37.9            |      |
| 22     | 90               | 20.5 | 6.72 | 7.0   | 12.0           | 16.0            | 21.0            | 25.0            | 28.0            | 33.8            |                 |      |

Note: Pull-ups with body inclined was for male subjects aged 6~12; Pull-ups was for male subjects ages 13~22; Sit-ups was for female subjects aged 6~22.

Table 4-2-2-2-67 Grip strength (kg)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 8.3  | 1.86 | 4.4            | 6.2             | 7.2             | 8.1             | 9.6             | 10.5            | 11.8            |      |
|        | 7                | 222 | 10.1 | 3.42 | 5.5            | 6.6             | 8.3             | 9.8             | 11.7            | 13.5            | 15.5            |      |
|        | 8                | 196 | 10.9 | 2.35 | 6.8            | 7.9             | 9.3             | 10.9            | 12.7            | 13.9            | 15.0            |      |
|        | 9                | 193 | 13.5 | 3.74 | 8.6            | 9.9             | 11.5            | 13.0            | 15.3            | 17.0            | 19.2            |      |
|        | 10               | 185 | 15.0 | 3.20 | 9.2            | 11.1            | 13.1            | 15.0            | 16.9            | 19.1            | 21.5            |      |
|        | 11               | 176 | 17.1 | 3.70 | 10.8           | 12.5            | 14.6            | 16.8            | 19.4            | 22.0            | 25.9            |      |
|        | 12               | 188 | 20.9 | 4.89 | 13.5           | 15.9            | 17.5            | 20.1            | 23.3            | 27.3            | 32.9            |      |
|        | 13               | 178 | 25.9 | 6.05 | 15.7           | 18.7            | 21.2            | 25.3            | 30.4            | 34.5            | 37.6            |      |
|        | 14               | 182 | 30.8 | 6.70 | 18.2           | 22.2            | 26.2            | 30.8            | 34.8            | 38.9            | 45.6            |      |
|        | 15               | 179 | 33.8 | 5.41 | 24.1           | 27.5            | 30.0            | 33.5            | 37.1            | 41.1            | 45.3            |      |
|        | 16               | 174 | 36.6 | 6.54 | 24.3           | 27.4            | 31.9            | 37.0            | 41.0            | 44.5            | 49.3            |      |
|        | 17               | 166 | 37.3 | 7.22 | 24.4           | 28.8            | 32.7            | 37.8            | 41.1            | 45.4            | 51.7            |      |
|        | 18               | 162 | 39.5 | 6.68 | 26.5           | 30.8            | 35.1            | 39.8            | 43.2            | 46.9            | 53.1            |      |
|        | 19               | 120 | 39.1 | 7.24 | 27.1           | 30.9            | 33.9            | 38.9            | 43.0            | 48.8            | 54.6            |      |
|        | 20               | 102 | 41.1 | 6.59 | 29.7           | 32.1            | 36.2            | 41.6            | 46.0            | 49.2            | 54.6            |      |
|        | 21               | 99  | 40.3 | 6.67 | 28.3           | 31.6            | 35.5            | 39.9            | 44.5            | 49.8            | 54.3            |      |
|        | 22               | 82  | 38.9 | 5.50 | 30.0           | 32.7            | 35.1            | 37.5            | 44.1            | 46.8            | 49.7            |      |
|        | F                | 6   | 154  | 7.2  | 2.11           | 3.1             | 4.5             | 5.4             | 7.3             | 8.7             | 9.4             | 11.4 |
|        |                  | 7   | 165  | 8.7  | 2.14           | 4.0             | 6.0             | 7.2             | 9.0             | 10.3            | 11.5            | 12.7 |
|        |                  | 8   | 150  | 10.2 | 2.35           | 6.0             | 7.2             | 8.4             | 10.3            | 11.7            | 13.3            | 14.9 |
|        |                  | 9   | 165  | 12.3 | 2.84           | 7.3             | 8.4             | 10.4            | 12.3            | 14.2            | 16.2            | 18.1 |
|        |                  | 10  | 163  | 14.2 | 2.99           | 8.7             | 10.2            | 12.5            | 14.3            | 16.2            | 18.2            | 20.4 |
| 11     |                  | 150 | 17.3 | 3.22 | 11.5           | 13.3            | 14.9            | 17.2            | 19.2            | 21.6            | 24.0            |      |
| 12     |                  | 172 | 19.4 | 3.44 | 13.5           | 15.4            | 16.9            | 19.1            | 21.9            | 24.3            | 26.7            |      |
| 13     |                  | 164 | 21.2 | 4.03 | 14.8           | 16.4            | 18.5            | 20.7            | 24.0            | 26.6            | 29.2            |      |
| 14     |                  | 151 | 21.1 | 4.20 | 13.0           | 15.9            | 17.9            | 21.1            | 23.7            | 26.1            | 30.0            |      |
| 15     |                  | 198 | 23.2 | 4.33 | 15.7           | 17.5            | 20.0            | 22.6            | 26.3            | 29.2            | 31.3            |      |
| 16     |                  | 184 | 23.1 | 3.99 | 16.3           | 18.3            | 20.1            | 22.9            | 26.1            | 28.3            | 31.5            |      |
| 17     |                  | 166 | 23.7 | 4.35 | 16.0           | 18.2            | 20.8            | 23.5            | 26.4            | 28.7            | 31.9            |      |
| 18     |                  | 159 | 23.7 | 3.73 | 17.2           | 18.9            | 21.0            | 23.2            | 25.9            | 29.1            | 31.2            |      |
| 19     |                  | 127 | 23.6 | 4.19 | 16.2           | 18.9            | 20.7            | 23.1            | 25.7            | 29.1            | 34.3            |      |
| 20     |                  | 98  | 23.6 | 4.33 | 15.8           | 18.8            | 19.9            | 23.9            | 26.2            | 29.1            | 32.0            |      |
| 21     |                  | 103 | 23.5 | 4.18 | 14.8           | 18.7            | 21.0            | 22.8            | 25.4            | 29.4            | 33.5            |      |
| 22     |                  | 90  | 24.0 | 4.98 | 15.5           | 18.2            | 19.9            | 23.9            | 28.1            | 30.1            | 34.7            |      |

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Table 4-2-2-2-68 Back strength (kg)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 27.2  | 6.65  | 16.0           | 18.4            | 23.0            | 27.0            | 31.0            | 37.0            | 41.8            |      |
|        | 7                | 222 | 30.4  | 8.08  | 15.0           | 21.0            | 25.0            | 29.0            | 36.0            | 41.0            | 47.3            |      |
|        | 8                | 196 | 34.7  | 9.06  | 19.0           | 23.7            | 29.0            | 34.0            | 40.0            | 46.3            | 55.1            |      |
|        | 9                | 192 | 42.0  | 10.34 | 24.0           | 29.3            | 35.0            | 42.0            | 50.0            | 55.0            | 63.0            |      |
|        | 10               | 184 | 43.7  | 11.62 | 22.0           | 29.0            | 36.0            | 42.5            | 52.0            | 59.5            | 67.4            |      |
|        | 11               | 176 | 52.1  | 13.79 | 28.0           | 37.0            | 44.0            | 51.0            | 60.0            | 68.3            | 84.7            |      |
|        | 12               | 187 | 60.9  | 14.66 | 35.0           | 43.0            | 52.0            | 59.0            | 68.0            | 81.0            | 98.4            |      |
|        | 13               | 178 | 72.2  | 17.08 | 43.0           | 52.0            | 60.0            | 71.0            | 83.0            | 95.3            | 107.3           |      |
|        | 14               | 182 | 84.9  | 18.88 | 51.0           | 64.0            | 74.0            | 82.5            | 98.3            | 109.7           | 121.0           |      |
|        | 15               | 177 | 92.9  | 17.01 | 59.0           | 73.8            | 82.0            | 93.0            | 103.0           | 113.2           | 128.0           |      |
|        | 16               | 174 | 102.1 | 19.94 | 68.0           | 76.0            | 87.0            | 101.5           | 113.0           | 126.0           | 145.8           |      |
|        | 17               | 166 | 103.8 | 21.11 | 65.0           | 76.0            | 91.0            | 104.0           | 117.0           | 131.6           | 149.9           |      |
|        | 18               | 162 | 109.8 | 21.28 | 72.0           | 82.0            | 96.5            | 108.0           | 121.0           | 137.1           | 156.3           |      |
|        | 19               | 120 | 111.9 | 22.37 | 77.0           | 87.0            | 96.0            | 109.0           | 127.0           | 139.0           | 156.0           |      |
|        | 20               | 102 | 116.0 | 22.48 | 70.0           | 90.3            | 100.0           | 117.0           | 131.3           | 145.7           | 160.8           |      |
|        | 21               | 99  | 116.3 | 23.83 | 75.0           | 88.0            | 100.0           | 114.0           | 128.0           | 146.0           | 176.0           |      |
|        | 22               | 82  | 116.2 | 19.98 | 66.0           | 98.3            | 106.0           | 116.0           | 130.0           | 141.4           | 146.6           |      |
|        | F                | 6   | 154   | 24.5  | 7.71           | 11.0            | 13.5            | 19.0            | 24.0            | 30.0            | 35.0            | 39.3 |
|        |                  | 7   | 165   | 26.7  | 7.54           | 12.0            | 18.0            | 21.0            | 26.0            | 32.0            | 36.0            | 43.0 |
|        |                  | 8   | 150   | 32.0  | 8.73           | 17.0            | 20.0            | 26.0            | 31.0            | 38.0            | 44.0            | 49.0 |
|        |                  | 9   | 165   | 37.2  | 9.95           | 20.0            | 23.0            | 31.0            | 37.0            | 43.0            | 52.0            | 58.0 |
|        |                  | 10  | 163   | 40.0  | 10.20          | 20.0            | 26.0            | 33.0            | 40.0            | 46.0            | 53.0            | 60.1 |
| 11     |                  | 151 | 46.8  | 12.05 | 20.0           | 31.0            | 40.0            | 47.0            | 54.0            | 62.8            | 70.4            |      |
| 12     |                  | 172 | 48.2  | 11.62 | 27.0           | 32.3            | 41.0            | 48.0            | 55.8            | 63.0            | 72.6            |      |
| 13     |                  | 164 | 52.4  | 12.08 | 31.0           | 36.0            | 44.0            | 52.0            | 59.8            | 70.0            | 77.0            |      |
| 14     |                  | 151 | 54.6  | 12.52 | 31.0           | 37.2            | 46.0            | 56.0            | 63.0            | 70.0            | 78.9            |      |
| 15     |                  | 197 | 58.0  | 14.81 | 34.0           | 40.8            | 48.0            | 56.0            | 67.5            | 79.0            | 92.1            |      |
| 16     |                  | 184 | 59.1  | 12.95 | 36.0           | 42.0            | 50.3            | 58.5            | 68.8            | 75.0            | 88.0            |      |
| 17     |                  | 166 | 59.7  | 13.63 | 34.0           | 44.7            | 51.0            | 59.0            | 67.3            | 79.3            | 91.0            |      |
| 18     |                  | 159 | 59.7  | 12.75 | 38.0           | 45.0            | 52.0            | 59.0            | 67.0            | 76.0            | 90.2            |      |
| 19     |                  | 127 | 63.5  | 14.61 | 34.0           | 46.8            | 52.0            | 63.0            | 74.0            | 82.4            | 94.0            |      |
| 20     |                  | 98  | 64.3  | 13.76 | 37.0           | 44.0            | 56.8            | 63.0            | 73.0            | 84.1            | 91.1            |      |
| 21     |                  | 103 | 64.3  | 13.40 | 34.0           | 47.4            | 56.0            | 64.0            | 72.0            | 81.4            | 92.5            |      |
| 22     |                  | 90  | 66.1  | 16.19 | 39.0           | 46.0            | 53.0            | 64.5            | 76.5            | 89.9            | 97.5            |      |

Table 4-2-2-2-69 Endurance run (sec)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |       |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| M      | 6                | 166 | 151.3 | 17.85 | 127.0          | 133.0           | 140.0           | 150.0           | 160.0           | 173.0           | 185.0           |       |
|        | 7                | 219 | 145.6 | 22.42 | 117.0          | 125.0           | 132.0           | 143.0           | 154.0           | 168.0           | 181.4           |       |
|        | 8                | 195 | 138.3 | 17.82 | 112.0          | 118.0           | 124.0           | 135.0           | 151.0           | 163.0           | 175.0           |       |
|        | 9                | 190 | 130.5 | 17.31 | 108.0          | 111.1           | 118.0           | 127.0           | 138.0           | 155.9           | 175.0           |       |
|        | 10               | 178 | 125.8 | 15.24 | 101.0          | 108.0           | 115.0           | 123.0           | 135.0           | 145.0           | 163.5           |       |
|        | 11               | 173 | 124.4 | 24.89 | 99.0           | 104.4           | 112.0           | 120.0           | 130.5           | 149.6           | 171.8           |       |
|        | 12               | 183 | 116.7 | 24.40 | 93.0           | 99.0            | 104.0           | 112.0           | 123.0           | 135.6           | 166.9           |       |
|        | 13               | 173 | 301.4 | 54.45 | 211.0          | 238.0           | 266.5           | 300.0           | 335.0           | 359.6           | 415.8           |       |
|        | 14               | 180 | 296.6 | 46.65 | 228.0          | 245.2           | 262.0           | 293.0           | 322.0           | 350.6           | 394.4           |       |
|        | 15               | 176 | 281.7 | 40.87 | 212.0          | 231.7           | 254.0           | 280.0           | 305.0           | 336.2           | 370.7           |       |
|        | 16               | 164 | 275.5 | 34.49 | 213.0          | 236.0           | 251.3           | 275.0           | 295.0           | 318.5           | 339.9           |       |
|        | 17               | 157 | 276.1 | 36.74 | 208.0          | 229.0           | 251.5           | 275.0           | 299.0           | 318.6           | 351.3           |       |
|        | 18               | 143 | 274.5 | 38.87 | 210.0          | 229.0           | 250.0           | 267.0           | 306.0           | 329.2           | 355.7           |       |
|        | 19               | 105 | 271.7 | 37.05 | 207.0          | 223.6           | 250.5           | 268.0           | 296.5           | 323.4           | 353.2           |       |
|        | 20               | 86  | 280.4 | 36.69 | 210.0          | 238.7           | 259.8           | 278.5           | 300.5           | 327.2           | 379.0           |       |
|        | 21               | 78  | 276.9 | 38.20 | 220.0          | 233.6           | 250.0           | 269.5           | 305.8           | 324.6           | 376.4           |       |
|        | 22               | 69  | 280.7 | 41.14 | 208.0          | 228.0           | 245.5           | 286.0           | 304.5           | 323.0           | 373.4           |       |
|        | F                | 6   | 144   | 153.4 | 14.54          | 129.0           | 136.0           | 142.0           | 153.0           | 161.0           | 173.0           | 187.7 |
|        |                  | 7   | 157   | 146.0 | 13.14          | 123.0           | 128.0           | 137.0           | 145.0           | 154.0           | 163.4           | 173.8 |
|        |                  | 8   | 142   | 141.4 | 14.31          | 117.0           | 124.6           | 131.8           | 140.0           | 149.5           | 161.7           | 172.1 |
|        |                  | 9   | 158   | 134.4 | 15.76          | 108.0           | 117.9           | 124.8           | 131.0           | 141.3           | 156.1           | 166.0 |
|        |                  | 10  | 156   | 128.8 | 14.28          | 108.0           | 113.0           | 119.0           | 126.0           | 138.0           | 146.0           | 163.9 |
| 11     |                  | 146 | 119.8 | 12.68 | 98.0           | 105.0           | 112.0           | 119.0           | 125.0           | 136.3           | 146.2           |       |
| 12     |                  | 165 | 128.7 | 37.02 | 103.0          | 109.0           | 113.0           | 122.0           | 131.0           | 142.0           | 281.7           |       |
| 13     |                  | 152 | 284.8 | 40.17 | 207.0          | 233.0           | 260.3           | 279.5           | 312.5           | 339.4           | 357.5           |       |
| 14     |                  | 146 | 282.4 | 31.90 | 227.0          | 241.0           | 261.0           | 283.0           | 298.3           | 319.2           | 356.0           |       |
| 15     |                  | 190 | 276.6 | 31.77 | 219.0          | 235.0           | 255.0           | 276.5           | 295.0           | 312.8           | 340.2           |       |
| 16     |                  | 172 | 272.7 | 32.40 | 216.0          | 238.0           | 251.0           | 271.0           | 292.8           | 309.7           | 329.8           |       |
| 17     |                  | 157 | 274.5 | 30.61 | 224.0          | 238.0           | 252.5           | 270.0           | 293.0           | 313.0           | 346.8           |       |
| 18     |                  | 148 | 285.5 | 42.50 | 229.0          | 240.0           | 257.0           | 279.5           | 303.8           | 332.4           | 351.6           |       |
| 19     |                  | 107 | 289.3 | 35.69 | 235.0          | 253.4           | 266.0           | 285.0           | 303.0           | 328.4           | 394.1           |       |
| 20     |                  | 84  | 287.9 | 44.19 | 228.0          | 251.0           | 265.5           | 281.5           | 307.0           | 329.0           | 350.5           |       |
| 21     |                  | 81  | 282.8 | 36.26 | 222.0          | 238.6           | 259.0           | 278.0           | 308.5           | 341.0           | 354.2           |       |
| 22     |                  | 83  | 289.6 | 33.92 | 232.0          | 254.4           | 269.0           | 280.0           | 313.0           | 337.6           | 359.4           |       |

Note: 50 m x 8 shuttle run was for subjects aged 6~12; 800 m run was for female subjects aged 13~22; 1000 m run was for male subjects aged 13~22.

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Table 4-2-2-2-70 Sit and reach (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 4.1  | 5.29 | -6.9           | -2.7            | 0.7             | 3.8             | 7.9             | 10.9            | 13.7            |      |
|        | 7                | 222 | 2.8  | 5.70 | -9.2           | -4.5            | -0.3            | 3.1             | 6.4             | 10.3            | 13.2            |      |
|        | 8                | 196 | 3.4  | 4.98 | -6.5           | -3.3            | -0.2            | 3.6             | 6.8             | 10.3            | 12.3            |      |
|        | 9                | 193 | 3.1  | 5.62 | -8.7           | -4.5            | -0.8            | 3.3             | 7.4             | 10.5            | 12.8            |      |
|        | 10               | 185 | 0.5  | 5.91 | -12.0          | -8.2            | -2.5            | 0.5             | 4.3             | 7.9             | 11.7            |      |
|        | 11               | 176 | 0.3  | 6.38 | -14.0          | -7.9            | -3.0            | 0.9             | 4.8             | 7.4             | 11.5            |      |
|        | 12               | 188 | 0.5  | 6.41 | -12.2          | -7.6            | -3.9            | 0.6             | 5.1             | 7.8             | 11.8            |      |
|        | 13               | 176 | 1.3  | 6.90 | -11.9          | -7.6            | -3.4            | 1.5             | 6.1             | 10.5            | 13.3            |      |
|        | 14               | 182 | 1.6  | 8.42 | -15.3          | -9.1            | -3.8            | 1.6             | 7.7             | 12.1            | 18.0            |      |
|        | 15               | 176 | 4.2  | 8.88 | -13.7          | -6.8            | -1.6            | 4.4             | 10.2            | 15.0            | 21.8            |      |
|        | 16               | 174 | 6.3  | 8.58 | -11.3          | -4.5            | 0.6             | 6.8             | 12.3            | 17.5            | 21.9            |      |
|        | 17               | 164 | 3.8  | 8.85 | -11.7          | -8.0            | -2.4            | 3.9             | 10.3            | 14.6            | 19.6            |      |
|        | 18               | 162 | 5.7  | 9.55 | -14.3          | -7.8            | 0.0             | 7.0             | 12.1            | 18.0            | 24.8            |      |
|        | 19               | 119 | 5.9  | 8.88 | -10.9          | -5.4            | -0.7            | 5.3             | 12.5            | 19.1            | 22.0            |      |
|        | 20               | 102 | 5.4  | 8.87 | -10.3          | -6.6            | -1.8            | 6.1             | 10.3            | 18.1            | 23.9            |      |
|        | 21               | 99  | 5.4  | 9.12 | -13.4          | -8.1            | -0.4            | 6.4             | 10.9            | 18.0            | 22.6            |      |
|        | 22               | 82  | 1.5  | 6.07 | -8.6           | -6.8            | -4.4            | 2.7             | 5.3             | 9.7             | 12.7            |      |
|        | F                | 6   | 155  | 6.6  | 5.39           | -4.3            | -0.1            | 2.8             | 6.7             | 10.4            | 13.3            | 17.6 |
|        |                  | 7   | 165  | 6.5  | 5.80           | -6.0            | -1.1            | 2.8             | 5.9             | 11.5            | 13.5            | 16.5 |
|        |                  | 8   | 150  | 7.4  | 5.18           | -2.1            | -0.1            | 4.1             | 7.4             | 11.0            | 13.9            | 18.5 |
|        |                  | 9   | 165  | 6.0  | 6.26           | -7.9            | -2.1            | 2.4             | 6.7             | 10.0            | 13.8            | 16.0 |
|        |                  | 10  | 163  | 4.8  | 6.36           | -6.7            | -4.1            | 0.3             | 4.6             | 9.4             | 13.2            | 16.1 |
| 11     |                  | 151 | 4.8  | 7.20 | -8.7           | -4.2            | 0.6             | 4.7             | 9.7             | 14.8            | 18.5            |      |
| 12     |                  | 172 | 4.8  | 6.78 | -7.7           | -3.3            | 0.2             | 4.1             | 9.1             | 13.3            | 18.6            |      |
| 13     |                  | 163 | 5.7  | 8.59 | -11.8          | -7.0            | 0.8             | 6.3             | 11.8            | 15.9            | 21.4            |      |
| 14     |                  | 151 | 6.6  | 8.15 | -8.6           | -3.7            | 0.6             | 6.6             | 12.3            | 18.2            | 22.4            |      |
| 15     |                  | 198 | 6.4  | 8.70 | -9.4           | -4.4            | 0.3             | 5.9             | 12.2            | 18.3            | 24.1            |      |
| 16     |                  | 184 | 7.0  | 7.43 | -7.0           | -2.9            | 2.2             | 7.2             | 12.7            | 16.2            | 19.5            |      |
| 17     |                  | 164 | 5.6  | 8.23 | -9.8           | -6.2            | 0.0             | 6.2             | 11.3            | 15.8            | 19.5            |      |
| 18     |                  | 159 | 6.9  | 8.24 | -9.0           | -5.1            | 1.2             | 7.4             | 12.1            | 17.8            | 22.7            |      |
| 19     |                  | 126 | 4.6  | 9.43 | -14.2          | -8.6            | -1.3            | 4.5             | 10.4            | 16.0            | 23.8            |      |
| 20     |                  | 98  | 5.5  | 8.33 | -11.1          | -5.0            | 1.3             | 5.3             | 10.5            | 16.3            | 22.2            |      |
| 21     |                  | 102 | 6.6  | 9.19 | -10.0          | -7.8            | -0.1            | 7.5             | 12.2            | 18.7            | 24.9            |      |
| 22     |                  | 90  | 6.1  | 7.57 | -9.1           | -5.3            | 2.5             | 6.4             | 11.0            | 15.9            | 19.7            |      |

Table 4-2-2-2-71 Respond time (sec)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |      |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------|
| M      | 6                | 173 | 0.60 | 0.091 | 0.47           | 0.49            | 0.54            | 0.58            | 0.65            | 0.71            | 0.82            |      |
|        | 7                | 221 | 0.55 | 0.072 | 0.43           | 0.48            | 0.50            | 0.55            | 0.59            | 0.64            | 0.70            |      |
|        | 8                | 196 | 0.51 | 0.077 | 0.40           | 0.44            | 0.46            | 0.50            | 0.56            | 0.59            | 0.69            |      |
|        | 9                | 193 | 0.48 | 0.065 | 0.37           | 0.40            | 0.43            | 0.47            | 0.51            | 0.56            | 0.61            |      |
|        | 10               | 185 | 0.44 | 0.054 | 0.35           | 0.38            | 0.40            | 0.43            | 0.47            | 0.50            | 0.54            |      |
|        | 11               | 176 | 0.43 | 0.047 | 0.35           | 0.37            | 0.39            | 0.42            | 0.45            | 0.49            | 0.53            |      |
|        | 12               | 188 | 0.41 | 0.046 | 0.33           | 0.36            | 0.38            | 0.40            | 0.43            | 0.47            | 0.51            |      |
|        | 13               | 178 | 0.40 | 0.044 | 0.33           | 0.36            | 0.37            | 0.40            | 0.43            | 0.45            | 0.50            |      |
|        | 14               | 182 | 0.40 | 0.046 | 0.31           | 0.34            | 0.37            | 0.40            | 0.43            | 0.46            | 0.50            |      |
|        | 15               | 179 | 0.39 | 0.046 | 0.31           | 0.34            | 0.36            | 0.39            | 0.42            | 0.45            | 0.49            |      |
|        | 16               | 174 | 0.38 | 0.047 | 0.31           | 0.34            | 0.35            | 0.37            | 0.41            | 0.44            | 0.48            |      |
|        | 17               | 166 | 0.38 | 0.044 | 0.31           | 0.33            | 0.35            | 0.37            | 0.41            | 0.44            | 0.49            |      |
|        | 18               | 162 | 0.38 | 0.041 | 0.30           | 0.33            | 0.36            | 0.38            | 0.41            | 0.44            | 0.45            |      |
|        | 19               | 120 | 0.39 | 0.047 | 0.31           | 0.33            | 0.35            | 0.38            | 0.42            | 0.45            | 0.49            |      |
|        | 20               | 102 | 0.39 | 0.044 | 0.31           | 0.33            | 0.36            | 0.39            | 0.42            | 0.44            | 0.50            |      |
|        | 21               | 99  | 0.39 | 0.054 | 0.29           | 0.32            | 0.36            | 0.38            | 0.41            | 0.47            | 0.50            |      |
|        | 22               | 82  | 0.41 | 0.044 | 0.33           | 0.36            | 0.38            | 0.41            | 0.42            | 0.48            | 0.51            |      |
|        | F                | 6   | 155  | 0.62  | 0.086          | 0.49            | 0.52            | 0.56            | 0.61            | 0.66            | 0.73            | 0.84 |
|        |                  | 7   | 164  | 0.57  | 0.079          | 0.44            | 0.48            | 0.52            | 0.56            | 0.61            | 0.69            | 0.75 |
|        |                  | 8   | 150  | 0.54  | 0.065          | 0.44            | 0.47            | 0.50            | 0.53            | 0.58            | 0.62            | 0.70 |
|        |                  | 9   | 165  | 0.50  | 0.061          | 0.40            | 0.43            | 0.46            | 0.50            | 0.53            | 0.59            | 0.62 |
|        |                  | 10  | 163  | 0.46  | 0.055          | 0.38            | 0.40            | 0.43            | 0.46            | 0.49            | 0.53            | 0.56 |
| 11     |                  | 151 | 0.44 | 0.054 | 0.35           | 0.38            | 0.40            | 0.43            | 0.47            | 0.51            | 0.56            |      |
| 12     |                  | 172 | 0.44 | 0.051 | 0.35           | 0.37            | 0.40            | 0.43            | 0.46            | 0.50            | 0.55            |      |
| 13     |                  | 164 | 0.43 | 0.048 | 0.35           | 0.37            | 0.40            | 0.43            | 0.46            | 0.50            | 0.53            |      |
| 14     |                  | 151 | 0.42 | 0.056 | 0.32           | 0.35            | 0.39            | 0.41            | 0.46            | 0.49            | 0.55            |      |
| 15     |                  | 198 | 0.42 | 0.053 | 0.33           | 0.35            | 0.38            | 0.41            | 0.45            | 0.49            | 0.53            |      |
| 16     |                  | 184 | 0.41 | 0.046 | 0.34           | 0.36            | 0.38            | 0.40            | 0.44            | 0.47            | 0.52            |      |
| 17     |                  | 166 | 0.42 | 0.048 | 0.35           | 0.36            | 0.38            | 0.41            | 0.45            | 0.49            | 0.52            |      |
| 18     |                  | 159 | 0.42 | 0.044 | 0.35           | 0.36            | 0.39            | 0.42            | 0.45            | 0.47            | 0.50            |      |
| 19     |                  | 127 | 0.42 | 0.046 | 0.34           | 0.36            | 0.39            | 0.42            | 0.46            | 0.48            | 0.51            |      |
| 20     |                  | 98  | 0.42 | 0.047 | 0.33           | 0.37            | 0.40            | 0.42            | 0.45            | 0.48            | 0.53            |      |
| 21     |                  | 103 | 0.44 | 0.055 | 0.34           | 0.36            | 0.40            | 0.43            | 0.47            | 0.52            | 0.56            |      |
| 22     |                  | 90  | 0.42 | 0.043 | 0.34           | 0.36            | 0.39            | 0.42            | 0.44            | 0.48            | 0.51            |      |

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Table 4-2-2-72 One foot stands with eyes closed (sec)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |       |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|
| M      | 6                | 173 | 11.2 | 8.42  | 3.0            | 3.4             | 5.0             | 9.0             | 15.0            | 23.0            | 36.8            |       |
|        | 7                | 222 | 15.8 | 15.71 | 3.0            | 4.0             | 6.0             | 11.0            | 20.0            | 32.0            | 60.3            |       |
|        | 8                | 196 | 18.0 | 20.05 | 3.0            | 4.0             | 6.0             | 11.0            | 21.0            | 40.0            | 78.0            |       |
|        | 9                | 193 | 18.5 | 18.39 | 3.0            | 4.0             | 7.0             | 13.0            | 23.0            | 44.2            | 77.0            |       |
|        | 10               | 185 | 23.0 | 24.08 | 3.0            | 4.6             | 9.0             | 16.0            | 28.0            | 50.4            | 88.8            |       |
|        | 11               | 176 | 21.9 | 20.70 | 3.0            | 5.0             | 8.3             | 16.0            | 28.8            | 45.0            | 62.8            |       |
|        | 12               | 188 | 28.0 | 30.49 | 3.0            | 5.0             | 11.0            | 18.0            | 30.0            | 73.1            | 127.0           |       |
|        | 13               | 178 | 34.8 | 36.65 | 4.0            | 7.0             | 12.0            | 22.0            | 42.0            | 76.2            | 152.0           |       |
|        | 14               | 182 | 33.4 | 31.86 | 3.0            | 7.0             | 13.0            | 22.0            | 41.0            | 70.7            | 136.0           |       |
|        | 15               | 179 | 40.9 | 42.55 | 3.0            | 5.0             | 12.0            | 24.0            | 58.0            | 110.0           | 160.6           |       |
|        | 16               | 174 | 44.8 | 40.27 | 4.0            | 8.5             | 15.8            | 28.0            | 62.3            | 103.5           | 149.0           |       |
|        | 17               | 166 | 45.6 | 50.42 | 3.0            | 6.0             | 11.0            | 28.0            | 61.3            | 112.3           | 167.9           |       |
|        | 18               | 162 | 45.3 | 46.04 | 3.0            | 5.0             | 13.0            | 27.0            | 62.5            | 121.3           | 164.5           |       |
|        | 19               | 120 | 49.3 | 56.73 | 4.0            | 6.0             | 13.0            | 28.0            | 66.5            | 124.9           | 215.8           |       |
|        | 20               | 102 | 44.0 | 48.35 | 3.0            | 5.3             | 16.0            | 29.0            | 56.3            | 98.3            | 147.3           |       |
|        | 21               | 99  | 54.6 | 52.03 | 4.0            | 7.0             | 14.0            | 36.0            | 88.0            | 148.0           | 174.0           |       |
|        | 22               | 82  | 43.5 | 36.25 | 6.0            | 10.0            | 18.8            | 36.5            | 62.0            | 81.4            | 105.1           |       |
|        | F                | 6   | 155  | 16.2  | 17.77          | 3.0             | 4.0             | 6.0             | 12.0            | 19.0            | 32.4            | 55.3  |
|        |                  | 7   | 165  | 19.6  | 17.46          | 3.0             | 5.0             | 8.0             | 14.0            | 24.5            | 45.8            | 74.0  |
|        |                  | 8   | 150  | 24.3  | 27.01          | 4.0             | 6.0             | 8.0             | 14.0            | 27.3            | 55.8            | 107.3 |
|        |                  | 9   | 165  | 21.4  | 28.73          | 3.0             | 4.0             | 7.0             | 15.0            | 25.5            | 38.4            | 75.2  |
|        |                  | 10  | 163  | 26.2  | 32.26          | 3.0             | 4.0             | 8.0             | 16.0            | 27.0            | 60.0            | 133.4 |
| 11     |                  | 151 | 27.4 | 33.76 | 3.0            | 5.0             | 8.0             | 16.0            | 31.0            | 60.8            | 150.0           |       |
| 12     |                  | 172 | 33.5 | 39.19 | 3.0            | 6.0             | 12.0            | 19.5            | 37.5            | 80.8            | 149.2           |       |
| 13     |                  | 164 | 33.7 | 36.48 | 3.0            | 6.0             | 11.0            | 20.0            | 44.5            | 82.0            | 152.0           |       |
| 14     |                  | 151 | 37.6 | 37.65 | 3.0            | 6.0             | 11.0            | 25.0            | 46.0            | 103.6           | 150.0           |       |
| 15     |                  | 198 | 41.4 | 36.42 | 5.0            | 8.0             | 15.8            | 29.5            | 54.5            | 90.1            | 148.1           |       |
| 16     |                  | 184 | 39.0 | 39.78 | 4.0            | 8.0             | 12.0            | 23.5            | 48.5            | 92.0            | 156.0           |       |
| 17     |                  | 167 | 55.5 | 54.81 | 5.0            | 8.0             | 16.0            | 34.0            | 77.0            | 150.0           | 196.7           |       |
| 18     |                  | 159 | 47.2 | 55.80 | 4.0            | 6.0             | 14.0            | 30.0            | 56.0            | 108.0           | 159.6           |       |
| 19     |                  | 127 | 45.7 | 51.37 | 5.0            | 7.0             | 13.0            | 26.0            | 53.0            | 123.8           | 192.6           |       |
| 20     |                  | 98  | 44.1 | 48.04 | 4.0            | 6.9             | 13.8            | 29.0            | 54.8            | 97.2            | 159.6           |       |
| 21     |                  | 103 | 38.1 | 49.01 | 4.0            | 5.0             | 10.0            | 18.0            | 50.0            | 99.6            | 160.7           |       |
| 22     |                  | 90  | 40.2 | 36.46 | 4.0            | 8.0             | 13.5            | 27.5            | 53.8            | 84.9            | 145.1           |       |

## 4.2.6 Health

Table 4-2-2-2-73 Primary teeth decay (%)

| Gender | Age group (years) | Subjects (n) | Decayed primary teeth (d) | Decayed primary teeth filled (f) | Decayed primary teeth loss (m) | Primary teeth decayed, filled and loss (dmf) |
|--------|-------------------|--------------|---------------------------|----------------------------------|--------------------------------|----------------------------------------------|
| M      | 6                 | 173          | 42.8                      | 6.9                              | 25.4                           | 59.0                                         |
|        | 7                 | 222          | 45.9                      | 10.8                             | 12.6                           | 55.4                                         |
|        | 8                 | 196          | 43.9                      | 9.2                              | 9.2                            | 48.5                                         |
|        | 9                 | 193          | 40.9                      | 7.3                              | 13.0                           | 49.2                                         |
|        | 10                | 185          | 37.8                      | 8.6                              | 18.9                           | 51.4                                         |
|        | 11                | 176          | 20.5                      | 5.7                              | 10.2                           | 30.1                                         |
|        | 12                | 188          | 12.2                      | 0.5                              | 2.7                            | 13.3                                         |
|        | 13                | 178          | 1.1                       | 0.0                              | 0.6                            | 1.1                                          |
|        | 14                | 182          | 0.0                       | 0.0                              | 0.5                            | 0.5                                          |
|        | 15                | 179          | 0.0                       | 0.0                              | 0.0                            | 0.0                                          |
|        | 16                | 174          | 0.0                       | 0.0                              | 0.0                            | 0.0                                          |
|        | 17                | 166          | 0.0                       | 0.0                              | 0.0                            | 0.0                                          |
|        | 18                | 162          | 0.0                       | 0.0                              | 0.0                            | 0.0                                          |
| F      | 6                 | 155          | 43.2                      | 6.5                              | 20.0                           | 55.5                                         |
|        | 7                 | 165          | 46.7                      | 10.9                             | 18.2                           | 57.6                                         |
|        | 8                 | 150          | 41.3                      | 12.7                             | 13.3                           | 48.7                                         |
|        | 9                 | 165          | 37.6                      | 9.7                              | 17.0                           | 49.1                                         |
|        | 10                | 163          | 32.5                      | 9.8                              | 11.0                           | 42.9                                         |
|        | 11                | 151          | 15.2                      | 4.6                              | 3.3                            | 19.9                                         |
|        | 12                | 172          | 5.8                       | 1.2                              | 1.2                            | 7.0                                          |
|        | 13                | 164          | 0.0                       | 1.2                              | 0.0                            | 1.2                                          |
|        | 14                | 151          | 0.0                       | 0.0                              | 0.0                            | 0.0                                          |
|        | 15                | 198          | 0.0                       | 0.0                              | 0.0                            | 0.0                                          |
|        | 16                | 184          | 0.0                       | 0.0                              | 0.0                            | 0.0                                          |
|        | 17                | 167          | 0.0                       | 0.0                              | 0.0                            | 0.0                                          |
|        | 18                | 159          | 0.0                       | 0.0                              | 0.0                            | 0.0                                          |

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Table 4-2-2-2-74 Permanent teeth decay (%)

| Gender | Age group (year) | Subjects (n) | Decayed permanent teeth (D) | Decayed permanent teeth filled (F) | Decayed permanent teeth loss (M) | Permanent teeth decayed, filled and loss (DMF) |
|--------|------------------|--------------|-----------------------------|------------------------------------|----------------------------------|------------------------------------------------|
| M      | 6                | 173          | 0.6                         | 0.0                                | 1.2                              | 1.7                                            |
|        | 7                | 222          | 6.8                         | 1.4                                | 0.0                              | 8.1                                            |
|        | 8                | 196          | 7.7                         | 2.6                                | 1.5                              | 10.2                                           |
|        | 9                | 193          | 14.0                        | 4.1                                | 2.1                              | 19.7                                           |
|        | 10               | 185          | 16.2                        | 6.5                                | 0.5                              | 20.0                                           |
|        | 11               | 176          | 15.3                        | 6.3                                | 1.7                              | 20.0                                           |
|        | 12               | 188          | 20.2                        | 11.2                               | 1.1                              | 28.7                                           |
|        | 13               | 178          | 24.7                        | 11.2                               | 2.8                              | 35.4                                           |
|        | 14               | 182          | 26.4                        | 12.6                               | 3.8                              | 38.5                                           |
|        | 15               | 179          | 24.6                        | 17.3                               | 2.2                              | 36.9                                           |
|        | 16               | 174          | 24.1                        | 20.1                               | 4.6                              | 41.4                                           |
|        | 17               | 166          | 27.7                        | 36.7                               | 3.6                              | 56.6                                           |
|        | 18               | 162          | 35.8                        | 34.0                               | 5.6                              | 57.4                                           |
| F      | 6                | 155          | 0.6                         | 0.0                                | 0.0                              | 0.6                                            |
|        | 7                | 165          | 6.7                         | 1.2                                | 0.6                              | 7.9                                            |
|        | 8                | 150          | 10.0                        | 4.0                                | 2.0                              | 11.3                                           |
|        | 9                | 165          | 11.5                        | 4.2                                | 2.4                              | 15.2                                           |
|        | 10               | 163          | 17.2                        | 4.9                                | 1.2                              | 21.5                                           |
|        | 11               | 151          | 20.5                        | 12.6                               | 2.0                              | 31.1                                           |
|        | 12               | 172          | 24.4                        | 14.5                               | 2.9                              | 39.0                                           |
|        | 13               | 164          | 31.1                        | 23.2                               | 1.8                              | 46.3                                           |
|        | 14               | 151          | 37.7                        | 24.5                               | 3.3                              | 55.0                                           |
|        | 15               | 198          | 32.3                        | 26.8                               | 3.0                              | 51.0                                           |
|        | 16               | 184          | 31.5                        | 33.7                               | 4.9                              | 57.1                                           |
|        | 17               | 167          | 29.9                        | 46.7                               | 7.2                              | 65.9                                           |
|        | 18               | 159          | 32.7                        | 40.3                               | 11.9                             | 60.4                                           |

Table 4-2-2-2-75 Poor eyesight and near sighted (%)

| Gender | Age group (year) | Subjects (n) | Poor eyesight (%) | Near sighted (%) |
|--------|------------------|--------------|-------------------|------------------|
| M      | 6                | 173          | 48.0              | 42.2             |
|        | 7                | 222          | 32.9              | 29.3             |
|        | 8                | 196          | 42.9              | 39.8             |
|        | 9                | 193          | 43.5              | 42.5             |
|        | 10               | 185          | 54.1              | 50.3             |
|        | 11               | 176          | 54.0              | 52.8             |
|        | 12               | 188          | 62.2              | 61.7             |
|        | 13               | 178          | 58.4              | 55.6             |
|        | 14               | 182          | 63.2              | 62.1             |
|        | 15               | 179          | 67.6              | 67.6             |
|        | 16               | 174          | 73.6              | 70.7             |
|        | 17               | 166          | 76.5              | 74.1             |
|        | 18               | 162          | 81.5              | 79.6             |
|        | 19               | 120          | 83.3              | 80.8             |
|        | F                | 20           | 102               | 80.4             |
| 21     |                  | 99           | 72.7              | 72.7             |
| 22     |                  | 82           | 70.7              | 68.3             |
| 6      |                  | 155          | 54.2              | 42.6             |
| 7      |                  | 165          | 45.5              | 43.0             |
| 8      |                  | 150          | 38.7              | 37.3             |
| 9      |                  | 165          | 46.1              | 43.0             |
| 10     |                  | 163          | 52.8              | 49.1             |
| 11     |                  | 151          | 57.0              | 57.0             |
| 12     |                  | 172          | 64.5              | 61.6             |
| 13     |                  | 164          | 69.5              | 67.7             |
| 14     |                  | 151          | 76.2              | 74.8             |
| 15     |                  | 198          | 72.7              | 70.7             |
| 16     |                  | 184          | 81.0              | 79.9             |
| 17     |                  | 167          | 79.0              | 78.4             |
| 18     | 159              | 82.4         | 81.1              |                  |
| 19     | 127              | 86.6         | 85.8              |                  |
| 20     | 98               | 84.7         | 84.7              |                  |
| 21     | 103              | 80.6         | 78.6              |                  |
| 22     | 90               | 84.4         | 84.4              |                  |

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Table 4-2-2-2-76 Poor eyesight (%)

| Gender | Age group (year) | Subjects (n) | Mild | Moderate | Severe |      |
|--------|------------------|--------------|------|----------|--------|------|
| M      | 6                | 173          | 19.1 | 21.4     | 7.5    |      |
|        | 7                | 222          | 9.9  | 13.5     | 9.5    |      |
|        | 8                | 196          | 10.2 | 17.9     | 14.8   |      |
|        | 9                | 193          | 7.8  | 16.6     | 19.2   |      |
|        | 10               | 185          | 7.6  | 20.5     | 25.9   |      |
|        | 11               | 176          | 5.7  | 14.8     | 33.5   |      |
|        | 12               | 188          | 4.3  | 18.1     | 39.9   |      |
|        | 13               | 178          | 3.4  | 14.0     | 41.0   |      |
|        | 14               | 182          | 5.5  | 14.3     | 43.4   |      |
|        | 15               | 179          | 2.2  | 10.6     | 54.7   |      |
|        | 16               | 174          | 5.2  | 15.5     | 52.9   |      |
|        | 17               | 166          | 4.2  | 14.5     | 57.8   |      |
|        | 18               | 162          | 3.1  | 16.7     | 61.7   |      |
|        | 19               | 120          | 3.4  | 21.0     | 58.8   |      |
|        | 20               | 102          | 4.0  | 14.1     | 61.6   |      |
|        | 21               | 99           | 2.0  | 19.4     | 51.0   |      |
|        | 22               | 82           | 4.9  | 22.0     | 43.9   |      |
|        | F                | 6            | 155  | 18.7     | 28.4   | 7.1  |
|        |                  | 7            | 165  | 15.2     | 20.0   | 10.3 |
|        |                  | 8            | 150  | 8.0      | 17.3   | 13.3 |
|        |                  | 9            | 165  | 9.1      | 19.4   | 17.6 |
|        |                  | 10           | 163  | 6.7      | 20.2   | 25.8 |
| 11     |                  | 151          | 7.9  | 17.2     | 31.8   |      |
| 12     |                  | 172          | 7.6  | 16.9     | 40.1   |      |
| 13     |                  | 164          | 6.7  | 13.4     | 49.4   |      |
| 14     |                  | 151          | 1.3  | 18.5     | 56.3   |      |
| 15     |                  | 198          | 4.0  | 16.7     | 52.0   |      |
| 16     |                  | 184          | 6.6  | 15.3     | 59.0   |      |
| 17     |                  | 167          | 4.2  | 12.0     | 62.7   |      |
| 18     |                  | 159          | 3.1  | 10.7     | 68.6   |      |
| 19     |                  | 127          | 4.0  | 8.8      | 73.6   |      |
| 20     |                  | 98           | 5.2  | 13.4     | 66.0   |      |
| 21     |                  | 103          | 5.8  | 5.8      | 68.9   |      |
| 22     |                  | 90           | 2.2  | 16.9     | 65.2   |      |

Table 4-2-2-2-77 Color vision (%)

| Gender | Age group (year) | Subjects (n) | Color vision deficiency (%) |     |
|--------|------------------|--------------|-----------------------------|-----|
| M      | 6                | 173          | 3.5                         |     |
|        | 7                | 222          | 1.8                         |     |
|        | 8                | 196          | 1.0                         |     |
|        | 9                | 193          | 1.6                         |     |
|        | 10               | 185          | 0.0                         |     |
|        | 11               | 176          | 1.7                         |     |
|        | 12               | 188          | 1.1                         |     |
|        | 13               | 178          | 1.1                         |     |
|        | 14               | 182          | 2.2                         |     |
|        | 15               | 179          | 1.1                         |     |
|        | 16               | 174          | 1.7                         |     |
|        | 17               | 166          | 1.2                         |     |
|        | 18               | 162          | 1.2                         |     |
|        | 19               | 120          | 2.5                         |     |
|        | 20               | 102          | 4.9                         |     |
|        | 21               | 99           | 3.0                         |     |
|        | 22               | 82           | 6.1                         |     |
|        | F                | 6            | 155                         | 0.6 |
|        |                  | 7            | 165                         | 0.0 |
|        |                  | 8            | 150                         | 0.0 |
|        |                  | 9            | 165                         | 0.6 |
|        |                  | 10           | 163                         | 0.0 |
| 11     |                  | 151          | 0.0                         |     |
| 12     |                  | 172          | 0.0                         |     |
| 13     |                  | 164          | 0.0                         |     |
| 14     |                  | 151          | 0.0                         |     |
| 15     |                  | 198          | 0.0                         |     |
| 16     |                  | 184          | 0.0                         |     |
| 17     |                  | 167          | 0.0                         |     |
| 18     |                  | 159          | 0.0                         |     |
| 19     |                  | 127          | 0.0                         |     |
| 20     | 98               | 0.0          |                             |     |
| 21     | 103              | 0.0          |                             |     |
| 22     | 90               | 0.0          |                             |     |

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Table 4-2-2-2-78 Abnormal hearing (%)

| Gender | Age group<br>(years) | Subjects<br>(n) | Left ear abnormal<br>hearing (%) | Right ear abnormal<br>hearing (%) |
|--------|----------------------|-----------------|----------------------------------|-----------------------------------|
| M      | 13                   | 178             | 0.0                              | 0.6                               |
|        | 14                   | 182             | 0.0                              | 0.0                               |
|        | 15                   | 179             | 0.0                              | 0.0                               |
|        | 16                   | 174             | 0.0                              | 0.0                               |
|        | 17                   | 166             | 0.0                              | 0.0                               |
|        | 18                   | 162             | 0.0                              | 0.0                               |
|        | 19                   | 120             | 0.0                              | 0.8                               |
|        | 20                   | 102             | 0.0                              | 0.0                               |
|        | 21                   | 99              | 0.0                              | 0.0                               |
|        | 22                   | 82              | 0.0                              | 0.0                               |
| F      | 13                   | 164             | 0.0                              | 0.0                               |
|        | 14                   | 151             | 0.0                              | 0.0                               |
|        | 15                   | 198             | 0.0                              | 0.0                               |
|        | 16                   | 184             | 0.5                              | 0.5                               |
|        | 17                   | 167             | 0.0                              | 0.0                               |
|        | 18                   | 159             | 0.0                              | 0.0                               |
|        | 19                   | 127             | 0.0                              | 0.0                               |
|        | 20                   | 98              | 0.0                              | 0.0                               |
|        | 21                   | 103             | 0.0                              | 1.0                               |
|        | 22                   | 90              | 0.0                              | 1.1                               |

## 4.3 Adults

### 4.3.1 Basic Information of the Subjects

Table 4-3-1-3-1 Distribution of subjects in different organizations involved

| Survey units                                          | Names                                   | M                   |                   | F               |                   | Total           |                   |
|-------------------------------------------------------|-----------------------------------------|---------------------|-------------------|-----------------|-------------------|-----------------|-------------------|
|                                                       |                                         | Subjects<br>(n)     | Percentage<br>(%) | Subjects<br>(n) | Percentage<br>(%) | Subjects<br>(n) | Percentage<br>(%) |
| Governmental                                          | Civic and Municipal Affairs Bureau      | 128                 | 8.1               | 62              | 3.1               | 190             | 20.2              |
|                                                       | Statistics and Census Bureau            | 20                  | 1.3               | 24              | 1.2               | 44              | 4.7               |
|                                                       | Labour Affairs Bureau                   | 27                  | 1.7               | 32              | 1.6               | 59              | 6.3               |
|                                                       | Department of Health                    | 40                  | 2.5               | 93              | 4.6               | 133             | 14.1              |
|                                                       | Education and Youth Affairs Bureau      | 33                  | 2.1               | 107             | 5.3               | 140             | 14.9              |
|                                                       | Macau Government Tourist Office         | 12                  | 0.8               | 16              | 0.8               | 28              | 3.0               |
|                                                       | Social Welfare Institute                | 24                  | 1.5               | 52              | 2.6               | 76              | 8.1               |
|                                                       | Macao Sport Development Board           | 59                  | 3.7               | 42              | 2.1               | 101             | 10.7              |
|                                                       | Land, Public Works and Transport Bureau | 47                  | 3.0               | 11              | 0.5               | 58              | 6.2               |
|                                                       | Port Authority                          | 46                  | 2.9               | 7               | 0.3               | 53              | 5.6               |
|                                                       | Naval Office                            | 59                  | 3.7               | 0.0             | 0.0               | 59              | 6.3               |
|                                                       | <b>Total</b>                            | <b>495</b>          | <b>31.3</b>       | <b>446</b>      | <b>22.1</b>       | <b>941</b>      | <b>100.0</b>      |
|                                                       | Private                                 | Future Bright Group | 46                | 2.9             | 60                | 3.0             | 106               |
| Menzies Macau Airport Services Ltd.                   |                                         | 10                  | 0.6               | 36              | 1.8               | 46              | 1.7               |
| Caltex Oil (Macau) Ltd.                               |                                         | 17                  | 1.1               | 23              | 1.1               | 40              | 1.5               |
| Xin Kang Heng Holdings Ltd.                           |                                         | 6                   | 0.4               | 3               | 0.1               | 9               | 0.3               |
| Venetian Macau, S.A.                                  |                                         | 5                   | 0.3               | 9               | 0.4               | 14              | 0.5               |
| Galaxy Casino, S.A.                                   |                                         | 8                   | 0.5               | 6               | 0.3               | 14              | 0.5               |
| CEM-Macau Electricity Company, Ltd.                   |                                         | 28                  | 1.8               | 7               | 0.3               | 35              | 1.3               |
| Tai Fung Bank Limited                                 |                                         | 19                  | 1.2               | 30              | 1.5               | 49              | 1.8               |
| Escola Estrela do Mar                                 |                                         | 44                  | 2.8               | 121             | 6.0               | 165             | 6.2               |
| MPI-Career Development Centre                         |                                         | 85                  | 5.3               | 192             | 9.5               | 277             | 10.4              |
| Kiang Wu Nursing College                              |                                         | 0                   | 0                 | 10              | 0.5               | 10              | 0.4               |
| Macao New Chinese Youth Association                   |                                         | 154                 | 9.7               | 171             | 8.5               | 325             | 12.2              |
| The Women's Association of Macau                      |                                         | 48                  | 3                 | 132             | 6.5               | 180             | 6.7               |
| Beneficência Sun Tou Tong de<br>Macau, Sociedade de   |                                         | 130                 | 8.2               | 97              | 4.8               | 227             | 8.5               |
| Macao Federation of Trade Unions                      |                                         | 44                  | 2.8               | 140             | 6.9               | 184             | 6.9               |
| União Geral das Associações dos<br>Moradores de Macau |                                         | 81                  | 5.1               | 12              | 0.6               | 93              | 3.5               |
| Volunteers Association                                |                                         | 6                   | 0.4               | 14              | 0.7               | 20              | 0.7               |
| Fishermen Association                                 |                                         | 5                   | 0.3               | 7               | 0.3               | 12              | 0.4               |
| Others                                                |                                         | 359                 | 22.6              | 502             | 24.9              | 861             | 32.3              |
| <b>Total</b>                                          |                                         | <b>1095</b>         | <b>69.0</b>       | <b>1572</b>     | <b>77.9</b>       | <b>2667</b>     | <b>100.0</b>      |

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Table4-3-1-3-2 Distribution of subjects in different kinds of occupations

| Category                                                  | Occupation                                                                                         | M                      |                   | F               |                   | Total           |                   |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------|-------------------|-----------------|-------------------|-----------------|-------------------|
|                                                           |                                                                                                    | Subjects<br>(n)        | Percentage<br>(%) | Subjects<br>(n) | Percentage<br>(%) | Subjects<br>(n) | Percentage<br>(%) |
| Non labor<br>intensive<br>work                            | Legislature officials, public<br>administrative officials, directors<br>of communities or managers | 57                     | 3.6               | 39              | 1.9               | 96              | 5.6               |
|                                                           | Professionals                                                                                      | 227                    | 14.3              | 283             | 14                | 510             | 29.8              |
|                                                           | Technicians or assistant<br>professionals                                                          | 336                    | 21.1              | 253             | 12.5              | 589             | 34.5              |
|                                                           | Office clerks                                                                                      | 162                    | 10.2              | 352             | 17.4              | 514             | 30.1              |
|                                                           | <b>Total</b>                                                                                       | <b>782</b>             | <b>49.2</b>       | <b>927</b>      | <b>45.8</b>       | <b>1709</b>     | <b>100.0</b>      |
|                                                           | Labor<br>intensive<br>work                                                                         | Servicemen or salesmen | 196               | 12.3            | 318               | 15.8            | 514               |
| Experienced workers in<br>agricultural and fishery fields |                                                                                                    | 10                     | 0.6               | 2               | 0.1               | 12              | 0.6               |
| Artisan or handicraftsmen                                 |                                                                                                    | 66                     | 4.2               | 42              | 2.1               | 108             | 5.7               |
| Machine operators, drivers or<br>assemblers               |                                                                                                    | 124                    | 7.8               | 8               | 0.4               | 132             | 7.0               |
| Non-technicians                                           |                                                                                                    | 160                    | 10.1              | 175             | 8.7               | 335             | 17.6              |
| Others                                                    |                                                                                                    | 252                    | 15.8              | 546             | 27.1              | 798             | 42.0              |
| <b>Total</b>                                              |                                                                                                    | <b>808</b>             | <b>50.8</b>       | <b>1091</b>     | <b>54.2</b>       | <b>1899</b>     | <b>100.0</b>      |

Table 4-3-1-3-3 Distribution of workers in different communities (%)

| Gender | Communities        | Labor workers | Non labor workers | Total       |
|--------|--------------------|---------------|-------------------|-------------|
| M      | Na. Sra. de Fátima | 38.1          | 26.8              | <b>32.6</b> |
|        | S. António         | 20.5          | 17.4              | <b>19.0</b> |
|        | S. Lázaro          | 8.2           | 17                | <b>12.5</b> |
|        | S. Francisco       | 1.2           | 0.4               | <b>0.8</b>  |
|        | Na. Sra. do Carmo  | 9.5           | 16.5              | <b>12.9</b> |
|        | S.Lourenço         | 14.5          | 12.7              | <b>13.6</b> |
|        | Sé Cathedral       | 7.9           | 9.3               | <b>8.6</b>  |
| F      | Na. Sra. de Fátima | 41.5          | 29.4              | <b>35.1</b> |
|        | S. António         | 19.8          | 17.4              | <b>18.5</b> |
|        | S. Lázaro          | 12.9          | 14.6              | <b>13.8</b> |
|        | S. Francisco       | 0.2           | 0.4               | <b>0.3</b>  |
|        | Na. Sra. do Carmo  | 7.4           | 15.3              | <b>11.6</b> |
|        | S.Lourenço         | 10.1          | 13.1              | <b>11.6</b> |
|        | Sé Cathedral       | 8.1           | 9.9               | <b>9.0</b>  |

Table 4-3-1-3-4 Birth place (%)

| Gender | Birth place | Aged 20~24 | Aged 25~29 | Aged 30~34 | Aged 35~39 | Aged 40~44 | Aged 45~49 | Aged 50~54 | Aged 55~59 | Total       |
|--------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| M      | Mainland    | 21.8       | 44.0       | 47.9       | 31.3       | 33.3       | 40.3       | 46.4       | 56.0       | <b>40.1</b> |
|        | Macao       | 71.8       | 47.6       | 42.3       | 56.3       | 57.7       | 51.1       | 41.1       | 34.2       | <b>50.3</b> |
|        | Hong Kong   | 4.8        | 5.8        | 7.2        | 5.2        | 1.5        | 0.9        | 1.4        | 1.1        | <b>3.4</b>  |
|        | Portugal    | 0.0        | 0.0        | 0.5        | 0.0        | 0.5        | 0.0        | 0.5        | 1.1        | <b>0.3</b>  |
|        | Others      | 1.6        | 2.6        | 2.1        | 7.3        | 7.0        | 7.8        | 10.5       | 7.6        | <b>5.9</b>  |
| F      | Mainland    | 21.1       | 51.4       | 50.5       | 48.1       | 46.4       | 46.9       | 49.5       | 56.3       | <b>46.5</b> |
|        | Macao       | 68.3       | 44.1       | 41.4       | 42.5       | 47.0       | 44.9       | 41.7       | 33.9       | <b>45.3</b> |
|        | Hong Kong   | 9.0        | 4.1        | 5.5        | 3.3        | 1.2        | 3.1        | 1.4        | 2.6        | <b>3.5</b>  |
|        | Portugal    | 0.0        | 0.5        | 0.5        | 0.0        | 0.9        | 0.3        | 0.0        | 0.0        | <b>0.3</b>  |
|        | Others      | 1.5        | 0.0        | 2.3        | 6.1        | 4.5        | 4.8        | 7.4        | 7.3        | <b>4.4</b>  |

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Table 4-3-1-3-5 Education (%)

| Gender                                 | Education                              | Aged<br>20~24        | Aged<br>25~29 | Aged<br>30~34 | Aged<br>35~39 | Aged<br>40~44 | Aged<br>45~49 | Aged<br>50~54 | Aged<br>55~59 | Total       |
|----------------------------------------|----------------------------------------|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|
| M                                      | Below primary School                   | 0.0                  | 0.0           | 0.0           | 0.5           | 4.5           | 4.3           | 5.3           | 6.5           | <b>2.7</b>  |
|                                        | Primary school                         | 6.9                  | 3.7           | 10.3          | 14.1          | 25.4          | 30.3          | 33.0          | 31.5          | <b>19.8</b> |
|                                        | Secondary school                       | 54.8                 | 29.3          | 35.6          | 40.1          | 40.8          | 51.1          | 51.7          | 51.1          | <b>44.5</b> |
|                                        | Professional college<br>and university | 36.7                 | 58.6          | 47.9          | 36.5          | 21.4          | 8.7           | 8.1           | 9.8           | <b>27.8</b> |
|                                        | Masters                                | 1.6                  | 8.4           | 5.7           | 8.3           | 8.0           | 5.6           | 1.4           | 1.1           | <b>5.0</b>  |
|                                        | Doctoral                               | 0.0                  | 0.0           | 0.5           | 0.5           | 0.0           | 0.0           | 0.5           | 0.0           | <b>0.2</b>  |
|                                        | F                                      | Below primary School | 0.0           | 0.5           | 0.9           | 1.9           | 4.5           | 8.2           | 10.2          | 15.1        |
| Primary school                         |                                        | 4.0                  | 2.7           | 6.8           | 16.8          | 21.7          | 26.3          | 39.6          | 42.7          | <b>21.1</b> |
| Secondary school                       |                                        | 35.7                 | 24.1          | 28.2          | 43.0          | 48.8          | 50.8          | 39.2          | 31.8          | <b>39.3</b> |
| Professional college<br>and university |                                        | 59.8                 | 64.1          | 58.2          | 29.9          | 20.2          | 12.4          | 10.6          | 10.4          | <b>30.4</b> |
| Masters                                |                                        | 0.5                  | 8.6           | 5.9           | 8.4           | 4.8           | 2.3           | 0.4           | 0.0           | <b>3.8</b>  |
| Doctoral                               |                                        | 0.0                  | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           | 0.0           | <b>0.0</b>  |

Table 4-3-1-3-6 Working environment (%)

| Gender | Working environment         | Aged<br>20~24 | Aged<br>25~29 | Aged<br>30~34 | Aged<br>35~39 | Aged<br>40~44 | Aged<br>45~49 | Aged<br>50~54 | Aged<br>55~59 | Total       |
|--------|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|
| M      | Outdoor                     | 15.4          | 12.0          | 10.8          | 18.2          | 28.4          | 37.7          | 33.0          | 27.2          | <b>23.3</b> |
|        | Indoor naturally ventilated | 20.7          | 13.1          | 18.6          | 14.1          | 28.9          | 26.8          | 30.1          | 35.9          | <b>23.6</b> |
|        | Indoor with air conditioner | 63.8          | 74.9          | 70.6          | 67.7          | 42.8          | 35.5          | 36.8          | 37.0          | <b>53.1</b> |
| F      | Outdoor                     | 1.0           | 3.6           | 2.7           | 2.8           | 4.8           | 8.2           | 6.7           | 3.6           | <b>4.6</b>  |
|        | Indoor naturally ventilated | 17.6          | 17.3          | 20.5          | 25.2          | 30.7          | 40.1          | 52.7          | 63.0          | <b>34.0</b> |
|        | Indoor with air conditioner | 81.4          | 79.1          | 76.8          | 72            | 64.6          | 51.7          | 40.6          | 33.3          | <b>61.4</b> |

Table 4-3-1-3-7 Average working hours per week (%)

| Gender      | Working hours<br>(hrs) | Aged<br>20~24 | Aged<br>25~29 | Aged<br>30~34 | Aged<br>35~39 | Aged<br>40~44 | Aged<br>45~49 | Aged<br>50~54 | Aged<br>55~59 | Total       |
|-------------|------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|
| M           | Unemployed             | 10.1          | 2.1           | 0.5           | 1.0           | 2.0           | 5.6           | 6.7           | 10.3          | <b>4.8</b>  |
|             | Below 20               | 9.6           | 2.1           | 1.5           | 1.0           | 2.0           | 2.6           | 4.3           | 4.9           | <b>3.5</b>  |
|             | 20~35                  | 12.8          | 3.7           | 3.1           | 2.1           | 5.0           | 6.5           | 6.2           | 6.0           | <b>5.7</b>  |
|             | 35~40                  | 19.7          | 29.3          | 35.6          | 46.4          | 40.3          | 32.9          | 34.0          | 31.0          | <b>33.7</b> |
|             | 40~50                  | 33.0          | 39.3          | 32.5          | 37.5          | 33.8          | 34.2          | 33.5          | 29.3          | <b>34.2</b> |
|             | At least 50            | 14.9          | 23.6          | 26.8          | 12.0          | 16.9          | 18.2          | 15.3          | 18.5          | <b>18.2</b> |
|             | F                      | Unemployed    | 6.0           | 4.5           | 5.9           | 11.7          | 19            | 20.9          | 33.2          | 49.5        |
| Below 20    |                        | 8.5           | 1.4           | 4.1           | 3.7           | 4.8           | 4.0           | 6.7           | 7.8           | <b>5.0</b>  |
| 20~35       |                        | 16.1          | 2.3           | 6.4           | 8.4           | 7.1           | 7.1           | 6.0           | 5.7           | <b>7.2</b>  |
| 35~40       |                        | 15.1          | 32.3          | 31.8          | 28.5          | 21.1          | 22.0          | 17.7          | 10.4          | <b>22.3</b> |
| 40~50       |                        | 38.7          | 48.2          | 34.1          | 31.8          | 32.4          | 27.4          | 20.5          | 21.9          | <b>31.3</b> |
| At least 50 |                        | 15.6          | 11.4          | 17.7          | 15.9          | 15.5          | 18.6          | 15.9          | 4.7           | <b>14.9</b> |

### 4.3.2 Lifestyle

Table 4-3-1-3-8 Average sleeping hours per day (%)

| Gender (year) | Age group (n) | Subjects    | Below 6 hrs | 6~9 hrs     | 9 hrs or more |
|---------------|---------------|-------------|-------------|-------------|---------------|
| M             | 20~24         | 188         | 10.1        | 82.4        | 7.4           |
|               | 25~29         | 188         | 8.9         | 89.5        | 1.6           |
|               | 30~34         | 194         | 14.4        | 85.1        | 0.5           |
|               | 35~39         | 192         | 6.8         | 90.6        | 2.6           |
|               | 40~44         | 201         | 11.4        | 86.6        | 2.0           |
|               | 45~49         | 231         | 10.8        | 85.7        | 3.5           |
|               | 50~54         | 209         | 17.7        | 74.6        | 7.7           |
|               | 55~59         | 184         | 15.2        | 82.6        | 2.2           |
| F             | 20~24         | 199         | 7.5         | 87.9        | 4.5           |
|               | 25~29         | 220         | 7.3         | 89.1        | 3.6           |
|               | 30~34         | 220         | 13.2        | 84.1        | 2.7           |
|               | 35~39         | 214         | 12.1        | 83.2        | 4.7           |
|               | 40~44         | 336         | 10.7        | 87.2        | 2.1           |
|               | 45~49         | 354         | 16.9        | 78.0        | 5.1           |
|               | 50~54         | 283         | 22.3        | 74.2        | 3.5           |
|               | 55~59         | 192         | 25.0        | 72.4        | 2.6           |
| <b>Total</b>  |               | <b>3605</b> | <b>13.4</b> | <b>83.1</b> | <b>3.5</b>    |

Table 4-3-1-3-9 Quality of sleep (%)

| Gender       | Age group (year) | Subjects (n) | Poor       | Reasonable  | Good        |
|--------------|------------------|--------------|------------|-------------|-------------|
| M            | 20~24            | 188          | 4.8        | 69.1        | 26.1        |
|              | 25~29            | 188          | 8.9        | 72.3        | 18.8        |
|              | 30~34            | 194          | 4.6        | 68.6        | 26.8        |
|              | 35~39            | 192          | 8.3        | 67.2        | 24.5        |
|              | 40~44            | 201          | 4.0        | 64.2        | 31.8        |
|              | 45~49            | 231          | 8.7        | 56.7        | 34.6        |
|              | 50~54            | 209          | 6.7        | 57.9        | 35.4        |
|              | 55~59            | 184          | 6.5        | 59.2        | 34.2        |
| F            | 20~24            | 199          | 11.1       | 67.3        | 21.6        |
|              | 25~29            | 220          | 7.3        | 72.7        | 20.0        |
|              | 30~34            | 220          | 10.9       | 70.0        | 19.1        |
|              | 35~39            | 214          | 9.8        | 71.0        | 19.2        |
|              | 40~44            | 336          | 11.3       | 65.8        | 22.9        |
|              | 45~49            | 354          | 11.9       | 63.8        | 24.3        |
|              | 50~54            | 283          | 15.2       | 59.4        | 25.4        |
|              | 55~59            | 192          | 18.2       | 56.8        | 25.0        |
| <b>Total</b> |                  | <b>3605</b>  | <b>9.6</b> | <b>65.0</b> | <b>25.4</b> |

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Table 4-3-1-3-10 Average walking hours every day (%)

| Gender (year) | Age group (n) | Subjects    | Below 30 mins | 30~60 mins  | 1~2 hrs     | 2 hrs or more |
|---------------|---------------|-------------|---------------|-------------|-------------|---------------|
| M             | 20~24         | 188         | 34.6          | 36.2        | 14.4        | 14.9          |
|               | 25~29         | 191         | 40.8          | 44.5        | 11.0        | 3.7           |
|               | 30~34         | 194         | 54.1          | 29.9        | 8.8         | 7.2           |
|               | 35~39         | 192         | 40.6          | 40.1        | 10.9        | 8.3           |
|               | 40~44         | 201         | 35.3          | 39.8        | 11.4        | 13.4          |
|               | 45~49         | 231         | 29.0          | 28.6        | 19.9        | 22.5          |
|               | 50~54         | 209         | 29.2          | 36.4        | 13.9        | 20.6          |
|               | 55~59         | 184         | 21.2          | 50.0        | 15.8        | 13.0          |
| F             | 20~24         | 199         | 49.2          | 40.7        | 5.5         | 4.5           |
|               | 25~29         | 220         | 49.5          | 37.7        | 8.2         | 4.5           |
|               | 30~34         | 220         | 55.0          | 25.9        | 9.5         | 9.5           |
|               | 35~39         | 214         | 48.1          | 29.4        | 10.3        | 12.1          |
|               | 40~44         | 336         | 36.6          | 25.6        | 18.2        | 19.6          |
|               | 45~49         | 354         | 27.7          | 30.5        | 18.1        | 23.7          |
|               | 50~54         | 283         | 17.0          | 32.9        | 24.4        | 25.8          |
|               | 55~59         | 192         | 19.3          | 26.6        | 22.9        | 31.3          |
| <b>Total</b>  |               | <b>3608</b> | <b>36.1</b>   | <b>33.9</b> | <b>14.5</b> | <b>15.5</b>   |

Table 4-3-1-3-11 Average sitting hours every day (%)

| Gender       | Age group (year) | Subjects (n) | Below 3 hrs | 3~6 hrs     | 6~9 hrs     | 9~12 hrs    | 12 hrs or more |
|--------------|------------------|--------------|-------------|-------------|-------------|-------------|----------------|
| M            | 20~24            | 188          | 5.3         | 39.9        | 31.4        | 18.1        | 5.3            |
|              | 25~29            | 191          | 8.4         | 30.9        | 33.0        | 15.7        | 12.0           |
|              | 30~34            | 194          | 19.1        | 37.1        | 26.8        | 13.4        | 3.6            |
|              | 35~39            | 192          | 10.9        | 44.3        | 30.2        | 13.0        | 1.6            |
|              | 40~44            | 201          | 20.4        | 38.3        | 26.4        | 10.4        | 4.5            |
|              | 45~49            | 231          | 26.0        | 44.6        | 18.6        | 8.7         | 2.2            |
|              | 50~54            | 209          | 22.0        | 40.7        | 22.5        | 12.4        | 2.4            |
|              | 55~59            | 184          | 16.3        | 50.0        | 23.9        | 9.2         | 0.5            |
| F            | 20~24            | 199          | 6.5         | 33.7        | 27.6        | 23.6        | 8.5            |
|              | 25~29            | 220          | 5.0         | 35.9        | 30.5        | 20.0        | 8.6            |
|              | 30~34            | 220          | 9.5         | 30.9        | 32.7        | 19.5        | 7.3            |
|              | 35~39            | 214          | 12.1        | 36.9        | 26.2        | 17.3        | 7.5            |
|              | 40~44            | 336          | 18.2        | 41.7        | 23.5        | 13.4        | 3.3            |
|              | 45~49            | 354          | 21.8        | 39.5        | 22.9        | 12.7        | 3.1            |
|              | 50~54            | 283          | 23.0        | 50.9        | 17.7        | 7.1         | 1.4            |
|              | 55~59            | 192          | 28.6        | 45.3        | 16.7        | 6.8         | 2.6            |
| <b>Total</b> |                  | <b>3608</b>  | <b>16.4</b> | <b>40.2</b> | <b>25.2</b> | <b>13.7</b> | <b>4.5</b>     |

Table 4-3-1-3-12 Activities during leisure time (%)

| Gender       | Age group (year) | Subjects (n) | Physical exercise | Chess      | Traveling   | Gathering   | Audio-visual Entertainment | House chores | Sleeping    | Others      |
|--------------|------------------|--------------|-------------------|------------|-------------|-------------|----------------------------|--------------|-------------|-------------|
| M            | 20~24            | 188          | 36.2              | 9.6        | 43.1        | 43.6        | 75.5                       | 5.3          | 35.1        | 11.2        |
|              | 25~29            | 191          | 44.0              | 8.9        | 36.6        | 36.6        | 79.6                       | 8.4          | 39.3        | 10.5        |
|              | 30~34            | 194          | 33.5              | 12.4       | 34.5        | 37.1        | 68.6                       | 21.6         | 34.5        | 11.9        |
|              | 35~39            | 192          | 29.7              | 6.3        | 41.7        | 37.0        | 66.7                       | 23.4         | 28.6        | 11.5        |
|              | 40~44            | 201          | 40.8              | 10.0       | 16.9        | 22.4        | 61.7                       | 36.3         | 29.4        | 18.9        |
|              | 45~49            | 231          | 39.4              | 7.4        | 22.9        | 22.5        | 62.3                       | 38.1         | 29.4        | 13.9        |
|              | 50~54            | 209          | 36.8              | 7.2        | 19.6        | 12.9        | 68.4                       | 42.1         | 24.9        | 16.3        |
|              | 55~59            | 184          | 30.4              | 8.7        | 15.8        | 18.5        | 65.2                       | 33.2         | 15.2        | 15.8        |
| F            | 20~24            | 199          | 10.6              | 1.0        | 33.2        | 47.2        | 79.4                       | 17.6         | 56.3        | 16.1        |
|              | 25~29            | 220          | 15.0              | 1.4        | 28.6        | 45.9        | 74.5                       | 29.1         | 56.4        | 14.5        |
|              | 30~34            | 220          | 21.4              | 2.7        | 23.2        | 43.6        | 65.5                       | 48.2         | 47.7        | 15.0        |
|              | 35~39            | 214          | 22.0              | 4.2        | 16.8        | 33.6        | 60.7                       | 68.2         | 37.4        | 12.1        |
|              | 40~44            | 336          | 23.8              | 5.7        | 13.1        | 28.9        | 61.9                       | 73.5         | 33.3        | 12.2        |
|              | 45~49            | 354          | 29.4              | 3.1        | 11.0        | 16.1        | 64.4                       | 80.5         | 25.7        | 9.3         |
|              | 50~54            | 283          | 38.2              | 3.2        | 7.8         | 19.4        | 67.5                       | 84.8         | 16.3        | 11.0        |
|              | 55~59            | 192          | 41.1              | 5.2        | 6.3         | 23.4        | 67.2                       | 82.3         | 9.9         | 9.9         |
| <b>Total</b> |                  | <b>3608</b>  | <b>30.5</b>       | <b>5.8</b> | <b>21.8</b> | <b>29.6</b> | <b>67.6</b>                | <b>47.2</b>  | <b>32.1</b> | <b>12.9</b> |

Table 4-3-1-3-13 Number of cigarettes smoked per day (%)

| Gender       | Age group (year) | Subjects (n) | Smokers (n) | Below 10 cigarettes/d | 10~20 cigarettes/d | 20 or more cigarettes/d |
|--------------|------------------|--------------|-------------|-----------------------|--------------------|-------------------------|
| M            | 20~24            | 188          | 54          | 75.9                  | 24.1               | 0.0                     |
|              | 25~29            | 191          | 61          | 60.7                  | 39.3               | 0.0                     |
|              | 30~34            | 194          | 47          | 48.9                  | 42.6               | 8.5                     |
|              | 35~39            | 192          | 54          | 55.6                  | 29.6               | 14.8                    |
|              | 40~44            | 201          | 39          | 30.8                  | 41.0               | 28.2                    |
|              | 45~49            | 231          | 65          | 38.5                  | 40.0               | 21.5                    |
|              | 50~54            | 209          | 58          | 20.7                  | 58.6               | 20.7                    |
|              | 55~59            | 184          | 58          | 39.7                  | 37.9               | 22.4                    |
| F            | 20~24            | 199          | 18          | 83.3                  | 16.7               | 0.0                     |
|              | 25~29            | 220          | 29          | 69.0                  | 20.7               | 10.3                    |
|              | 30~34            | 220          | 11          | 63.6                  | 36.4               | 0.0                     |
|              | 35~39            | 214          | 9           | 44.4                  | 44.4               | 11.1                    |
|              | 40~44            | 336          | 8           | 87.5                  | 12.5               | 0.0                     |
|              | 45~49            | 354          | 8           | 87.5                  | 12.5               | 0.0                     |
|              | 50~54            | 283          | 4           | 50.0                  | 50.0               | 0.0                     |
|              | 55~59            | 192          | 1           | 100.0                 | 0.0                | 0.0                     |
| <b>Total</b> |                  | <b>3608</b>  | <b>524</b>  | <b>50.8</b>           | <b>36.6</b>        | <b>12.6</b>             |

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Table 4-3-1-3-14 Smoking years (%)

| Gender       | Age group (year) | Smokers (n) | Less than 5 years | 5~10 years  | 10~15 years | 15 years or more |
|--------------|------------------|-------------|-------------------|-------------|-------------|------------------|
| M            | 20~24            | 62          | 56.5              | 35.5        | 8.1         | 0.0              |
|              | 25~29            | 70          | 41.4              | 32.9        | 17.1        | 8.6              |
|              | 30~34            | 58          | 12.1              | 27.6        | 34.5        | 25.9             |
|              | 35~39            | 65          | 16.9              | 13.8        | 24.6        | 44.6             |
|              | 40~44            | 58          | 15.5              | 22.4        | 17.2        | 44.8             |
|              | 45~49            | 81          | 11.1              | 11.1        | 12.3        | 65.4             |
|              | 50~54            | 76          | 2.6               | 10.5        | 15.8        | 71.1             |
|              | 55~59            | 76          | 5.3               | 9.2         | 17.1        | 68.4             |
| F            | 20~24            | 19          | 57.9              | 42.1        | 0.0         | 0.0              |
|              | 25~29            | 32          | 40.6              | 34.4        | 25.0        | 0.0              |
|              | 30~34            | 16          | 56.3              | 18.8        | 25.0        | 0.0              |
|              | 35~39            | 9           | 11.1              | 22.2        | 33.3        | 33.3             |
|              | 40~44            | 10          | 40.0              | 10.0        | 20.0        | 30.0             |
|              | 45~49            | 11          | 45.5              | 18.2        | 36.4        | 0.0              |
|              | 50~54            | 5           | 20.0              | 20.0        | 20.0        | 40.0             |
|              | 55~59            | 1           | 0.0               | 0.0         | 0.0         | 100.0            |
| <b>Total</b> |                  | <b>649</b>  | <b>23.1</b>       | <b>20.8</b> | <b>18.5</b> | <b>37.6</b>      |

Table 4-3-1-3-15 Smoke quitters (%)

| Gender | Age group (year)                   | 20~24 | 25~29 | 30~34 | 35~39 | 40~44 | 45~49 | 50~54 | 55~59 |
|--------|------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| M      | Smokers                            | 62    | 70    | 58    | 65    | 58    | 81    | 76    | 76    |
|        | Quit smoking for less than 2 years | 8.1   | 5.7   | 13.8  | 1.5   | 1.7   | 0.0   | 6.6   | 3.9   |
|        | Quit smoking for at least 2 years  | 4.8   | 7.1   | 5.2   | 15.4  | 31.0  | 19.8  | 17.1  | 19.7  |
| F      | Smokers                            | 19    | 32    | 16    | 9     | 10    | 11    | 5     | 1     |
|        | Quit smoking for less than 2 years | 0.0   | 3.1   | 6.3   | 0.0   | 0.0   | 9.1   | 0.0   | 0.0   |
|        | Quit smoking for at least 2 years  | 5.3   | 6.3   | 25.0  | 0.0   | 20.0  | 18.2  | 20.0  | 0.0   |

Table 4-3-1-3-16 Drinkers (%)

| Gender | Age group (year)       | 20~24 | 25~29 | 30~34 | 35~39 | 40~44 | 45~49 | 50~54 | 55~59 |
|--------|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| M      | Subjects (n)           | 188   | 191   | 194   | 192   | 201   | 231   | 209   | 184   |
|        | Percentage of drinkers | 50.5  | 44.5  | 44.8  | 49.0  | 50.7  | 51.1  | 49.3  | 45.7  |
| F      | Subjects (n)           | 199   | 220   | 220   | 214   | 336   | 354   | 283   | 192   |
|        | Percentage of drinkers | 30.2  | 24.5  | 20.9  | 16.4  | 14.9  | 15.3  | 14.1  | 9.9   |

Table 4-3-1-3-17 Frequency of drinking (%)

| Gender       | Age group (year) | Drinkers (n) | 1 time /month | 1~2 times/week | 3~4 times/week | 5~7 times/week |
|--------------|------------------|--------------|---------------|----------------|----------------|----------------|
| M            | 20~24            | 95           | 50.5          | 40.0           | 5.3            | 4.2            |
|              | 25~29            | 85           | 61.2          | 30.6           | 8.2            | 0.0            |
|              | 30~34            | 87           | 59.8          | 31.0           | 6.9            | 2.3            |
|              | 35~39            | 94           | 46.8          | 35.1           | 11.7           | 6.4            |
|              | 40~44            | 102          | 43.1          | 31.4           | 14.7           | 10.8           |
|              | 45~49            | 118          | 32.2          | 32.2           | 18.6           | 16.9           |
|              | 50~54            | 103          | 29.1          | 32.0           | 15.5           | 23.3           |
|              | 55~59            | 84           | 34.5          | 40.5           | 13.1           | 11.9           |
| F            | 20~24            | 60           | 68.3          | 26.7           | 1.7            | 3.3            |
|              | 25~29            | 54           | 68.5          | 25.9           | 1.9            | 3.7            |
|              | 30~34            | 46           | 82.6          | 13.0           | 0.0            | 4.3            |
|              | 35~39            | 35           | 62.9          | 31.4           | 5.7            | 0.0            |
|              | 40~44            | 50           | 68.0          | 20.0           | 8.0            | 4.0            |
|              | 45~49            | 54           | 75.9          | 16.7           | 3.7            | 3.7            |
|              | 50~54            | 40           | 70.0          | 15.0           | 12.5           | 2.5            |
|              | 55~59            | 19           | 73.7          | 10.5           | 5.3            | 10.5           |
| <b>Total</b> |                  | <b>1126</b>  | <b>52.6</b>   | <b>29.7</b>    | <b>9.7</b>     | <b>8.0</b>     |

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Table 4-3-1-3-18 Type of alcohol (%)

| Gender       | Age group (year) | Drinkers (n) | Liquor     | Beer        | Yellow wine | Rice wine  | Wine or fruit wine | Mixed      |
|--------------|------------------|--------------|------------|-------------|-------------|------------|--------------------|------------|
| M            | 20~24            | 95           | 0.0        | 89.5        | 0.0         | 0.0        | 9.5                | 1.1        |
|              | 25~29            | 85           | 1.2        | 84.7        | 0.0         | 1.2        | 10.6               | 2.4        |
|              | 30~34            | 87           | 1.1        | 67.8        | 0.0         | 4.6        | 23.0               | 3.4        |
|              | 35~39            | 94           | 0.0        | 63.8        | 0.0         | 33.0       | 3.2                | 0.0        |
|              | 40~44            | 102          | 3.9        | 72.5        | 0.0         | 3.9        | 12.7               | 6.9        |
|              | 45~49            | 118          | 1.7        | 67.8        | 0.8         | 3.4        | 17.8               | 8.5        |
|              | 50~54            | 103          | 1.0        | 66.0        | 1.0         | 10.7       | 10.7               | 10.7       |
|              | 55~59            | 84           | 2.4        | 66.7        | 1.2         | 3.6        | 19.0               | 7.1        |
| F            | 20~24            | 60           | 6.7        | 73.3        | 0.0         | 0.0        | 13.3               | 6.7        |
|              | 25~29            | 54           | 1.9        | 72.2        | 0.0         | 0.0        | 25.9               | 0.0        |
|              | 30~34            | 46           | 2.2        | 45.7        | 2.2         | 0.0        | 45.7               | 4.3        |
|              | 35~39            | 35           | 0.0        | 62.9        | 0.0         | 5.7        | 22.9               | 8.6        |
|              | 40~44            | 50           | 0.0        | 42.0        | 0.0         | 2.0        | 46.0               | 10.0       |
|              | 45~49            | 54           | 0.0        | 48.1        | 1.9         | 3.7        | 33.3               | 13.0       |
|              | 50~54            | 40           | 2.5        | 32.5        | 2.5         | 5.0        | 52.5               | 5.0        |
|              | 55~59            | 19           | 0.0        | 0.0         | 36.8        | 5.3        | 42.1               | 15.8       |
| <b>Total</b> |                  | <b>1126</b>  | <b>1.6</b> | <b>65.7</b> | <b>1.2</b>  | <b>5.9</b> | <b>19.8</b>        | <b>5.9</b> |

Table 4-3-1-3-19 Frequency of doing physical exercises each week (%)

| Gender       | Age group (year) | Subjects (n) | Subjects doing physical exercises (n) | At most once | 1~2 times   | 3~4 times   | 5 times or more |
|--------------|------------------|--------------|---------------------------------------|--------------|-------------|-------------|-----------------|
| M            | 20~24            | 188          | 130                                   | 31.5         | 43.1        | 20.8        | 4.6             |
|              | 25~29            | 191          | 131                                   | 39.7         | 45.0        | 10.7        | 4.6             |
|              | 30~34            | 194          | 138                                   | 39.9         | 39.1        | 10.1        | 10.9            |
|              | 35~39            | 192          | 129                                   | 34.9         | 39.5        | 18.6        | 7.0             |
|              | 40~44            | 201          | 139                                   | 26.6         | 30.2        | 26.6        | 16.5            |
|              | 45~49            | 231          | 156                                   | 10.9         | 38.5        | 26.3        | 24.4            |
|              | 50~54            | 209          | 132                                   | 12.9         | 29.5        | 22.7        | 34.8            |
|              | 55~59            | 184          | 119                                   | 15.1         | 31.9        | 26.1        | 26.9            |
| F            | 20~24            | 199          | 106                                   | 64.5         | 29.0        | 3.7         | 2.8             |
|              | 25~29            | 220          | 128                                   | 54.7         | 35.2        | 9.4         | 0.8             |
|              | 30~34            | 220          | 133                                   | 42.1         | 39.8        | 12.0        | 6.0             |
|              | 35~39            | 214          | 121                                   | 33.9         | 36.4        | 19.0        | 10.7            |
|              | 40~44            | 336          | 193                                   | 27.5         | 34.2        | 19.7        | 18.7            |
|              | 45~49            | 354          | 215                                   | 17.2         | 27.4        | 31.2        | 24.2            |
|              | 50~54            | 283          | 193                                   | 11.4         | 23.8        | 24.4        | 40.4            |
|              | 55~59            | 192          | 132                                   | 9.1          | 23.5        | 18.9        | 48.5            |
| <b>Total</b> |                  | <b>3608</b>  | <b>2295</b>                           | <b>28.0</b>  | <b>33.7</b> | <b>19.6</b> | <b>18.7</b>     |

Table 4-3-1-3-20 Duration of doing physical exercises each time (%)

| Gender       | Age group (year) | Subjects doing physical exercises (n) | Less than 30 mins | 30~60 mins  | 60 mins or more |
|--------------|------------------|---------------------------------------|-------------------|-------------|-----------------|
| M            | 20~24            | 130                                   | 21.5              | 42.3        | 36.2            |
|              | 25~29            | 131                                   | 27.5              | 48.9        | 23.7            |
|              | 30~34            | 138                                   | 39.1              | 42.0        | 18.8            |
|              | 35~39            | 129                                   | 31.0              | 56.6        | 12.4            |
|              | 40~44            | 139                                   | 41.7              | 41.0        | 17.3            |
|              | 45~49            | 156                                   | 39.1              | 48.1        | 12.8            |
|              | 50~54            | 132                                   | 33.3              | 50.8        | 15.9            |
|              | 55~59            | 119                                   | 42.9              | 48.7        | 8.4             |
| F            | 20~24            | 106                                   | 49.5              | 42.1        | 8.4             |
|              | 25~29            | 128                                   | 48.4              | 43.8        | 7.8             |
|              | 30~34            | 133                                   | 46.6              | 42.9        | 10.5            |
|              | 35~39            | 121                                   | 56.2              | 36.4        | 7.4             |
|              | 40~44            | 193                                   | 45.6              | 39.9        | 14.5            |
|              | 45~49            | 215                                   | 39.1              | 40.9        | 20.0            |
|              | 50~54            | 193                                   | 31.1              | 46.6        | 22.3            |
|              | 55~59            | 132                                   | 24.2              | 45.5        | 30.3            |
| <b>Total</b> |                  | <b>2295</b>                           | <b>38.4</b>       | <b>44.6</b> | <b>17.0</b>     |

Table 4-3-1-3-21 Self perception when doing physical exercises (%)

| Gender       | Age group (year) | Subjects doing physical exercises (n) | Not much breathing and heart rate change | Slight increase in breathing and heart rate with little perspiration | Rapid breathing, apparent heart rate increase and perspiring greatly |
|--------------|------------------|---------------------------------------|------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|
| M            | 20~24            | 130                                   | 9.2                                      | 59.2                                                                 | 31.5                                                                 |
|              | 25~29            | 131                                   | 5.3                                      | 56.5                                                                 | 38.2                                                                 |
|              | 30~34            | 138                                   | 10.1                                     | 48.6                                                                 | 41.3                                                                 |
|              | 35~39            | 129                                   | 16.3                                     | 48.1                                                                 | 35.7                                                                 |
|              | 40~44            | 139                                   | 18.0                                     | 54.7                                                                 | 27.3                                                                 |
|              | 45~49            | 156                                   | 27.6                                     | 53.8                                                                 | 18.6                                                                 |
|              | 50~54            | 132                                   | 25.0                                     | 55.3                                                                 | 19.7                                                                 |
|              | 55~59            | 119                                   | 28.6                                     | 63.0                                                                 | 8.4                                                                  |
| F            | 20~24            | 106                                   | 8.5                                      | 58.5                                                                 | 33.0                                                                 |
|              | 25~29            | 128                                   | 7.8                                      | 64.8                                                                 | 27.3                                                                 |
|              | 30~34            | 133                                   | 8.3                                      | 59.4                                                                 | 32.3                                                                 |
|              | 35~39            | 121                                   | 14.0                                     | 70.2                                                                 | 15.7                                                                 |
|              | 40~44            | 193                                   | 20.2                                     | 64.2                                                                 | 15.5                                                                 |
|              | 45~49            | 215                                   | 32.6                                     | 51.2                                                                 | 16.3                                                                 |
|              | 50~54            | 193                                   | 28.0                                     | 61.1                                                                 | 10.9                                                                 |
|              | 55~59            | 132                                   | 28.8                                     | 64.4                                                                 | 6.8                                                                  |
| <b>Total</b> |                  | <b>2295</b>                           | <b>19.0</b>                              | <b>58.1</b>                                                          | <b>22.8</b>                                                          |

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Table 4-3-1-3-22 Length of time participating in physical exercises (%)

| Gender       | Age group (year) | Subjects doing physical exercises (n) | Less than 6 months | 6~12 months | 1~3 years   | 3~5 years  | 5 years or more |
|--------------|------------------|---------------------------------------|--------------------|-------------|-------------|------------|-----------------|
| M            | 20~24            | 130                                   | 30.8               | 19.2        | 13.8        | 10.0       | 26.2            |
|              | 25~29            | 131                                   | 35.1               | 15.3        | 15.3        | 6.1        | 28.2            |
|              | 30~34            | 138                                   | 44.9               | 13.0        | 13.0        | 8.0        | 21.0            |
|              | 35~39            | 129                                   | 26.4               | 19.4        | 20.9        | 9.3        | 24.0            |
|              | 40~44            | 139                                   | 27.3               | 10.8        | 16.5        | 10.1       | 35.3            |
|              | 45~49            | 156                                   | 27.6               | 8.3         | 11.5        | 12.2       | 40.4            |
|              | 50~54            | 132                                   | 17.4               | 6.1         | 12.1        | 7.6        | 56.8            |
|              | 55~59            | 119                                   | 16.8               | 12.6        | 15.1        | 15.1       | 40.3            |
| F            | 20~24            | 106                                   | 72.6               | 8.5         | 5.7         | 7.5        | 5.7             |
|              | 25~29            | 128                                   | 59.4               | 14.1        | 11.7        | 4.7        | 9.4             |
|              | 30~34            | 133                                   | 57.1               | 16.5        | 8.3         | 5.3        | 12.0            |
|              | 35~39            | 121                                   | 48.8               | 17.4        | 14.9        | 4.1        | 14.9            |
|              | 40~44            | 193                                   | 42.0               | 15.0        | 17.6        | 6.7        | 18.7            |
|              | 45~49            | 215                                   | 27.9               | 10.2        | 27.9        | 12.6       | 21.4            |
|              | 50~54            | 193                                   | 18.7               | 11.9        | 26.9        | 13.5       | 29.0            |
|              | 55~59            | 132                                   | 13.6               | 12.9        | 19.7        | 16.7       | 37.1            |
| <b>Total</b> |                  | <b>2295</b>                           | <b>34.4</b>        | <b>13.1</b> | <b>16.5</b> | <b>9.6</b> | <b>26.4</b>     |

Table 4-3-1-3-23 Purposes of doing physical exercises (%)

| Gender       | Age group (year) | Subjects doing physical exercises (n) | Prevention and cure of diseases | Improvement of physical ability | Weight loss and fitness | Pressure relieve and mood regulation | Socializing | Others      |
|--------------|------------------|---------------------------------------|---------------------------------|---------------------------------|-------------------------|--------------------------------------|-------------|-------------|
| M            | 20~24            | 130                                   | 36.2                            | 79.2                            | 20.8                    | 51.5                                 | 24.6        | 18.5        |
|              | 25~29            | 131                                   | 46.6                            | 78.6                            | 28.2                    | 71.8                                 | 18.3        | 6.9         |
|              | 30~34            | 138                                   | 54.3                            | 68.1                            | 25.4                    | 59.4                                 | 15.9        | 12.3        |
|              | 35~39            | 129                                   | 50.4                            | 63.6                            | 27.1                    | 58.1                                 | 15.5        | 13.2        |
|              | 40~44            | 139                                   | 60.4                            | 61.2                            | 26.6                    | 45.3                                 | 11.5        | 10.8        |
|              | 45~49            | 156                                   | 69.9                            | 46.2                            | 17.9                    | 53.2                                 | 8.3         | 14.7        |
|              | 50~54            | 132                                   | 72.7                            | 53.8                            | 11.4                    | 43.9                                 | 13.6        | 18.2        |
|              | 55~59            | 119                                   | 77.3                            | 46.2                            | 8.4                     | 49.6                                 | 4.2         | 8.4         |
| F            | 20~24            | 106                                   | 34.6                            | 43.0                            | 66.4                    | 57.9                                 | 18.7        | 8.4         |
|              | 25~29            | 128                                   | 53.9                            | 37.5                            | 54.7                    | 72.7                                 | 23.4        | 9.4         |
|              | 30~34            | 133                                   | 52.6                            | 51.9                            | 60.9                    | 55.6                                 | 7.5         | 11.3        |
|              | 35~39            | 121                                   | 60.3                            | 41.3                            | 62.8                    | 59.5                                 | 9.9         | 6.6         |
|              | 40~44            | 193                                   | 68.9                            | 42.0                            | 49.7                    | 53.4                                 | 7.3         | 9.8         |
|              | 45~49            | 215                                   | 73.5                            | 37.2                            | 39.1                    | 39.5                                 | 7.9         | 7.9         |
|              | 50~54            | 193                                   | 80.8                            | 37.3                            | 22.3                    | 40.9                                 | 11.9        | 7.3         |
|              | 55~59            | 132                                   | 81.1                            | 41.7                            | 21.2                    | 30.3                                 | 17.4        | 12.1        |
| <b>Total</b> |                  | <b>2295</b>                           | <b>62.4</b>                     | <b>50.8</b>                     | <b>33.7</b>             | <b>51.8</b>                          | <b>13.0</b> | <b>10.8</b> |

Table 4-3-1-3-24 Major locations for doing physical exercises (%)

| Gender       | Age group (year) | Subjects doing physical exercises (n) | Stadium/arena | Park        | Office/Residential area | Open ground | Road or street | Club        | Others      |
|--------------|------------------|---------------------------------------|---------------|-------------|-------------------------|-------------|----------------|-------------|-------------|
| M            | 20~24            | 130                                   | 64.6          | 27.7        | 7.7                     | 23.8        | 11.5           | 20.8        | 18.5        |
|              | 25~29            | 131                                   | 60.3          | 29.8        | 7.6                     | 28.2        | 17.6           | 18.3        | 17.6        |
|              | 30~34            | 138                                   | 46.4          | 43.5        | 13.8                    | 30.4        | 23.2           | 7.2         | 17.4        |
|              | 35~39            | 129                                   | 39.5          | 47.3        | 7.8                     | 24.0        | 27.9           | 10.9        | 14.0        |
|              | 40~44            | 139                                   | 36.0          | 48.2        | 8.6                     | 19.4        | 36.0           | 8.6         | 15.1        |
|              | 45~49            | 156                                   | 20.5          | 48.1        | 14.1                    | 20.5        | 34.0           | 7.1         | 15.4        |
|              | 50~54            | 132                                   | 22.9          | 54.2        | 19.8                    | 24.4        | 27.5           | 3.1         | 14.5        |
|              | 55~59            | 119                                   | 22.7          | 60.5        | 14.3                    | 22.7        | 25.2           | 6.7         | 10.1        |
| F            | 20~24            | 106                                   | 43.9          | 49.5        | 25.2                    | 29.0        | 14.0           | 13.1        | 11.2        |
|              | 25~29            | 128                                   | 37.5          | 50.0        | 13.3                    | 23.4        | 20.3           | 16.4        | 10.9        |
|              | 30~34            | 133                                   | 31.6          | 54.1        | 21.8                    | 21.1        | 8.3            | 18.8        | 14.3        |
|              | 35~39            | 121                                   | 23.1          | 56.2        | 32.2                    | 21.5        | 12.4           | 11.6        | 12.4        |
|              | 40~44            | 193                                   | 19.7          | 61.7        | 23.3                    | 16.1        | 13.0           | 11.4        | 11.4        |
|              | 45~49            | 215                                   | 16.7          | 62.8        | 17.2                    | 19.5        | 12.6           | 9.3         | 11.2        |
|              | 50~54            | 193                                   | 26.9          | 57.0        | 22.3                    | 19.2        | 8.8            | 4.7         | 8.3         |
|              | 55~59            | 132                                   | 30.3          | 67.4        | 15.2                    | 9.1         | 12.9           | 6.8         | 6.8         |
| <b>Total</b> |                  | <b>2295</b>                           | <b>32.6</b>   | <b>51.9</b> | <b>16.7</b>             | <b>21.6</b> | <b>18.7</b>    | <b>10.6</b> | <b>12.9</b> |

Table 4-3-1-3-25 Major sports activities (%)

| Gender       | Age group (year) | Subjects doing physical exercises (n) | Jogging     | Swimming    | Walking     | Ball games  | Climbing    | Cycling    | Work-out   | Aerobics and yangko | Martial arts and Qigong | Boxing     | Fencing    | Yoga       | Judo       | Taekwondo  | Karate     | Others     |
|--------------|------------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|------------|------------|---------------------|-------------------------|------------|------------|------------|------------|------------|------------|------------|
| M            | 20~24            | 130                                   | 68.5        | 21.5        | 20.8        | 68.5        | 7.7         | 1.5        | 25.4       | 0.0                 | 3.8                     | 1.5        | 0.0        | 0.0        | 0.0        | 2.3        | 2.3        | 3.8        |
|              | 25~29            | 131                                   | 59.5        | 20.6        | 24.4        | 67.2        | 6.1         | 3.1        | 20.6       | 3.1                 | 3.8                     | 2.3        | 0.0        | 0.8        | 0.8        | 0.8        | 1.5        | 4.6        |
|              | 30~34            | 138                                   | 57.2        | 37.0        | 31.9        | 55.8        | 10.9        | 10.1       | 11.6       | 1.4                 | 2.9                     | 2.9        | 0.7        | 0.7        | 0.0        | 0.0        | 0.0        | 3.6        |
|              | 35~39            | 129                                   | 62.0        | 38.0        | 34.1        | 35.7        | 9.3         | 10.9       | 16.3       | 0.0                 | 3.9                     | 0.0        | 0.0        | 0.8        | 0.0        | 0.0        | 0.8        | 4.7        |
|              | 40~44            | 139                                   | 59.0        | 30.2        | 47.5        | 27.3        | 5.0         | 11.5       | 11.5       | 3.6                 | 5.0                     | 1.4        | 0.0        | 2.9        | 0.0        | 0.0        | 0.0        | 2.9        |
|              | 45~49            | 156                                   | 50.6        | 27.6        | 55.8        | 22.4        | 13.5        | 16.0       | 8.3        | 3.8                 | 5.1                     | 0.0        | 0.0        | 1.3        | 0.0        | 0.0        | 0.0        | 5.1        |
|              | 50~54            | 132                                   | 46.2        | 28.0        | 48.5        | 17.4        | 12.9        | 16.7       | 9.8        | 5.3                 | 12.1                    | 1.5        | 0.0        | 1.5        | 0.0        | 0.0        | 0.8        | 8.3        |
|              | 55~59            | 119                                   | 33.6        | 22.7        | 59.7        | 14.3        | 8.4         | 17.6       | 2.5        | 2.5                 | 15.1                    | 0.8        | 0.0        | 0.8        | 0.0        | 0.0        | 0.8        | 6.7        |
| F            | 20~24            | 106                                   | 53.3        | 29.9        | 43.9        | 46.7        | 4.7         | 6.5        | 12.1       | 8.4                 | 0.0                     | 0.9        | 0.9        | 4.7        | 0.0        | 0.9        | 0.0        | 9.3        |
|              | 25~29            | 128                                   | 46.9        | 35.2        | 57.0        | 35.9        | 10.2        | 7.8        | 9.4        | 10.2                | 2.3                     | 0.8        | 0.0        | 10.2       | 0.0        | 0.0        | 0.8        | 3.9        |
|              | 30~34            | 133                                   | 45.1        | 23.3        | 56.4        | 31.6        | 10.5        | 12.0       | 12.8       | 14.3                | 3.0                     | 0.0        | 0.0        | 17.3       | 0.0        | 0.0        | 0.0        | 7.5        |
|              | 35~39            | 121                                   | 38.8        | 24.0        | 66.9        | 16.5        | 8.3         | 13.2       | 5.8        | 19.0                | 5.0                     | 0.0        | 0.0        | 16.5       | 0.0        | 0.0        | 0.8        | 9.9        |
|              | 40~44            | 193                                   | 26.9        | 22.3        | 67.9        | 16.1        | 11.9        | 9.3        | 5.7        | 19.7                | 6.7                     | 0.0        | 0.0        | 15.0       | 0.0        | 0.0        | 0.0        | 7.8        |
|              | 45~49            | 215                                   | 21.9        | 19.1        | 61.4        | 14.9        | 11.6        | 5.6        | 3.7        | 27.4                | 12.6                    | 0.0        | 0.0        | 10.7       | 0.0        | 0.0        | 0.0        | 8.4        |
|              | 50~54            | 193                                   | 14.5        | 18.1        | 59.1        | 3.6         | 14.5        | 4.7        | 4.1        | 30.1                | 19.2                    | 0.0        | 0.0        | 13.5       | 0.0        | 0.0        | 0.0        | 4.7        |
|              | 55~59            | 132                                   | 6.8         | 17.4        | 68.2        | 2.3         | 11.4        | 2.3        | 1.5        | 30.3                | 22.7                    | 0.0        | 0.0        | 11.4       | 0.0        | 0.0        | 0.0        | 10.6       |
| <b>Total</b> |                  | <b>2295</b>                           | <b>41.3</b> | <b>25.4</b> | <b>51.3</b> | <b>28.0</b> | <b>10.2</b> | <b>9.1</b> | <b>9.6</b> | <b>12.5</b>         | <b>8.2</b>              | <b>0.7</b> | <b>0.1</b> | <b>7.2</b> | <b>0.0</b> | <b>0.2</b> | <b>0.4</b> | <b>6.4</b> |

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Table 4-3-1-3-26 Favorite ball games (%)

| Gender       | Age group (year) | Subjects participated in ball games (n) | Basketball  | Volleyball | Football    | Table tennis | Badminton   | Tennis     | Golf       | Billiards  |
|--------------|------------------|-----------------------------------------|-------------|------------|-------------|--------------|-------------|------------|------------|------------|
| M            | 20~24            | 89                                      | 36.3        | 4.4        | 28.8        | 7.5          | 8.8         | 5.0        | 0.0        | 9.4        |
|              | 25~29            | 89                                      | 28.7        | 1.2        | 24.4        | 15.2         | 18.3        | 4.3        | 0.6        | 7.3        |
|              | 30~34            | 77                                      | 13.6        | 1.5        | 24.2        | 21.2         | 23.5        | 11.4       | 0.8        | 3.8        |
|              | 35~39            | 46                                      | 24.3        | 2.7        | 24.3        | 18.9         | 12.2        | 12.2       | 0.0        | 5.4        |
|              | 40~44            | 38                                      | 10.6        | 0.0        | 27.3        | 21.2         | 27.3        | 10.6       | 1.5        | 1.5        |
|              | 45~49            | 37                                      | 16.1        | 0.0        | 28.6        | 28.6         | 21.4        | 1.8        | 1.8        | 1.8        |
|              | 50~54            | 23                                      | 21.2        | 3.0        | 21.2        | 30.3         | 18.2        | 0.0        | 3.0        | 3.0        |
|              | 55~59            | 18                                      | 4.8         | 4.8        | 14.3        | 38.1         | 4.8         | 9.5        | 0.0        | 23.8       |
| F            | 20~24            | 49                                      | 21.3        | 7.5        | 2.5         | 17.5         | 42.5        | 6.3        | 0.0        | 2.5        |
|              | 25~29            | 46                                      | 11.0        | 6.8        | 1.4         | 17.8         | 49.3        | 13.7       | 0.0        | 0.0        |
|              | 30~34            | 43                                      | 8.8         | 7.4        | 0.0         | 16.2         | 51.5        | 13.2       | 1.5        | 1.5        |
|              | 35~39            | 20                                      | 3.7         | 3.7        | 0.0         | 14.8         | 55.6        | 18.5       | 3.7        | 0.0        |
|              | 40~44            | 31                                      | 6.4         | 0.0        | 0.0         | 27.7         | 51.1        | 12.8       | 2.1        | 0.0        |
|              | 45~49            | 32                                      | 6.8         | 4.5        | 0.0         | 22.7         | 56.8        | 9.1        | 0.0        | 0.0        |
|              | 50~54            | 7                                       | 0.0         | 0.0        | 0.0         | 45.5         | 54.5        | 0.0        | 0.0        | 0.0        |
|              | 55~59            | 3                                       | 0.0         | 0.0        | 0.0         | 0.0          | 100         | 0.0        | 0.0        | 0.0        |
| <b>Total</b> |                  | <b>648</b>                              | <b>18.4</b> | <b>3.3</b> | <b>16.6</b> | <b>19.0</b>  | <b>29.1</b> | <b>8.4</b> | <b>0.8</b> | <b>4.4</b> |

Table 4-3-1-3-27 Main obstacles for doing sports activities (%)

| Gender       | Age group (year) | Subjects (n) | No interest | Laziness    | No need for doing sports | Too weak   | Too labor intensive | Lack of time | Lack of location and facilities | Lack of guidance | Lack of organization | Lack of money | Embarrassment | Others      |
|--------------|------------------|--------------|-------------|-------------|--------------------------|------------|---------------------|--------------|---------------------------------|------------------|----------------------|---------------|---------------|-------------|
| M            | 20~24            | 188          | 7.4         | 53.2        | 2.1                      | 2.7        | 8.5                 | 55.9         | 39.4                            | 8.0              | 16.5                 | 6.4           | 3.2           | 4.3         |
|              | 25~29            | 191          | 13.1        | 51.3        | 2.6                      | 1.6        | 6.8                 | 60.7         | 32.5                            | 12.6             | 18.3                 | 1.0           | 0.0           | 5.8         |
|              | 30~34            | 194          | 6.7         | 55.2        | 2.1                      | 2.6        | 12.4                | 63.4         | 27.3                            | 8.8              | 9.8                  | 2.6           | 2.1           | 8.2         |
|              | 35~39            | 192          | 14.1        | 49.5        | 2.6                      | 0.0        | 13.5                | 56.3         | 27.1                            | 9.4              | 7.8                  | 1.0           | 0.5           | 7.8         |
|              | 40~44            | 201          | 10.9        | 35.8        | 3.5                      | 2.5        | 11.9                | 55.2         | 17.4                            | 12.9             | 6.0                  | 1.0           | 0.0           | 13.4        |
|              | 45~49            | 231          | 15.6        | 31.6        | 4.8                      | 3.9        | 17.7                | 48.1         | 11.7                            | 4.3              | 6.9                  | 4.3           | 0.0           | 21.2        |
|              | 50~54            | 209          | 14.4        | 24.4        | 4.3                      | 3.8        | 14.8                | 44.5         | 12.0                            | 6.7              | 6.2                  | 2.4           | 0.0           | 20.1        |
|              | 55~59            | 184          | 9.8         | 29.3        | 3.3                      | 6.5        | 9.2                 | 41.3         | 9.8                             | 8.2              | 6.0                  | 3.3           | 0.5           | 21.2        |
| F            | 20~24            | 199          | 24.1        | 69.3        | 1.5                      | 6.5        | 5.5                 | 63.8         | 25.6                            | 8.0              | 13.6                 | 2.5           | 0.5           | 7.0         |
|              | 25~29            | 220          | 18.2        | 66.4        | 1.4                      | 5.0        | 3.6                 | 60.5         | 23.2                            | 10.5             | 15.9                 | 2.7           | 1.8           | 5.5         |
|              | 30~34            | 220          | 15.0        | 61.4        | 2.3                      | 5.0        | 4.5                 | 62.3         | 22.3                            | 9.1              | 10.0                 | 2.7           | 0.5           | 5.0         |
|              | 35~39            | 214          | 16.8        | 48.1        | 1.4                      | 1.9        | 7.9                 | 55.6         | 21.0                            | 18.2             | 7.9                  | 2.3           | 1.4           | 6.5         |
|              | 40~44            | 336          | 15.5        | 45.8        | 2.1                      | 3.3        | 7.4                 | 57.1         | 12.8                            | 10.1             | 6.5                  | 2.1           | 0.9           | 11.0        |
|              | 45~49            | 354          | 13.3        | 38.1        | 2.0                      | 4.2        | 9.9                 | 50.6         | 9.9                             | 9.3              | 6.5                  | 2.3           | 0.3           | 15.8        |
|              | 50~54            | 283          | 12.4        | 31.8        | 2.5                      | 6.4        | 7.4                 | 48.4         | 9.5                             | 8.8              | 6.7                  | 1.4           | 0.4           | 23.3        |
|              | 55~59            | 192          | 9.9         | 32.8        | 1.0                      | 5.2        | 5.2                 | 42.2         | 7.8                             | 7.3              | 2.6                  | 2.1           | 1.0           | 32.3        |
| <b>Total</b> |                  | <b>3608</b>  | <b>13.7</b> | <b>44.7</b> | <b>2.5</b>               | <b>3.9</b> | <b>9.1</b>          | <b>54.0</b>  | <b>18.3</b>                     | <b>9.5</b>       | <b>8.9</b>           | <b>2.5</b>    | <b>0.8</b>    | <b>13.3</b> |

Table 4-3-1-3-28 Sports activities frequently watched (%)

| Gender       | Age group (year) | Subjects (n) | Basket -ball | Volley -ball | Foot- ball  | Gymna- stics | Swim- ming  | Martial arts | Box- ing   | Table tennis | Billi- ards | Golf       | Bad- minton | Water polo | Base- ball | Soft -ball | Weight lift | Fenc- ing  | Wrestling & Judo | Others      |
|--------------|------------------|--------------|--------------|--------------|-------------|--------------|-------------|--------------|------------|--------------|-------------|------------|-------------|------------|------------|------------|-------------|------------|------------------|-------------|
| M            | 20~24            | 188          | 51.1         | 6.4          | 61.2        | 8.5          | 10.1        | 9.0          | 5.9        | 9.0          | 16.0        | 0.0        | 8.5         | 2.1        | 0.0        | 0.0        | 1.6         | 0.0        | 5.3              | 18.1        |
|              | 25~29            | 191          | 42.4         | 12.6         | 63.9        | 7.9          | 11.0        | 6.8          | 6.8        | 16.8         | 13.6        | 0.5        | 6.8         | 2.1        | 1.0        | 0.0        | 0.5         | 0.0        | 7.3              | 18.3        |
|              | 30~34            | 194          | 28.9         | 13.9         | 58.8        | 10.3         | 17.0        | 7.2          | 12.4       | 16.0         | 10.3        | 0.0        | 10.8        | 0.0        | 2.6        | 0.0        | 1.0         | 0.5        | 1.5              | 25.3        |
|              | 35~39            | 192          | 25.0         | 8.9          | 55.2        | 13.5         | 17.2        | 10.9         | 8.9        | 21.4         | 7.3         | 1.0        | 8.9         | 0.0        | 0.0        | 0.0        | 2.1         | 0.0        | 3.1              | 24.5        |
|              | 40~44            | 201          | 20.9         | 10.4         | 54.2        | 12.9         | 16.9        | 10.9         | 5.5        | 10.9         | 4.0         | 0.5        | 8.5         | 0.5        | 0.0        | 0.0        | 2.0         | 1.0        | 2.0              | 28.4        |
|              | 45~49            | 231          | 29.4         | 12.1         | 55.8        | 6.9          | 16.9        | 13.4         | 7.8        | 13.9         | 7.8         | 0.9        | 6.1         | 0.9        | 0.0        | 0.0        | 0.9         | 0.4        | 0.4              | 26.8        |
|              | 50~54            | 209          | 25.8         | 12.9         | 57.9        | 10.0         | 14.8        | 18.2         | 12.0       | 13.9         | 4.8         | 0.5        | 4.3         | 0.0        | 0.0        | 0.0        | 0.5         | 1.0        | 1.9              | 25.8        |
|              | 55~59            | 184          | 20.1         | 15.8         | 45.7        | 15.2         | 11.4        | 13.0         | 5.4        | 10.9         | 8.2         | 0.5        | 4.9         | 0.0        | 0.0        | 0.0        | 0.0         | 0.5        | 2.2              | 28.8        |
| F            | 20~24            | 199          | 31.7         | 30.7         | 19.1        | 18.1         | 30.2        | 2.0          | 1.0        | 10.1         | 2.5         | 0.0        | 14.1        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0        | 3.0              | 33.2        |
|              | 25~29            | 220          | 18.6         | 33.2         | 20.0        | 25.0         | 29.5        | 2.3          | 1.4        | 9.1          | 0.5         | 0.0        | 18.2        | 0.0        | 0.5        | 0.0        | 0.0         | 0.0        | 1.8              | 32.7        |
|              | 30~34            | 220          | 17.3         | 31.4         | 20.9        | 34.5         | 35.0        | 3.2          | 0.9        | 15.0         | 0.5         | 1.8        | 17.3        | 0.9        | 0.0        | 0.0        | 0.5         | 0.5        | 0.0              | 32.3        |
|              | 35~39            | 214          | 11.2         | 23.8         | 22.4        | 24.3         | 28.5        | 1.9          | 1.4        | 10.3         | 0.5         | 1.4        | 15.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0        | 0.0              | 38.8        |
|              | 40~44            | 336          | 14.3         | 22.3         | 19.9        | 25.0         | 29.8        | 6.3          | 0.9        | 13.7         | 1.2         | 0.9        | 8.6         | 0.3        | 0.3        | 0.0        | 0.3         | 0.0        | 0.6              | 37.8        |
|              | 45~49            | 354          | 12.1         | 16.9         | 15.8        | 24.6         | 25.7        | 7.6          | 0.0        | 8.5          | 0.6         | 0.6        | 6.5         | 0.0        | 0.0        | 0.0        | 0.0         | 0.0        | 0.3              | 44.6        |
|              | 50~54            | 283          | 9.5          | 11.0         | 17.7        | 26.5         | 24.0        | 11.3         | 0.0        | 8.8          | 0.4         | 0.7        | 4.6         | 0.0        | 0.0        | 0.0        | 0.0         | 0.0        | 0.7              | 46.6        |
|              | 55~59            | 192          | 9.4          | 10.9         | 15.1        | 19.8         | 21.4        | 9.9          | 0.5        | 4.2          | 0.5         | 0.5        | 4.2         | 0.0        | 0.0        | 0.0        | 0.0         | 0.5        | 0.5              | 54.2        |
| <b>Total</b> |                  | <b>3608</b>  | <b>21.7</b>  | <b>17.4</b>  | <b>35.4</b> | <b>18.6</b>  | <b>22.0</b> | <b>8.3</b>   | <b>4.0</b> | <b>11.9</b>  | <b>4.4</b>  | <b>0.6</b> | <b>9.1</b>  | <b>0.4</b> | <b>0.2</b> | <b>0.0</b> | <b>0.5</b>  | <b>0.2</b> | <b>1.7</b>       | <b>33.0</b> |

Table 4-3-1-3-29 Percentage of subjects diagnosed with diseases in the past five years (%)

| Gender | Age group (year)     | 20~24 | 25~29 | 30~34 | 35~39 | 40~44 | 45~49 | 50~54 | 55~59 |
|--------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| M      | Subjects (n)         | 188   | 191   | 194   | 192   | 201   | 231   | 209   | 184   |
|        | Disease-stricken (%) | 21.3  | 25.1  | 24.7  | 24.0  | 22.9  | 35.5  | 35.9  | 44.0  |
| F      | Subjects (n)         | 199   | 220   | 220   | 214   | 336   | 354   | 283   | 192   |
|        | Disease-stricken (%) | 27.1  | 22.7  | 24.5  | 23.8  | 33.0  | 35.9  | 43.1  | 57.8  |

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Table 4-3-1-3-30 Types of diseases diagnosed in the past five years (%)

| Gender (year) | Age group | Disease-stricken subjects | Cancer     | Cardio-vascular | Respiratory | Accidental injury | Digestive system | Hypertension | Endocrine  | Urinary or reproductive | Diabetes   | Others      |
|---------------|-----------|---------------------------|------------|-----------------|-------------|-------------------|------------------|--------------|------------|-------------------------|------------|-------------|
| M             | 20~24     | 40                        | 0.0        | 0.0             | 37.5        | 40.0              | 15.0             | 0.0          | 0.0        | 0.0                     | 0.0        | 17.5        |
|               | 25~29     | 48                        | 2.1        | 2.1             | 33.3        | 22.9              | 22.9             | 2.1          | 0.0        | 6.3                     | 0.0        | 31.3        |
|               | 30~34     | 48                        | 6.3        | 2.1             | 18.8        | 20.8              | 33.3             | 12.5         | 2.1        | 4.2                     | 2.1        | 25.0        |
|               | 35~39     | 46                        | 2.2        | 4.3             | 19.6        | 21.7              | 39.1             | 17.4         | 8.7        | 4.3                     | 2.2        | 13.0        |
|               | 40~44     | 46                        | 2.2        | 6.5             | 26.1        | 13.0              | 17.4             | 17.4         | 8.7        | 10.9                    | 6.5        | 21.7        |
|               | 45~49     | 82                        | 2.4        | 8.5             | 14.6        | 12.2              | 28.0             | 30.5         | 1.2        | 4.9                     | 6.1        | 18.3        |
|               | 50~54     | 75                        | 9.3        | 14.7            | 8.0         | 12.0              | 32.0             | 32.0         | 4.0        | 6.7                     | 6.7        | 17.3        |
|               | 55~59     | 81                        | 7.4        | 11.1            | 13.6        | 7.4               | 24.7             | 43.2         | 2.5        | 8.6                     | 9.9        | 24.7        |
| F             | 20~24     | 54                        | 1.1        | 1.1             | 28.7        | 28.7              | 27.7             | 1.1          | 3.2        | 3.2                     | 0.0        | 25.2        |
|               | 25~29     | 50                        | 4.1        | 1.0             | 29.6        | 21.4              | 35.7             | 1.0          | 5.1        | 9.2                     | 0.0        | 20.4        |
|               | 30~34     | 54                        | 7.8        | 4.9             | 23.5        | 14.7              | 36.3             | 5.9          | 6.9        | 8.8                     | 2.0        | 18.6        |
|               | 35~39     | 51                        | 8.1        | 4.0             | 22.2        | 15.2              | 35.4             | 10.1         | 9.1        | 8.1                     | 1.0        | 18.2        |
|               | 40~44     | 111                       | 8.3        | 4.5             | 19.7        | 6.4               | 24.2             | 15.9         | 12.1       | 12.7                    | 3.8        | 21.0        |
|               | 45~49     | 127                       | 8.6        | 5.7             | 12.4        | 12.4              | 25.4             | 38.2         | 9.1        | 7.7                     | 5.3        | 15.8        |
|               | 50~54     | 122                       | 11.2       | 8.6             | 7.1         | 8.1               | 26.9             | 36.5         | 4.6        | 9.6                     | 4.6        | 22.3        |
|               | 55~59     | 111                       | 6.3        | 10.9            | 11.5        | 5.7               | 24.0             | 42.2         | 5.2        | 6.3                     | 9.4        | 27.6        |
| <b>Total</b>  |           | <b>1146</b>               | <b>6.4</b> | <b>6.5</b>      | <b>17.7</b> | <b>13.9</b>       | <b>27.5</b>      | <b>23.9</b>  | <b>5.6</b> | <b>7.5</b>              | <b>4.5</b> | <b>21.1</b> |

Table 4-3-1-3-31 Had heard of or had participated in the “Physical Fitness Test” (%)

| Gender | Age group(year)     | 20~24 | 25~29 | 30~34 | 35~39 | 40~44 | 45~49 | 50~54 | 55~59 |
|--------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| M      | Subjects (n)        | 188   | 191   | 194   | 192   | 201   | 231   | 209   | 184   |
|        | Had heard of        | 50.0  | 51.8  | 56.2  | 56.3  | 52.7  | 51.9  | 47.8  | 34.8  |
|        | Had participated in | 16.5  | 10.5  | 13.4  | 14.6  | 15.9  | 20.3  | 18.2  | 12.5  |
| F      | Subjects (n)        | 199   | 220   | 220   | 214   | 336   | 354   | 283   | 192   |
|        | Had heard of        | 59.3  | 51.4  | 59.5  | 57.9  | 54.8  | 54.8  | 51.6  | 44.3  |
|        | Had participated in | 24.1  | 11.4  | 11.8  | 12.6  | 18.5  | 22.6  | 20.1  | 26.6  |

Table 4-3-1-3-32 Definition or meaning of the “Physical Fitness Test” to the subjects (%)

| Gender       | Age group (year) | Subjects (n) | To understand the physical fitness status | To recognize the importance of physical exercising | Increase the scientific knowledge of doing exercises | Meaningless |
|--------------|------------------|--------------|-------------------------------------------|----------------------------------------------------|------------------------------------------------------|-------------|
| M            | 20~24            | 188          | 92.6                                      | 45.7                                               | 37.8                                                 | 8.5         |
|              | 25~29            | 191          | 94.2                                      | 52.9                                               | 44.0                                                 | 5.8         |
|              | 30~34            | 194          | 96.4                                      | 55.7                                               | 44.3                                                 | 2.6         |
|              | 35~39            | 192          | 92.7                                      | 52.1                                               | 37.5                                                 | 4.7         |
|              | 40~44            | 201          | 93.5                                      | 45.8                                               | 35.3                                                 | 2.5         |
|              | 45~49            | 231          | 89.2                                      | 43.7                                               | 38.1                                                 | 5.2         |
|              | 50~54            | 209          | 94.7                                      | 45.0                                               | 34.4                                                 | 2.4         |
|              | 55~59            | 184          | 96.2                                      | 41.3                                               | 31.5                                                 | 1.6         |
| F            | 20~24            | 199          | 98.0                                      | 53.8                                               | 35.2                                                 | 1.5         |
|              | 25~29            | 218          | 98.6                                      | 54.5                                               | 30.9                                                 | 1.4         |
|              | 30~34            | 220          | 96.8                                      | 52.7                                               | 38.2                                                 | 0.5         |
|              | 35~39            | 214          | 97.2                                      | 55.1                                               | 40.7                                                 | 1.4         |
|              | 40~44            | 336          | 96.1                                      | 53.3                                               | 39.9                                                 | 1.5         |
|              | 45~49            | 354          | 98.3                                      | 44.9                                               | 37.0                                                 | 0.6         |
|              | 50~54            | 283          | 93.6                                      | 49.5                                               | 36.4                                                 | 3.9         |
|              | 55~59            | 192          | 95.3                                      | 51.6                                               | 27.6                                                 | 5.7         |
| <b>Total</b> |                  | <b>3606</b>  | <b>95.3</b>                               | <b>49.8</b>                                        | <b>36.9</b>                                          | <b>2.9</b>  |

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### 4.3.3 Anthropometric Measurements

Table 4-3-2-3-33 Height (cm)

| Gender | Age group (year) | n   | Mean  | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 170.7 | 5.37 | 160.6          | 164.0           | 167.6           | 170.4           | 174.1           | 177.4           | 182.3           |
|        | 25~29            | 191 | 169.5 | 5.15 | 160.6          | 162.8           | 166.0           | 169.0           | 173.2           | 176.0           | 179.0           |
|        | 30~34            | 194 | 168.6 | 5.14 | 159.3          | 162.0           | 165.2           | 168.3           | 172.4           | 175.1           | 179.0           |
|        | 35~39            | 192 | 168.6 | 5.91 | 156.0          | 161.9           | 164.7           | 168.2           | 172.0           | 177.2           | 179.0           |
|        | 40~44            | 201 | 167.2 | 5.80 | 157.4          | 159.4           | 163.3           | 166.9           | 171.0           | 175.4           | 178.6           |
|        | 45~49            | 231 | 166.5 | 5.81 | 156.5          | 159.2           | 162.4           | 166.2           | 170.0           | 173.7           | 178.0           |
|        | 50~54            | 208 | 166.3 | 5.91 | 155.4          | 159.4           | 162.3           | 166.1           | 170.1           | 173.4           | 178.7           |
|        | 55~59            | 184 | 165.8 | 5.30 | 156.1          | 158.8           | 162.2           | 165.8           | 169.3           | 172.5           | 176.9           |
| F      | 20~24            | 199 | 158.6 | 5.53 | 147.6          | 151.3           | 155.1           | 158.5           | 162.2           | 166.3           | 169.9           |
|        | 25~29            | 220 | 157.6 | 5.27 | 148.9          | 151.5           | 153.7           | 157.1           | 161.2           | 164.5           | 168.5           |
|        | 30~34            | 220 | 157.0 | 5.60 | 147.0          | 149.5           | 152.4           | 156.8           | 161.5           | 164.4           | 167.4           |
|        | 35~39            | 214 | 156.9 | 5.25 | 148.4          | 150.2           | 153.1           | 156.6           | 160.5           | 164.5           | 167.5           |
|        | 40~44            | 336 | 156.0 | 5.52 | 145.0          | 148.9           | 152.3           | 155.8           | 160.0           | 163.0           | 166.4           |
|        | 45~49            | 354 | 155.2 | 5.28 | 144.6          | 148.3           | 151.7           | 155.3           | 158.5           | 162.4           | 165.2           |
|        | 50~54            | 283 | 154.7 | 5.26 | 144.2          | 147.7           | 151.3           | 154.6           | 158.0           | 161.1           | 164.6           |
|        | 55~59            | 192 | 154.4 | 5.39 | 143.7          | 147.3           | 151.2           | 154.3           | 157.7           | 161.6           | 165.3           |

Table 4-3-2-3-34 Sitting height (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 91.5 | 2.89 | 86.2           | 87.6            | 89.2            | 91.8            | 93.6            | 95.4            | 96.4            |
|        | 25~29            | 191 | 91.1 | 2.77 | 86.5           | 88.0            | 89.0            | 90.8            | 93.2            | 95.2            | 96.1            |
|        | 30~34            | 194 | 91.2 | 2.85 | 84.7           | 87.6            | 89.5            | 91.2            | 92.8            | 94.7            | 96.8            |
|        | 35~39            | 192 | 91.1 | 3.14 | 85.3           | 87.0            | 89.1            | 90.9            | 93.2            | 95.5            | 96.9            |
|        | 40~44            | 201 | 90.6 | 3.27 | 84.5           | 86.7            | 88.4            | 90.8            | 92.8            | 94.2            | 97.2            |
|        | 45~49            | 231 | 90.2 | 2.86 | 85.0           | 86.4            | 88.3            | 90.2            | 92.3            | 94.1            | 95.5            |
|        | 50~54            | 208 | 90.1 | 3.09 | 84.1           | 86.5            | 88.2            | 89.8            | 92.1            | 94.3            | 96.9            |
|        | 55~59            | 184 | 89.8 | 3.03 | 84.3           | 86.4            | 87.8            | 89.8            | 91.8            | 93.5            | 95.4            |
| F      | 20~24            | 199 | 86.1 | 2.86 | 80.4           | 82.7            | 84.0            | 86.1            | 88.2            | 89.7            | 91.0            |
|        | 25~29            | 220 | 85.9 | 2.72 | 81.3           | 82.8            | 84.1            | 85.8            | 87.8            | 89.2            | 91.7            |
|        | 30~34            | 220 | 85.5 | 2.86 | 80.6           | 81.6            | 83.5            | 85.3            | 87.4            | 89.1            | 90.9            |
|        | 35~39            | 214 | 85.5 | 2.71 | 80.6           | 82.1            | 83.6            | 85.5            | 87.1            | 88.8            | 90.9            |
|        | 40~44            | 336 | 85.3 | 3.15 | 79.7           | 81.7            | 83.4            | 85.5            | 87.4            | 89.2            | 90.8            |
|        | 45~49            | 354 | 84.8 | 2.72 | 79.5           | 81.6            | 83.0            | 85.0            | 86.6            | 88.1            | 90.2            |
|        | 50~54            | 283 | 84.1 | 3.27 | 78.7           | 80.3            | 82.2            | 84.2            | 86.4            | 88.0            | 89.3            |
|        | 55~59            | 192 | 84.0 | 2.86 | 78.3           | 80.6            | 81.9            | 84.1            | 86.0            | 87.5            | 89.4            |

Table 4-3-2-3-35 Foot Length (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 24.9 | 0.97 | 23.0           | 23.8            | 24.2            | 24.8            | 25.6            | 26.2            | 26.7            |
|        | 25~29            | 191 | 24.7 | 1.06 | 22.6           | 23.2            | 24.0            | 24.7            | 25.3            | 26.0            | 26.7            |
|        | 30~34            | 194 | 24.7 | 0.96 | 23.0           | 23.3            | 24.2            | 24.8            | 25.3            | 26.0            | 26.5            |
|        | 35~39            | 192 | 24.7 | 1.10 | 22.7           | 23.3            | 24.0            | 24.8            | 25.6            | 26.1            | 26.7            |
|        | 40~44            | 201 | 24.5 | 1.00 | 22.8           | 23.2            | 23.8            | 24.4            | 25.2            | 25.9            | 26.6            |
|        | 45~49            | 231 | 24.4 | 1.09 | 22.4           | 23.1            | 23.7            | 24.2            | 25.1            | 25.9            | 26.6            |
|        | 50~54            | 209 | 24.3 | 1.07 | 22.2           | 23.0            | 23.7            | 24.3            | 25.0            | 25.8            | 26.5            |
|        | 55~59            | 184 | 24.6 | 1.05 | 22.8           | 23.3            | 24.0            | 24.6            | 25.2            | 26.1            | 26.8            |
| F      | 20~24            | 199 | 22.8 | 0.98 | 20.8           | 21.5            | 22.1            | 22.7            | 23.5            | 24.0            | 24.6            |
|        | 25~29            | 220 | 22.6 | 0.91 | 20.9           | 21.5            | 22.0            | 22.7            | 23.2            | 23.8            | 24.2            |
|        | 30~34            | 220 | 22.5 | 1.03 | 20.5           | 21.2            | 21.8            | 22.5            | 23.2            | 24.0            | 24.4            |
|        | 35~39            | 214 | 22.6 | 0.93 | 20.9           | 21.4            | 22.0            | 22.5            | 23.3            | 23.9            | 24.4            |
|        | 40~44            | 336 | 22.6 | 0.97 | 20.8           | 21.4            | 22.0            | 22.6            | 23.3            | 23.9            | 24.6            |
|        | 45~49            | 354 | 22.5 | 0.98 | 20.7           | 21.3            | 21.9            | 22.5            | 23.2            | 23.9            | 24.4            |
|        | 50~54            | 283 | 22.6 | 1.08 | 20.7           | 21.3            | 21.9            | 22.5            | 23.2            | 23.9            | 24.3            |
|        | 55~59            | 192 | 22.6 | 0.97 | 20.8           | 21.3            | 22.0            | 22.6            | 23.4            | 24.0            | 24.5            |

Table 4-3-2-3-36 Weight (kg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 62.8 | 10.08 | 47.9           | 51.5            | 55.3            | 60.6            | 69.0            | 78.3            | 85.6            |
|        | 25~29            | 191 | 63.9 | 9.37  | 51.9           | 54.0            | 58.0            | 62.8            | 67.7            | 74.9            | 89.1            |
|        | 30~34            | 194 | 66.8 | 10.09 | 51.4           | 54.5            | 59.9            | 65.8            | 72.5            | 80.6            | 85.8            |
|        | 35~39            | 192 | 67.2 | 9.95  | 49.9           | 54.4            | 60.2            | 66.8            | 72.8            | 81.8            | 88.0            |
|        | 40~44            | 201 | 65.9 | 8.57  | 49.6           | 53.1            | 60.4            | 66.3            | 71.6            | 75.8            | 82.2            |
|        | 45~49            | 231 | 65.5 | 9.70  | 49.4           | 54.4            | 59.6            | 64.5            | 71.7            | 77.2            | 85.6            |
|        | 50~54            | 208 | 65.8 | 9.85  | 49.5           | 53.6            | 60.4            | 64.9            | 70.3            | 79.0            | 85.2            |
|        | 55~59            | 184 | 65.1 | 8.67  | 48.9           | 53.0            | 59.0            | 65.3            | 71.7            | 76.2            | 79.4            |
| F      | 20~24            | 199 | 50.3 | 7.26  | 40.2           | 42.0            | 45.2            | 49.3            | 54.0            | 58.0            | 68.0            |
|        | 25~29            | 220 | 50.8 | 7.21  | 40.8           | 43.3            | 46.2            | 49.5            | 53.7            | 60.3            | 71.7            |
|        | 30~34            | 220 | 52.1 | 8.29  | 39.9           | 43.4            | 46.8            | 51.0            | 55.7            | 61.6            | 73.9            |
|        | 35~39            | 214 | 54.2 | 8.37  | 42.2           | 45.4            | 48.7            | 52.9            | 58.6            | 64.7            | 71.0            |
|        | 40~44            | 336 | 55.4 | 8.67  | 43.2           | 45.3            | 49.5            | 54.5            | 59.5            | 65.9            | 79.6            |
|        | 45~49            | 354 | 54.9 | 8.44  | 41.6           | 45.0            | 48.9            | 54.0            | 59.2            | 65.8            | 75.2            |
|        | 50~54            | 283 | 55.8 | 7.43  | 43.7           | 47.1            | 50.7            | 55.1            | 60.0            | 66.5            | 71.7            |
|        | 55~59            | 192 | 56.8 | 9.49  | 42.4           | 44.9            | 49.7            | 56.1            | 62.4            | 68.2            | 76.4            |

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Table 4-3-2-3-37 BMI

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 21.5 | 3.16 | 17.3           | 18.0            | 19.1            | 21.0            | 22.8            | 26.4            | 29.2            |
|        | 25~29            | 191 | 22.3 | 3.07 | 18.1           | 18.9            | 20.3            | 21.9            | 23.4            | 26.7            | 30.2            |
|        | 30~34            | 194 | 23.5 | 3.41 | 18.0           | 19.4            | 20.8            | 23.3            | 25.8            | 28.4            | 29.8            |
|        | 35~39            | 192 | 23.6 | 3.14 | 18.2           | 19.7            | 21.7            | 23.4            | 25.6            | 28.0            | 31.1            |
|        | 40~44            | 201 | 23.6 | 2.64 | 17.7           | 19.8            | 22.0            | 23.8            | 25.3            | 26.7            | 28.3            |
|        | 45~49            | 231 | 23.6 | 3.07 | 17.8           | 19.9            | 21.7            | 23.6            | 25.4            | 27.4            | 29.7            |
|        | 50~54            | 208 | 23.8 | 3.07 | 18.4           | 19.8            | 22.0            | 23.7            | 25.4            | 27.8            | 29.7            |
|        | 55~59            | 184 | 23.6 | 2.69 | 18.5           | 20.0            | 22.1            | 23.6            | 25.7            | 27.0            | 28.9            |
| F      | 20~24            | 199 | 20.0 | 2.55 | 16.3           | 17.2            | 18.3            | 19.6            | 20.6            | 23.0            | 26.5            |
|        | 25~29            | 220 | 20.4 | 2.67 | 16.8           | 17.6            | 18.6            | 20.0            | 21.5            | 23.2            | 28.3            |
|        | 30~34            | 220 | 21.1 | 3.00 | 16.8           | 17.8            | 19.0            | 20.7            | 22.4            | 25.3            | 29.3            |
|        | 35~39            | 214 | 22.0 | 3.17 | 18.1           | 18.7            | 19.9            | 21.6            | 23.7            | 25.3            | 27.3            |
|        | 40~44            | 336 | 22.7 | 3.20 | 17.9           | 19.3            | 20.6            | 22.2            | 24.5            | 26.4            | 30.5            |
|        | 45~49            | 354 | 22.8 | 3.15 | 17.5           | 19.2            | 20.7            | 22.3            | 24.3            | 26.7            | 30.6            |
|        | 50~54            | 283 | 23.3 | 2.91 | 18.6           | 19.7            | 21.3            | 23.1            | 25.1            | 27.5            | 29.5            |
|        | 55~59            | 192 | 23.8 | 3.59 | 18.5           | 19.5            | 21.2            | 23.4            | 25.6            | 28.0            | 31.2            |

Table 4-3-2-3-38 Weight status (%)

| Gender | Age group (year) | Subjects (n) | Underweight | Normal      | Overweight  | Obese       |
|--------|------------------|--------------|-------------|-------------|-------------|-------------|
| M      | 20~24            | 188          | 14.9        | 67.6        | 10.1        | 7.4         |
|        | 25~29            | 191          | 5.2         | 73.8        | 16.2        | 4.7         |
|        | 30~34            | 194          | 4.6         | 53.6        | 29.4        | 12.4        |
|        | 35~39            | 192          | 3.6         | 55.7        | 30.7        | 9.9         |
|        | 40~44            | 201          | 4.0         | 53.2        | 38.3        | 4.5         |
|        | 45~46            | 231          | 4.3         | 50.6        | 38.1        | 6.9         |
|        | 50~54            | 208          | 3.8         | 48.8        | 38.8        | 8.1         |
|        | 55~59            | 184          | 2.7         | 53.3        | 40.2        | 3.8         |
|        | <b>Total</b>     |              | <b>1589</b> | <b>5.3</b>  | <b>56.8</b> | <b>30.6</b> |
| F      | 20~24            | 199          | 28.6        | 63.3        | 6.0         | 2.0         |
|        | 25~29            | 220          | 22.7        | 69.5        | 5.0         | 2.7         |
|        | 30~34            | 220          | 16.8        | 69.5        | 10.0        | 3.6         |
|        | 35~39            | 214          | 6.5         | 72.0        | 19.2        | 2.3         |
|        | 40~44            | 336          | 5.1         | 65.2        | 23.8        | 6.0         |
|        | 45~46            | 354          | 6.5         | 63.6        | 24.0        | 5.9         |
|        | 50~54            | 283          | 2.1         | 59.0        | 31.1        | 7.8         |
|        | 55~59            | 192          | 2.6         | 52.1        | 35.4        | 9.9         |
|        | <b>Total</b>     |              | <b>2018</b> | <b>10.4</b> | <b>64.3</b> | <b>20.2</b> |

Table 4-3-2-3-39 Chest circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 87.7 | 6.43 | 79.0           | 80.3            | 82.9            | 86.0            | 90.6            | 98.4            | 101.6           |
|        | 25~29            | 191 | 89.4 | 6.41 | 79.9           | 82.3            | 85.3            | 89.1            | 91.8            | 96.2            | 107.4           |
|        | 30~34            | 194 | 92.2 | 6.90 | 81.0           | 82.9            | 87.2            | 91.5            | 96.5            | 101.5           | 107.3           |
|        | 35~39            | 192 | 92.7 | 6.40 | 81.0           | 85.2            | 88.3            | 91.9            | 96.6            | 101.8           | 106.9           |
|        | 40~44            | 201 | 92.0 | 6.04 | 79.7           | 84.7            | 88.4            | 92.0            | 96.0            | 99.4            | 102.6           |
|        | 45~49            | 231 | 92.1 | 6.56 | 80.5           | 83.8            | 87.8            | 91.6            | 96.3            | 99.6            | 107.4           |
|        | 50~54            | 209 | 92.2 | 6.45 | 81.3           | 84.2            | 88.0            | 91.8            | 95.9            | 100.2           | 105.1           |
|        | 55~59            | 184 | 92.0 | 5.51 | 81.3           | 84.3            | 88.0            | 92.4            | 95.6            | 98.8            | 102.5           |
| F      | 20~24            | 199 | 81.0 | 5.78 | 73.0           | 74.8            | 77.2            | 80.2            | 83.5            | 87.5            | 95.7            |
|        | 25~29            | 220 | 81.3 | 5.65 | 73.7           | 75.2            | 78.0            | 80.5            | 83.7            | 87.0            | 97.5            |
|        | 30~34            | 220 | 83.1 | 6.66 | 72.8           | 75.6            | 79.1            | 82.3            | 86.0            | 91.0            | 99.8            |
|        | 35~39            | 214 | 84.9 | 6.61 | 74.5           | 77.0            | 80.5            | 84.5            | 88.7            | 93.0            | 100.3           |
|        | 40~44            | 336 | 86.5 | 6.66 | 75.5           | 78.5            | 82.0            | 86.0            | 90.1            | 94.5            | 99.8            |
|        | 45~49            | 354 | 86.5 | 7.42 | 74.9           | 78.0            | 81.3            | 86.0            | 90.2            | 96.0            | 104.0           |
|        | 50~54            | 283 | 88.4 | 7.15 | 77.0           | 79.5            | 83.2            | 88.0            | 93.0            | 97.6            | 103.5           |
|        | 55~59            | 192 | 89.3 | 7.09 | 77.4           | 79.5            | 84.7            | 88.8            | 94.0            | 98.2            | 102.0           |

Table 4-3-2-3-40 Waist circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 76.9 | 9.01 | 64.2           | 67.3            | 70.0            | 74.8            | 81.3            | 91.5            | 98.0            |
|        | 25~29            | 191 | 79.6 | 8.77 | 65.4           | 69.6            | 74.3            | 78.7            | 83.5            | 91.7            | 101.0           |
|        | 30~34            | 194 | 83.6 | 9.18 | 68.7           | 71.7            | 75.7            | 84.0            | 89.7            | 95.9            | 100.6           |
|        | 35~39            | 192 | 84.5 | 8.75 | 70.8           | 73.2            | 77.2            | 84.9            | 90.1            | 95.1            | 104.5           |
|        | 40~44            | 201 | 84.3 | 7.20 | 69.4           | 75.1            | 80.0            | 84.6            | 89.1            | 93.4            | 97.9            |
|        | 45~49            | 231 | 85.2 | 9.06 | 68.4           | 73.2            | 79.7            | 84.8            | 91.1            | 94.7            | 107.8           |
|        | 50~54            | 209 | 85.9 | 9.13 | 67.6           | 73.7            | 80.2            | 85.0            | 91.9            | 97.6            | 101.1           |
|        | 55~59            | 184 | 86.6 | 8.44 | 69.8           | 75.5            | 81.7            | 86.0            | 91.8            | 97.7            | 103.2           |
| F      | 20~24            | 199 | 68.1 | 6.44 | 57.7           | 61.2            | 63.5            | 67.4            | 71.0            | 76.0            | 82.5            |
|        | 25~29            | 220 | 69.2 | 6.66 | 59.8           | 62.5            | 64.6            | 67.9            | 72.3            | 78.5            | 87.2            |
|        | 30~34            | 220 | 71.8 | 8.34 | 59.6           | 63.4            | 66.3            | 70.4            | 75.4            | 83.1            | 92.1            |
|        | 35~39            | 214 | 74.4 | 7.93 | 63.1           | 65.3            | 68.3            | 73.7            | 79.0            | 84.0            | 92.1            |
|        | 40~44            | 336 | 76.2 | 8.45 | 63.2           | 66.2            | 70.0            | 75.7            | 81.4            | 86.6            | 94.9            |
|        | 45~49            | 354 | 76.8 | 9.03 | 61.5           | 66.1            | 70.9            | 76.0            | 82.2            | 88.4            | 97.7            |
|        | 50~54            | 283 | 79.4 | 8.32 | 64.4           | 69.0            | 73.6            | 78.5            | 85.0            | 91.5            | 97.1            |
|        | 55~59            | 192 | 81.7 | 9.80 | 66.5           | 69.4            | 74.5            | 81.0            | 88.5            | 94.4            | 102.7           |

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Table 4-3-2-3-41 Hip circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 90.7 | 5.89 | 81.7           | 83.8            | 86.4            | 90.1            | 94.0            | 99.2            | 103.8           |
|        | 25~29            | 191 | 91.2 | 5.59 | 82.9           | 85.3            | 88.1            | 90.5            | 93.8            | 98.2            | 105.9           |
|        | 30~34            | 194 | 92.9 | 6.09 | 83.2           | 85.9            | 88.4            | 92.4            | 96.9            | 100.8           | 105.4           |
|        | 35~39            | 192 | 92.7 | 5.60 | 80.5           | 85.9            | 88.9            | 92.5            | 96.5            | 100.6           | 103.3           |
|        | 40~44            | 201 | 92.6 | 5.16 | 81.6           | 85.2            | 89.2            | 92.8            | 96.0            | 99.0            | 101.9           |
|        | 45~49            | 231 | 91.9 | 5.36 | 82.1           | 85.3            | 88.4            | 91.6            | 95.0            | 98.2            | 102.4           |
|        | 50~54            | 209 | 92.4 | 5.59 | 82.2           | 85.5            | 89.5            | 92.4            | 95.4            | 98.4            | 102.2           |
|        | 55~59            | 184 | 92.0 | 4.99 | 81.9           | 84.3            | 88.9            | 92.4            | 95.2            | 98.6            | 100.3           |
| F      | 20~24            | 199 | 88.3 | 5.29 | 80.0           | 82.5            | 84.7            | 88.0            | 90.8            | 93.7            | 102.5           |
|        | 25~29            | 220 | 88.3 | 5.07 | 80.5           | 82.7            | 85.0            | 87.6            | 90.5            | 94.8            | 100.4           |
|        | 30~34            | 220 | 89.1 | 5.78 | 79.5           | 82.1            | 84.7            | 88.9            | 92.3            | 96.0            | 102.1           |
|        | 35~39            | 214 | 90.4 | 6.27 | 82.0           | 84.0            | 86.5            | 89.6            | 93.5            | 96.5            | 102.1           |
|        | 40~44            | 336 | 90.8 | 6.21 | 80.5           | 83.5            | 87.0            | 90.0            | 94.3            | 98.5            | 105.2           |
|        | 45~49            | 354 | 90.9 | 5.88 | 82.0           | 83.6            | 87.0            | 90.0            | 94.2            | 98.6            | 104.4           |
|        | 50~54            | 283 | 91.8 | 5.40 | 82.6           | 85.5            | 88.1            | 91.4            | 95.0            | 99.0            | 103.6           |
|        | 55~59            | 192 | 92.5 | 7.09 | 81.8           | 84.7            | 87.2            | 91.5            | 97.1            | 102.3           | 106.0           |

Table 4-3-2-3-42 Waist-Hip Ratio (WHR)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 0.846 | 0.054 | 0.764          | 0.782           | 0.805           | 0.836           | 0.882           | 0.918           | 0.967           |
|        | 25~29            | 191 | 0.871 | 0.057 | 0.775          | 0.809           | 0.835           | 0.868           | 0.908           | 0.940           | 1.004           |
|        | 30~34            | 194 | 0.899 | 0.053 | 0.802          | 0.830           | 0.860           | 0.904           | 0.931           | 0.957           | 1.003           |
|        | 35~39            | 192 | 0.910 | 0.055 | 0.809          | 0.845           | 0.868           | 0.909           | 0.949           | 0.988           | 1.018           |
|        | 40~44            | 201 | 0.909 | 0.048 | 0.817          | 0.844           | 0.881           | 0.910           | 0.943           | 0.968           | 0.987           |
|        | 45~49            | 231 | 0.925 | 0.063 | 0.809          | 0.845           | 0.880           | 0.925           | 0.968           | 0.997           | 1.034           |
|        | 50~54            | 209 | 0.928 | 0.060 | 0.806          | 0.851           | 0.893           | 0.930           | 0.972           | 1.001           | 1.031           |
|        | 55~59            | 184 | 0.940 | 0.061 | 0.832          | 0.860           | 0.906           | 0.936           | 0.974           | 1.030           | 1.067           |
| F      | 20~24            | 199 | 0.771 | 0.045 | 0.700          | 0.714           | 0.737           | 0.767           | 0.800           | 0.830           | 0.864           |
|        | 25~29            | 220 | 0.783 | 0.053 | 0.697          | 0.724           | 0.749           | 0.776           | 0.809           | 0.852           | 0.894           |
|        | 30~34            | 220 | 0.804 | 0.058 | 0.719          | 0.738           | 0.761           | 0.795           | 0.842           | 0.887           | 0.931           |
|        | 35~39            | 214 | 0.822 | 0.054 | 0.721          | 0.753           | 0.783           | 0.816           | 0.856           | 0.898           | 0.918           |
|        | 40~44            | 336 | 0.838 | 0.061 | 0.735          | 0.764           | 0.797           | 0.835           | 0.876           | 0.908           | 0.967           |
|        | 45~49            | 354 | 0.844 | 0.065 | 0.733          | 0.758           | 0.800           | 0.839           | 0.886           | 0.932           | 0.969           |
|        | 50~54            | 283 | 0.863 | 0.066 | 0.753          | 0.781           | 0.817           | 0.859           | 0.917           | 0.951           | 0.986           |
|        | 55~59            | 192 | 0.882 | 0.068 | 0.760          | 0.796           | 0.834           | 0.873           | 0.928           | 0.984           | 1.020           |

Table 4-3-2-3-43 Shoulder width (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 38.8 | 1.68 | 35.5           | 36.3            | 37.7            | 39.0            | 40.0            | 40.6            | 41.9            |
|        | 25~29            | 191 | 39.1 | 1.59 | 36.3           | 37.0            | 38.0            | 39.0            | 40.0            | 41.2            | 42.0            |
|        | 30~34            | 194 | 38.9 | 1.45 | 36.0           | 37.0            | 38.0            | 39.0            | 40.0            | 40.5            | 41.7            |
|        | 35~39            | 192 | 38.9 | 1.54 | 35.9           | 37.0            | 37.8            | 38.9            | 40.0            | 40.9            | 41.5            |
|        | 40~44            | 201 | 38.4 | 1.81 | 35.5           | 36.3            | 37.2            | 38.5            | 40.0            | 40.4            | 41.6            |
|        | 45~49            | 231 | 38.2 | 1.86 | 34.6           | 36.0            | 37.0            | 38.2            | 39.2            | 40.0            | 41.6            |
|        | 50~54            | 209 | 38.0 | 1.89 | 34.2           | 35.6            | 37.0            | 38.1            | 39.3            | 40.2            | 41.0            |
|        | 55~59            | 184 | 37.8 | 1.72 | 34.5           | 35.3            | 36.8            | 38.0            | 39.0            | 40.1            | 41.0            |
| F      | 20~24            | 199 | 34.7 | 1.78 | 31.1           | 32.2            | 33.4            | 35.0            | 35.8            | 37.1            | 37.9            |
|        | 25~29            | 220 | 34.7 | 1.49 | 31.5           | 32.7            | 33.8            | 34.8            | 35.7            | 36.5            | 37.3            |
|        | 30~34            | 220 | 34.9 | 1.71 | 31.9           | 32.7            | 33.5            | 34.9            | 35.9            | 37.0            | 38.2            |
|        | 35~39            | 214 | 34.7 | 1.65 | 31.8           | 32.5            | 33.5            | 34.7            | 35.6            | 37.0            | 38.3            |
|        | 40~44            | 336 | 34.5 | 1.86 | 30.9           | 32.3            | 33.4            | 34.6            | 35.7            | 37.0            | 38.1            |
|        | 45~49            | 354 | 34.4 | 1.77 | 30.9           | 32.2            | 33.3            | 34.3            | 35.5            | 36.6            | 38.0            |
|        | 50~54            | 283 | 34.3 | 1.69 | 31.0           | 32.1            | 33.1            | 34.2            | 35.4            | 36.4            | 37.5            |
|        | 55~59            | 192 | 34.2 | 1.82 | 31.0           | 31.9            | 32.9            | 34.1            | 35.5            | 36.4            | 37.7            |

Table 4-3-2-3-44 Pelvis width (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 27.0 | 1.46 | 24.4           | 25.2            | 25.9            | 27.0            | 28.0            | 28.9            | 30.0            |
|        | 25~29            | 191 | 27.2 | 1.56 | 24.8           | 25.3            | 26.4            | 27.0            | 28.0            | 29.2            | 31.1            |
|        | 30~34            | 194 | 27.5 | 1.57 | 24.4           | 25.8            | 26.8            | 27.3            | 28.7            | 29.3            | 30.2            |
|        | 35~39            | 192 | 27.9 | 1.69 | 25.2           | 26.0            | 26.8            | 27.6            | 29.0            | 30.3            | 31.4            |
|        | 40~44            | 201 | 27.8 | 1.40 | 25.3           | 26.1            | 27.0            | 27.8            | 28.7            | 29.5            | 30.5            |
|        | 45~49            | 231 | 27.8 | 1.77 | 25.0           | 25.7            | 26.8            | 27.7            | 28.6            | 29.6            | 31.9            |
|        | 50~54            | 209 | 28.0 | 1.55 | 24.9           | 26.0            | 27.0            | 28.0            | 29.0            | 30.0            | 31.0            |
|        | 55~59            | 184 | 28.1 | 1.67 | 25.1           | 26.0            | 26.5            | 28.2            | 29.2            | 30.2            | 31.1            |
| F      | 20~24            | 199 | 26.5 | 1.51 | 24.1           | 24.8            | 25.6            | 26.4            | 27.4            | 28.5            | 29.2            |
|        | 25~29            | 220 | 26.7 | 1.38 | 24.5           | 25.0            | 25.9            | 26.7            | 27.6            | 28.5            | 29.3            |
|        | 30~34            | 220 | 26.8 | 1.58 | 24.0           | 25.0            | 25.7            | 26.7            | 28.0            | 28.9            | 30.0            |
|        | 35~39            | 214 | 27.2 | 1.67 | 24.1           | 25.0            | 26.3            | 27.1            | 28.1            | 29.3            | 30.4            |
|        | 40~44            | 336 | 27.4 | 1.87 | 24.5           | 25.4            | 26.2            | 27.2            | 28.4            | 29.6            | 31.1            |
|        | 45~49            | 354 | 27.5 | 1.63 | 24.4           | 25.4            | 26.4            | 27.4            | 28.5            | 29.4            | 30.7            |
|        | 50~54            | 283 | 27.8 | 1.43 | 25.0           | 26.1            | 26.9            | 27.8            | 28.7            | 29.6            | 30.6            |
|        | 55~59            | 192 | 28.2 | 1.80 | 24.8           | 25.8            | 26.9            | 28.1            | 29.4            | 30.2            | 32.2            |

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Table 4-3-2-3-45 Upper arm skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 11.3 | 5.22 | 4.8            | 5.5             | 7.0             | 10.0            | 14.0            | 18.0            | 24.8            |
|        | 25~29            | 191 | 12.6 | 6.37 | 4.5            | 5.5             | 8.0             | 11.5            | 15.0            | 23.0            | 28.0            |
|        | 30~34            | 194 | 14.7 | 6.12 | 4.9            | 8.0             | 10.4            | 14.0            | 18.5            | 22.5            | 27.6            |
|        | 35~39            | 192 | 14.0 | 5.67 | 4.9            | 7.0             | 9.6             | 13.0            | 18.0            | 22.4            | 25.0            |
|        | 40~44            | 201 | 12.8 | 4.78 | 5.0            | 6.6             | 9.0             | 12.0            | 16.0            | 19.4            | 22.9            |
|        | 45~49            | 231 | 11.9 | 5.01 | 4.5            | 6.0             | 8.0             | 11.0            | 15.0            | 19.0            | 22.0            |
|        | 50~54            | 209 | 12.8 | 5.09 | 4.7            | 6.5             | 9.3             | 12.0            | 16.0            | 19.5            | 24.7            |
|        | 55~59            | 184 | 12.6 | 4.53 | 5.3            | 7.0             | 9.0             | 12.5            | 16.0            | 18.8            | 22.0            |
| F      | 20~24            | 199 | 18.4 | 5.54 | 9.5            | 12.0            | 14.0            | 18.0            | 21.5            | 25.5            | 28.0            |
|        | 25~29            | 219 | 18.7 | 5.18 | 9.7            | 11.7            | 15.1            | 18.5            | 22.0            | 25.0            | 29.9            |
|        | 30~34            | 220 | 19.3 | 6.12 | 9.3            | 12.0            | 15.0            | 18.7            | 24.5            | 28.0            | 31.0            |
|        | 35~39            | 214 | 20.8 | 5.93 | 11.2           | 14.0            | 16.7            | 20.0            | 24.5            | 29.0            | 34.5            |
|        | 40~44            | 336 | 21.8 | 6.22 | 11.4           | 14.3            | 17.0            | 21.1            | 25.6            | 30.4            | 34.9            |
|        | 45~49            | 354 | 21.6 | 6.16 | 11.0           | 14.0            | 17.0            | 21.1            | 25.1            | 29.8            | 35.0            |
|        | 50~54            | 283 | 22.3 | 6.06 | 10.3           | 16.0            | 18.0            | 21.8            | 26.0            | 30.0            | 35.9            |
|        | 55~59            | 192 | 23.5 | 6.91 | 13.0           | 15.0            | 19.0            | 22.2            | 28.2            | 32.2            | 37.7            |

Table 4-3-2-3-46 Subscapular skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 15.6 | 7.07 | 7.3            | 8.5             | 10.5            | 13.5            | 19.0            | 26.6            | 33.0            |
|        | 25~29            | 191 | 17.9 | 7.70 | 7.0            | 10.0            | 12.5            | 16.5            | 21.5            | 27.0            | 38.1            |
|        | 30~34            | 194 | 21.3 | 8.51 | 7.5            | 11.3            | 14.4            | 20.3            | 27.0            | 31.0            | 40.2            |
|        | 35~39            | 192 | 21.0 | 7.81 | 8.4            | 11.0            | 15.0            | 20.0            | 26.4            | 32.5            | 35.6            |
|        | 40~44            | 201 | 20.3 | 7.28 | 8.0            | 10.5            | 14.3            | 20.0            | 26.0            | 30.0            | 35.0            |
|        | 45~49            | 228 | 20.3 | 8.03 | 8.0            | 10.0            | 15.0            | 19.5            | 25.0            | 31.0            | 38.3            |
|        | 50~54            | 209 | 21.1 | 7.77 | 7.2            | 11.0            | 15.0            | 21.0            | 26.5            | 31.0            | 35.0            |
|        | 55~59            | 184 | 21.2 | 7.73 | 8.5            | 10.3            | 14.6            | 21.5            | 26.0            | 30.8            | 37.7            |
| F      | 20~24            | 199 | 18.9 | 6.53 | 9.5            | 11.3            | 14.0            | 18.0            | 22.5            | 27.5            | 34.0            |
|        | 25~29            | 220 | 19.0 | 6.43 | 10.1           | 12.0            | 14.2            | 17.9            | 22.5            | 28.0            | 33.2            |
|        | 30~34            | 219 | 21.4 | 7.67 | 8.6            | 11.3            | 15.5            | 21.0            | 26.0            | 31.5            | 37.7            |
|        | 35~39            | 214 | 23.0 | 7.71 | 10.4           | 13.3            | 17.5            | 22.3            | 28.0            | 33.3            | 38.4            |
|        | 40~44            | 336 | 24.6 | 7.67 | 11.4           | 15.0            | 18.6            | 24.5            | 29.5            | 34.0            | 40.5            |
|        | 45~49            | 354 | 24.4 | 8.47 | 9.8            | 14.2            | 18.5            | 23.8            | 30.0            | 35.5            | 41.7            |
|        | 50~54            | 282 | 25.8 | 8.27 | 10.7           | 15.0            | 20.0            | 25.5            | 32.1            | 37.0            | 42.2            |
|        | 55~59            | 191 | 26.9 | 8.95 | 10.8           | 15.1            | 20.5            | 26.5            | 32.5            | 39.0            | 46.3            |

Table 4-3-2-3-47 Abdominal skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 17.8 | 9.30  | 4.8            | 8.0             | 10.5            | 15.5            | 22.4            | 30.1            | 39.3            |
|        | 25~29            | 191 | 21.5 | 10.19 | 5.4            | 7.1             | 15.0            | 21.0            | 26.5            | 36.5            | 40.2            |
|        | 30~34            | 194 | 25.1 | 9.77  | 6.4            | 13.0            | 17.9            | 25.8            | 32.0            | 38.0            | 45.0            |
|        | 35~39            | 192 | 24.3 | 9.40  | 7.9            | 11.5            | 18.1            | 22.8            | 31.0            | 36.0            | 43.4            |
|        | 40~44            | 201 | 23.4 | 7.71  | 9.0            | 12.6            | 18.0            | 23.5            | 28.8            | 33.4            | 36.9            |
|        | 45~49            | 225 | 23.9 | 8.72  | 7.3            | 12.0            | 18.3            | 24.0            | 30.0            | 34.7            | 40.6            |
|        | 50~54            | 208 | 23.6 | 8.45  | 7.0            | 11.5            | 18.1            | 23.5            | 29.9            | 34.0            | 39.0            |
|        | 55~59            | 180 | 25.0 | 9.17  | 7.2            | 13.6            | 20.0            | 24.3            | 30.0            | 36.5            | 46.1            |
| F      | 20~24            | 199 | 24.3 | 8.17  | 11.2           | 14.0            | 19.0            | 23.1            | 29.0            | 34.0            | 40.0            |
|        | 25~29            | 220 | 23.6 | 7.87  | 11.7           | 14.0            | 17.7            | 22.5            | 28.5            | 34.5            | 40.7            |
|        | 30~34            | 220 | 24.2 | 9.45  | 8.4            | 11.5            | 16.5            | 23.5            | 30.9            | 38.0            | 43.1            |
|        | 35~39            | 214 | 25.8 | 9.05  | 9.5            | 14.7            | 19.5            | 25.5            | 32.0            | 37.0            | 44.7            |
|        | 40~44            | 336 | 28.0 | 8.69  | 12.8           | 16.9            | 22.0            | 28.0            | 33.5            | 40.0            | 44.4            |
|        | 45~49            | 354 | 28.0 | 8.88  | 11.5           | 16.3            | 22.0            | 28.2            | 34.1            | 38.9            | 45.1            |
|        | 50~54            | 283 | 31.2 | 8.54  | 13.9           | 20.0            | 25.5            | 32.0            | 36.5            | 41.0            | 48.0            |
|        | 55~59            | 192 | 32.3 | 8.24  | 15.9           | 21.7            | 27.6            | 32.0            | 37.4            | 42.6            | 47.0            |

Table 4-3-2-3-48 Percent body fat (%)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 17.0 | 5.59 | 10.2           | 11.6            | 12.7            | 15.3            | 20.0            | 26.1            | 31.7            |
|        | 25~29            | 191 | 18.7 | 6.41 | 9.7            | 12.0            | 13.7            | 17.4            | 21.8            | 28.5            | 35.0            |
|        | 30~34            | 194 | 21.3 | 6.62 | 10.0           | 12.9            | 16.2            | 20.7            | 25.9            | 29.6            | 36.9            |
|        | 35~39            | 192 | 20.8 | 6.14 | 10.8           | 13.2            | 16.0            | 19.9            | 25.3            | 30.1            | 32.3            |
|        | 40~44            | 201 | 19.9 | 5.26 | 10.4           | 13.0            | 15.8            | 19.8            | 23.6            | 26.8            | 30.0            |
|        | 45~49            | 228 | 19.4 | 5.79 | 10.2           | 12.7            | 15.1            | 18.8            | 23.3            | 27.1            | 31.4            |
|        | 50~54            | 209 | 20.3 | 5.73 | 10.0           | 12.3            | 16.0            | 20.5            | 23.9            | 27.1            | 31.9            |
|        | 55~59            | 184 | 20.3 | 5.46 | 11.2           | 12.7            | 15.4            | 20.9            | 23.6            | 27.3            | 30.7            |
| F      | 20~24            | 199 | 25.3 | 6.39 | 15.7           | 17.8            | 20.4            | 24.5            | 28.7            | 32.9            | 37.1            |
|        | 25~29            | 219 | 25.5 | 5.92 | 16.6           | 18.0            | 21.5            | 24.5            | 28.2            | 33.6            | 40.0            |
|        | 30~34            | 219 | 27.2 | 7.35 | 15.4           | 17.6            | 21.7            | 26.6            | 31.9            | 37.4            | 42.2            |
|        | 35~39            | 214 | 29.0 | 7.18 | 17.9           | 20.3            | 23.6            | 28.1            | 33.3            | 38.5            | 44.9            |
|        | 40~44            | 336 | 30.5 | 7.37 | 18.9           | 21.4            | 25.2            | 29.6            | 35.5            | 39.8            | 45.9            |
|        | 45~49            | 354 | 30.3 | 7.60 | 17.7           | 21.1            | 24.6            | 29.8            | 34.8            | 39.6            | 47.1            |
|        | 50~54            | 282 | 31.5 | 7.57 | 17.5           | 22.0            | 26.1            | 31.0            | 36.0            | 41.9            | 46.4            |
|        | 55~59            | 191 | 32.8 | 8.69 | 18.9           | 23.2            | 26.1            | 31.9            | 37.4            | 44.2            | 50.7            |

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Table 4-3-2-3-49 Lean body mass (kg)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 51.7 | 5.83 | 42.0           | 44.3            | 47.0            | 51.7            | 55.2            | 60.1            | 63.2            |
|        | 25~29            | 191 | 51.5 | 4.84 | 43.1           | 45.4            | 48.4            | 51.3            | 54.3            | 56.7            | 61.0            |
|        | 30~34            | 194 | 52.1 | 5.80 | 41.8           | 45.9            | 47.9            | 51.0            | 56.4            | 59.5            | 64.8            |
|        | 35~39            | 192 | 52.8 | 5.91 | 42.8           | 45.2            | 48.1            | 52.3            | 56.8            | 60.7            | 64.7            |
|        | 40~44            | 201 | 52.6 | 5.70 | 41.9           | 45.9            | 48.8            | 51.9            | 56.4            | 60.6            | 63.8            |
|        | 45~49            | 228 | 52.1 | 5.29 | 42.2           | 45.3            | 48.8            | 52.0            | 55.6            | 59.0            | 62.3            |
|        | 50~54            | 208 | 52.1 | 5.68 | 42.4           | 44.8            | 48.4            | 51.5            | 55.4            | 58.1            | 64.7            |
|        | 55~59            | 184 | 51.6 | 5.31 | 43.0           | 45.2            | 47.5            | 50.8            | 54.6            | 60.0            | 62.0            |
| F      | 20~24            | 199 | 37.2 | 3.54 | 31.5           | 32.7            | 34.6            | 36.9            | 39.9            | 41.7            | 44.6            |
|        | 25~29            | 219 | 37.5 | 3.53 | 30.4           | 33.0            | 35.4            | 37.2            | 39.2            | 42.1            | 45.6            |
|        | 30~34            | 219 | 37.5 | 4.10 | 30.6           | 32.7            | 34.7            | 37.4            | 39.9            | 42.7            | 46.4            |
|        | 35~39            | 214 | 38.0 | 3.73 | 31.4           | 33.6            | 35.4            | 37.6            | 40.3            | 43.1            | 45.2            |
|        | 40~44            | 336 | 38.1 | 4.55 | 30.9           | 33.3            | 35.1            | 37.7            | 40.2            | 43.7            | 47.9            |
|        | 45~49            | 354 | 37.8 | 3.97 | 31.1           | 32.8            | 34.9            | 37.5            | 40.2            | 43.1            | 46.4            |
|        | 50~54            | 282 | 37.9 | 4.29 | 30.2           | 32.8            | 35.0            | 37.5            | 40.7            | 43.2            | 47.7            |
|        | 55~59            | 191 | 37.6 | 4.52 | 30.1           | 32.3            | 34.5            | 36.8            | 40.7            | 43.5            | 46.2            |

#### 4.3.4 Physiological Function

Table 4-3-2-3-50 Resting pulse (times/min)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 75.3 | 9.06  | 60.0           | 64.0            | 68.5            | 74.0            | 82.0            | 88.0            | 92.7            |
|        | 25~29            | 191 | 74.6 | 8.61  | 60.0           | 64.0            | 70.0            | 74.0            | 80.0            | 86.0            | 94.5            |
|        | 30~34            | 194 | 77.4 | 9.50  | 61.0           | 66.0            | 72.0            | 78.0            | 82.0            | 88.0            | 96.9            |
|        | 35~39            | 192 | 77.6 | 9.79  | 60.0           | 64.0            | 72.0            | 78.0            | 84.0            | 89.4            | 98.4            |
|        | 40~44            | 201 | 77.2 | 10.58 | 58.0           | 64.0            | 70.0            | 78.0            | 82.0            | 88.0            | 100.0           |
|        | 45~49            | 231 | 77.3 | 11.14 | 58.0           | 62.0            | 70.0            | 76.0            | 86.0            | 90.0            | 100.1           |
|        | 50~54            | 209 | 77.3 | 10.03 | 58.0           | 64.0            | 70.0            | 78.0            | 84.0            | 90.0            | 98.0            |
|        | 55~59            | 184 | 76.7 | 8.35  | 61.0           | 66.0            | 71.3            | 78.0            | 82.0            | 88.0            | 93.4            |
| F      | 20~24            | 199 | 77.1 | 8.47  | 62.0           | 66.0            | 70.0            | 78.0            | 82.0            | 88.0            | 98.0            |
|        | 25~29            | 220 | 79.0 | 10.49 | 62.0           | 68.0            | 72.0            | 78.0            | 84.0            | 92.0            | 102.0           |
|        | 30~34            | 220 | 78.6 | 9.26  | 64.0           | 68.0            | 72.0            | 78.0            | 84.0            | 91.8            | 96.1            |
|        | 35~39            | 214 | 79.0 | 9.00  | 62.0           | 68.0            | 72.0            | 80.0            | 84.0            | 89.0            | 98.2            |
|        | 40~44            | 336 | 77.1 | 9.44  | 60.0           | 66.0            | 70.0            | 76.0            | 84.0            | 88.6            | 100.0           |
|        | 45~49            | 354 | 76.5 | 9.73  | 60.0           | 64.0            | 70.0            | 76.0            | 82.0            | 90.0            | 98.0            |
|        | 50~54            | 283 | 74.7 | 9.20  | 58.0           | 62.8            | 68.0            | 74.0            | 80.0            | 88.0            | 93.0            |
|        | 55~59            | 192 | 74.9 | 8.28  | 58.0           | 66.0            | 70.0            | 74.0            | 80.0            | 85.4            | 94.0            |

Table 4-3-2-3-51 Systolic pressure (mmHg)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 117.5 | 8.93  | 100.0          | 107.8           | 110.0           | 118.0           | 123.8           | 130.0           | 136.0           |
|        | 25~29            | 191 | 116.5 | 10.63 | 98.0           | 104.0           | 110.0           | 116.0           | 122.0           | 130.0           | 140.0           |
|        | 30~34            | 194 | 120.0 | 12.19 | 100.0          | 106.0           | 112.0           | 118.0           | 128.0           | 138.0           | 148.0           |
|        | 35~39            | 192 | 120.8 | 13.82 | 98.0           | 102.0           | 112.0           | 120.0           | 130.0           | 139.4           | 150.0           |
|        | 40~44            | 201 | 123.5 | 14.01 | 100.0          | 110.0           | 114.0           | 120.0           | 130.0           | 140.0           | 150.0           |
|        | 45~49            | 231 | 125.6 | 13.49 | 100.0          | 110.0           | 116.0           | 126.0           | 134.0           | 140.0           | 152.1           |
|        | 50~54            | 209 | 126.2 | 15.00 | 100.0          | 110.0           | 118.0           | 124.0           | 135.5           | 148.0           | 154.4           |
|        | 55~59            | 184 | 131.3 | 15.86 | 100.0          | 111.0           | 120.0           | 130.0           | 140.0           | 150.0           | 166.0           |
| F      | 20~24            | 199 | 104.6 | 10.33 | 85.0           | 90.0            | 98.0            | 104.0           | 110.0           | 120.0           | 124.0           |
|        | 25~29            | 220 | 104.4 | 11.32 | 80.0           | 90.0            | 98.0            | 104.0           | 110.0           | 120.0           | 128.7           |
|        | 30~34            | 220 | 105.3 | 11.89 | 87.0           | 90.0            | 98.0            | 104.0           | 112.0           | 120.0           | 130.0           |
|        | 35~39            | 214 | 108.8 | 11.99 | 90.0           | 94.0            | 100.0           | 109.0           | 120.0           | 126.0           | 132.0           |
|        | 40~44            | 336 | 115.3 | 15.62 | 90.0           | 96.0            | 104.0           | 114.0           | 123.5           | 136.0           | 155.8           |
|        | 45~49            | 354 | 119.0 | 16.69 | 91.0           | 100.0           | 108.0           | 120.0           | 128.5           | 140.0           | 158.7           |
|        | 50~54            | 283 | 123.0 | 17.91 | 90.0           | 100.8           | 110.0           | 120.0           | 130.0           | 142.0           | 160.0           |
|        | 55~59            | 192 | 127.7 | 18.17 | 94.0           | 102.0           | 116.0           | 126.0           | 140.0           | 152.0           | 162.4           |

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Table 4-3-2-3-52 Diastolic pressure (mmHg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 76.0 | 7.69  | 60.0           | 66.0            | 70.0            | 76.0            | 82.0            | 86.0            | 90.0            |
|        | 25~29            | 191 | 75.1 | 7.86  | 60.0           | 65.2            | 70.0            | 76.0            | 80.0            | 84.0            | 90.0            |
|        | 30~34            | 194 | 78.7 | 10.13 | 60.0           | 68.0            | 70.0            | 78.0            | 84.0            | 90.0            | 100.3           |
|        | 35~39            | 192 | 79.8 | 10.77 | 60.0           | 66.0            | 72.0            | 80.0            | 86.0            | 90.0            | 105.3           |
|        | 40~44            | 201 | 82.2 | 10.07 | 62.0           | 70.0            | 76.0            | 80.0            | 90.0            | 95.6            | 100.0           |
|        | 45~49            | 231 | 82.9 | 9.78  | 64.0           | 70.0            | 78.0            | 80.0            | 90.0            | 96.0            | 100.1           |
|        | 50~54            | 209 | 82.9 | 9.89  | 66.0           | 70.0            | 77.0            | 82.0            | 90.0            | 94.0            | 101.4           |
|        | 55~59            | 184 | 83.1 | 10.17 | 63.0           | 70.0            | 78.0            | 82.0            | 90.0            | 96.0            | 100.9           |
| F      | 20~24            | 199 | 67.3 | 8.52  | 52.0           | 58.0            | 60.0            | 68.0            | 72.0            | 80.0            | 86.0            |
|        | 25~29            | 220 | 68.2 | 8.36  | 50.0           | 60.0            | 62.0            | 68.0            | 72.0            | 80.0            | 86.0            |
|        | 30~34            | 220 | 69.5 | 9.23  | 56.0           | 60.0            | 60.0            | 70.0            | 76.0            | 80.0            | 90.0            |
|        | 35~39            | 214 | 71.9 | 8.94  | 58.0           | 60.0            | 64.8            | 70.0            | 80.0            | 82.0            | 88.0            |
|        | 40~44            | 336 | 75.4 | 10.52 | 60.0           | 60.0            | 70.0            | 74.0            | 80.0            | 90.0            | 99.8            |
|        | 45~49            | 354 | 76.7 | 10.55 | 60.0           | 64.0            | 70.0            | 76.0            | 84.0            | 90.0            | 98.0            |
|        | 50~54            | 283 | 78.7 | 10.79 | 60.0           | 66.8            | 70.0            | 78.0            | 84.0            | 93.2            | 101.9           |
|        | 55~59            | 192 | 79.1 | 10.20 | 60.0           | 68.0            | 70.0            | 80.0            | 85.8            | 90.0            | 100.4           |

Table 4-3-2-3-53 Pressure difference (mmHg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 41.5 | 8.89  | 23.3           | 30.0            | 36.0            | 42.0            | 48.0            | 52.0            | 60.0            |
|        | 25~29            | 191 | 41.4 | 9.76  | 25.0           | 30.0            | 34.0            | 42.0            | 46.0            | 53.6            | 66.0            |
|        | 30~34            | 194 | 41.4 | 9.54  | 25.7           | 30.0            | 35.0            | 40.0            | 48.0            | 54.5            | 60.3            |
|        | 35~39            | 192 | 41.4 | 10.15 | 25.6           | 30.0            | 35.0            | 40.0            | 46.0            | 53.4            | 64.0            |
|        | 40~44            | 201 | 41.2 | 10.49 | 24.1           | 30.0            | 34.0            | 40.0            | 46.0            | 54.0            | 63.8            |
|        | 45~49            | 231 | 42.7 | 10.07 | 25.9           | 30.0            | 36.0            | 42.0            | 50.0            | 55.8            | 62.0            |
|        | 50~54            | 209 | 43.4 | 11.37 | 26.6           | 30.0            | 36.0            | 40.0            | 50.0            | 60.0            | 68.8            |
|        | 55~59            | 184 | 48.6 | 12.22 | 28.0           | 35.0            | 40.0            | 48.0            | 54.0            | 64.5            | 74.0            |
| F      | 20~24            | 199 | 37.3 | 8.37  | 22.0           | 28.0            | 32.0            | 37.0            | 42.0            | 50.0            | 56.0            |
|        | 25~29            | 220 | 36.3 | 8.79  | 20.0           | 24.0            | 30.0            | 36.0            | 40.0            | 48.0            | 54.4            |
|        | 30~34            | 220 | 35.8 | 8.24  | 20.0           | 26.0            | 30.0            | 36.0            | 40.0            | 46.0            | 52.7            |
|        | 35~39            | 214 | 36.9 | 8.28  | 22.0           | 26.0            | 30.0            | 38.0            | 42.0            | 48.0            | 53.1            |
|        | 40~44            | 336 | 39.9 | 9.64  | 24.0           | 28.0            | 34.0            | 40.0            | 44.0            | 52.0            | 61.8            |
|        | 45~49            | 354 | 42.3 | 11.07 | 24.0           | 30.0            | 36.0            | 40.0            | 48.0            | 56.0            | 66.0            |
|        | 50~54            | 283 | 44.3 | 12.36 | 25.0           | 30.0            | 36.0            | 44.0            | 50.0            | 60.0            | 71.0            |
|        | 55~59            | 192 | 48.6 | 12.88 | 28.0           | 32.6            | 40.0            | 47.5            | 58.0            | 68.0            | 74.4            |

Table 4-3-2-3-54 Vital capacity (ml)

| Gender | Age group (year) | n   | Mean   | SD     | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|--------|--------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 3901.7 | 669.48 | 2888.0         | 3060.5          | 3373.8          | 3900.0          | 4313.8          | 4760.0          | 5131.3          |
|        | 25~29            | 191 | 3942.7 | 839.80 | 2639.0         | 2985.0          | 3395.0          | 3900.0          | 4335.0          | 4990.0          | 5903.4          |
|        | 30~34            | 194 | 3766.6 | 691.80 | 2734.0         | 2990.0          | 3272.5          | 3707.5          | 4182.5          | 4532.5          | 5335.0          |
|        | 35~39            | 192 | 3782.5 | 817.34 | 2639.0         | 2980.0          | 3175.0          | 3635.0          | 4207.5          | 4728.0          | 5721.7          |
|        | 40~44            | 201 | 3617.5 | 724.49 | 2279.0         | 2832.0          | 3175.0          | 3505.0          | 4082.5          | 4499.0          | 5072.9          |
|        | 45~49            | 231 | 3498.6 | 752.37 | 2333.0         | 2729.0          | 3040.0          | 3420.0          | 3800.0          | 4412.0          | 5240.4          |
|        | 50~54            | 209 | 3283.9 | 693.67 | 2030.0         | 2475.0          | 2867.5          | 3180.0          | 3740.0          | 4230.0          | 4814.0          |
|        | 55~59            | 184 | 3167.6 | 669.94 | 2036.0         | 2430.0          | 2788.8          | 3122.5          | 3457.5          | 4000.0          | 4808.7          |
| F      | 20~24            | 199 | 2761.2 | 486.28 | 1880.0         | 2148.0          | 2445.0          | 2795.0          | 3005.0          | 3325.0          | 3755.0          |
|        | 25~29            | 220 | 2801.6 | 510.92 | 1980.0         | 2250.5          | 2486.3          | 2757.5          | 3092.5          | 3380.0          | 3821.3          |
|        | 30~34            | 220 | 2703.2 | 593.33 | 1483.0         | 2026.0          | 2366.3          | 2652.5          | 3008.8          | 3379.5          | 3905.0          |
|        | 35~39            | 214 | 2658.7 | 584.97 | 1667.0         | 1990.0          | 2293.8          | 2602.5          | 2938.8          | 3407.5          | 3879.0          |
|        | 40~44            | 336 | 2534.8 | 556.85 | 1441.0         | 1887.0          | 2190.0          | 2530.0          | 2840.0          | 3170.0          | 3723.5          |
|        | 45~49            | 354 | 2446.6 | 548.85 | 1445.0         | 1735.0          | 2110.0          | 2455.0          | 2761.3          | 3105.0          | 3648.7          |
|        | 50~54            | 283 | 2252.6 | 496.72 | 1368.0         | 1602.0          | 1915.0          | 2250.0          | 2555.0          | 2890.0          | 3289.4          |
|        | 55~59            | 191 | 2140.8 | 513.47 | 1134.0         | 1485.0          | 1795.0          | 2115.0          | 2510.0          | 2809.0          | 3103.0          |

Table 4-3-2-3-55 Vital capacity/weight (ml/kg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 63.0 | 11.31 | 39.5           | 48.5            | 56.5            | 63.3            | 70.6            | 77.6            | 83.3            |
|        | 25~29            | 191 | 62.3 | 13.47 | 41.2           | 46.4            | 52.9            | 62.3            | 68.6            | 78.3            | 90.7            |
|        | 30~34            | 194 | 57.3 | 11.75 | 36.5           | 41.0            | 50.2            | 58.1            | 64.6            | 71.7            | 78.5            |
|        | 35~39            | 192 | 57.0 | 12.94 | 36.4           | 42.9            | 48.0            | 55.4            | 63.8            | 70.8            | 81.9            |
|        | 40~44            | 201 | 55.4 | 11.22 | 35.4           | 40.5            | 47.6            | 54.9            | 62.7            | 69.8            | 77.9            |
|        | 45~49            | 231 | 54.3 | 12.56 | 32.4           | 39.8            | 47.9            | 53.0            | 61.0            | 69.0            | 83.0            |
|        | 50~54            | 208 | 50.8 | 12.03 | 29.2           | 36.1            | 42.7            | 50.0            | 58.1            | 64.1            | 75.8            |
|        | 55~59            | 184 | 49.3 | 11.08 | 29.4           | 35.4            | 41.7            | 47.4            | 57.2            | 64.3            | 73.6            |
| F      | 20~24            | 199 | 55.6 | 10.48 | 32.5           | 43.7            | 50.1            | 55.5            | 61.9            | 68.3            | 75.4            |
|        | 25~29            | 220 | 55.7 | 9.94  | 37.9           | 44.6            | 49.6            | 55.1            | 60.8            | 67.2            | 76.4            |
|        | 30~34            | 220 | 52.5 | 11.81 | 28.4           | 38.0            | 45.7            | 52.4            | 59.1            | 66.1            | 77.2            |
|        | 35~39            | 214 | 49.7 | 11.51 | 29.6           | 37.0            | 42.8            | 48.8            | 55.7            | 63.0            | 75.4            |
|        | 40~44            | 336 | 46.4 | 10.96 | 27.5           | 33.3            | 39.5            | 46.0            | 52.8            | 59.9            | 67.7            |
|        | 45~49            | 354 | 45.4 | 11.32 | 27.0           | 31.4            | 37.5            | 44.9            | 52.3            | 59.4            | 70.0            |
|        | 50~54            | 283 | 40.9 | 10.29 | 24.3           | 28.7            | 33.9            | 40.2            | 46.8            | 54.5            | 63.7            |
|        | 55~59            | 191 | 38.5 | 10.50 | 19.0           | 25.8            | 31.1            | 38.4            | 44.2            | 52.0            | 60.4            |

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Table 4-3-2-3-56 Step test index

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 52.3 | 6.88  | 41.0           | 44.3            | 47.7            | 51.1            | 56.2            | 62.1            | 66.8            |
|        | 25~29            | 191 | 52.4 | 6.81  | 41.6           | 43.9            | 47.9            | 51.7            | 56.6            | 62.0            | 67.9            |
|        | 30~34            | 190 | 50.1 | 8.38  | 33.9           | 41.9            | 46.1            | 50.6            | 54.9            | 59.6            | 65.6            |
|        | 35~39            | 188 | 52.4 | 7.80  | 39.6           | 44.5            | 46.9            | 50.6            | 56.3            | 61.7            | 70.3            |
|        | 40~44            | 197 | 57.1 | 10.32 | 42.0           | 46.8            | 50.6            | 56.3            | 61.2            | 71.5            | 81.2            |
|        | 45~49            | 222 | 58.6 | 12.25 | 42.5           | 46.9            | 50.8            | 56.4            | 64.7            | 74.2            | 84.6            |
|        | 50~54            | 199 | 57.7 | 10.19 | 44.1           | 47.6            | 51.1            | 55.9            | 62.1            | 72.0            | 84.9            |
|        | 55~59            | 172 | 54.1 | 11.62 | 24.4           | 44.4            | 48.7            | 53.1            | 60.8            | 68.2            | 76.8            |
| F      | 20~24            | 198 | 53.5 | 7.31  | 42.2           | 44.5            | 48.1            | 52.8            | 57.8            | 63.5            | 66.8            |
|        | 25~29            | 220 | 54.4 | 8.78  | 42.1           | 45.2            | 49.0            | 53.6            | 59.6            | 62.9            | 73.2            |
|        | 30~34            | 219 | 55.6 | 10.49 | 38.7           | 45.7            | 50.3            | 55.2            | 62.1            | 67.7            | 74.6            |
|        | 35~39            | 213 | 56.3 | 9.69  | 41.9           | 46.2            | 50.1            | 55.4            | 60.6            | 68.2            | 75.0            |
|        | 40~44            | 324 | 57.4 | 10.07 | 39.8           | 47.0            | 51.7            | 56.8            | 63.3            | 69.5            | 77.8            |
|        | 45~49            | 339 | 60.3 | 9.86  | 45.5           | 48.9            | 52.9            | 59.2            | 66.2            | 72.6            | 83.2            |
|        | 50~54            | 267 | 61.9 | 11.04 | 43.5           | 50.3            | 54.9            | 60.8            | 68.2            | 75.1            | 84.8            |
|        | 55~59            | 174 | 60.3 | 11.35 | 36.9           | 46.2            | 53.8            | 60.0            | 66.2            | 76.9            | 83.7            |

### 4.3.5 Physical Fitness

Table 4-3-2-3-57 Vertical jump (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 38.8 | 6.27 | 25.9           | 31.1            | 35.2            | 38.6            | 42.2            | 46.5            | 50.5            |
|        | 25~29            | 191 | 37.3 | 6.33 | 26.0           | 29.0            | 32.9            | 37.0            | 41.0            | 45.7            | 49.9            |
|        | 30~34            | 194 | 35.4 | 5.94 | 23.7           | 27.9            | 31.4            | 35.7            | 39.4            | 42.2            | 47.4            |
|        | 35~39            | 191 | 34.2 | 5.64 | 21.4           | 26.8            | 30.5            | 34.7            | 37.7            | 40.7            | 44.8            |
| F      | 20~24            | 199 | 24.6 | 4.37 | 17.5           | 20.0            | 21.2            | 24.1            | 26.9            | 30.0            | 35.3            |
|        | 25~29            | 220 | 24.0 | 3.88 | 17.1           | 19.3            | 21.4            | 24.0            | 26.4            | 29.2            | 32.3            |
|        | 30~34            | 219 | 23.2 | 4.59 | 15.8           | 17.7            | 20.1            | 22.8            | 25.9            | 29.2            | 31.8            |
|        | 35~39            | 206 | 22.1 | 3.79 | 15.4           | 17.6            | 19.7            | 21.8            | 24.6            | 26.9            | 29.1            |

Table 4-3-2-3-58 Push-ups (M) / One-minute sit-ups (F) (time)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 187 | 24.2 | 10.23 | 7.0            | 12.0            | 18.0            | 22.0            | 30.0            | 38.0            | 48.4            |
|        | 25~29            | 191 | 22.7 | 10.14 | 4.0            | 11.0            | 15.0            | 21.0            | 30.0            | 38.0            | 44.0            |
|        | 30~34            | 194 | 19.7 | 9.62  | 5.0            | 9.0             | 13.0            | 19.0            | 24.3            | 32.0            | 42.2            |
|        | 35~39            | 190 | 18.3 | 9.56  | 5.0            | 8.0             | 11.0            | 16.0            | 23.0            | 31.0            | 40.3            |
| F      | 20~24            | 198 | 22.2 | 7.50  | 2.0            | 12.9            | 18.0            | 22.0            | 27.3            | 31.0            | 38.0            |
|        | 25~29            | 220 | 21.6 | 6.67  | 10.0           | 12.1            | 17.0            | 22.0            | 26.0            | 30.0            | 33.0            |
|        | 30~34            | 218 | 18.7 | 8.45  | 2.0            | 7.0             | 14.0            | 19.0            | 24.0            | 30.1            | 33.4            |
|        | 35~39            | 207 | 15.5 | 8.09  | 0.0            | 5.0             | 10.0            | 16.0            | 20.0            | 27.2            | 31.0            |

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Table 4-3-2-3-59 Grip strength (kg)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 42.3 | 6.30 | 30.3           | 34.3            | 38.2            | 42.1            | 46.8            | 50.2            | 54.3            |
|        | 25~29            | 191 | 42.2 | 6.92 | 29.1           | 32.9            | 38.1            | 42.1            | 46.6            | 50.3            | 56.0            |
|        | 30~34            | 194 | 43.2 | 7.16 | 30.2           | 34.9            | 38.7            | 42.4            | 48.3            | 53.4            | 58.2            |
|        | 35~39            | 192 | 43.7 | 6.33 | 31.5           | 35.8            | 39.1            | 43.9            | 48.2            | 51.1            | 55.8            |
|        | 40~44            | 201 | 42.9 | 7.66 | 27.0           | 32.5            | 38.1            | 42.8            | 48.2            | 52.3            | 56.1            |
|        | 45~49            | 231 | 42.7 | 6.62 | 30.6           | 34.1            | 38.1            | 42.9            | 47.3            | 51.1            | 55.0            |
|        | 50~54            | 209 | 40.8 | 7.72 | 26.8           | 29.3            | 36.5            | 40.8            | 45.4            | 50.1            | 55.6            |
|        | 55~59            | 184 | 39.7 | 6.64 | 28.9           | 30.8            | 34.6            | 39.8            | 44.7            | 48.8            | 52.1            |
| F      | 20~24            | 199 | 24.0 | 5.40 | 16.9           | 18.6            | 20.3            | 23.7            | 26.4            | 29.3            | 33.7            |
|        | 25~29            | 220 | 24.9 | 4.61 | 16.4           | 18.5            | 21.8            | 25.2            | 28.2            | 31.0            | 32.7            |
|        | 30~34            | 220 | 25.0 | 4.96 | 16.3           | 19.1            | 21.6            | 24.6            | 28.1            | 31.9            | 35.7            |
|        | 35~39            | 214 | 25.8 | 4.64 | 17.3           | 19.5            | 22.6            | 25.9            | 28.9            | 31.6            | 34.2            |
|        | 40~44            | 336 | 25.1 | 5.05 | 17.1           | 18.6            | 21.4            | 24.8            | 28.4            | 31.3            | 36.4            |
|        | 45~49            | 354 | 24.7 | 4.36 | 16.8           | 19.3            | 21.9            | 24.5            | 27.5            | 30.6            | 33.4            |
|        | 50~54            | 283 | 23.7 | 4.71 | 15.5           | 17.8            | 20.0            | 23.6            | 26.5            | 30.2            | 33.1            |
|        | 55~59            | 192 | 22.6 | 4.17 | 14.1           | 17.4            | 20.0            | 22.5            | 25.0            | 28.2            | 31.2            |

Table 4-3-2-3-60 Back strength (kg)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 119.2 | 21.36 | 83.0           | 93.8            | 104.0           | 118.0           | 137.0           | 147.0           | 160.0           |
|        | 25~29            | 191 | 118.7 | 23.09 | 79.0           | 92.0            | 103.0           | 119.0           | 132.0           | 148.0           | 165.2           |
|        | 30~34            | 194 | 122.5 | 23.96 | 83.0           | 92.0            | 107.8           | 123.0           | 138.0           | 154.0           | 166.2           |
|        | 35~39            | 190 | 118.7 | 19.65 | 84.0           | 95.1            | 104.0           | 117.0           | 134.3           | 147.0           | 154.3           |
| F      | 20~24            | 199 | 62.4  | 15.97 | 29.0           | 42.0            | 53.0            | 61.0            | 72.0            | 84.0            | 95.0            |
|        | 25~29            | 220 | 64.6  | 14.19 | 39.0           | 47.0            | 54.0            | 63.5            | 74.0            | 83.8            | 92.5            |
|        | 30~34            | 220 | 66.4  | 16.24 | 37.0           | 44.0            | 54.0            | 67.5            | 77.0            | 87.0            | 95.4            |
|        | 35~39            | 206 | 70.0  | 18.03 | 34.0           | 45.7            | 58.8            | 72.0            | 82.0            | 91.0            | 102.0           |

Table 4-3-2-3-61 Sit and reach (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 3.4  | 8.25 | -13.0          | -7.5            | -1.1            | 3.8             | 8.8             | 13.7            | 18.0            |
|        | 25~29            | 190 | 2.3  | 7.62 | -11.1          | -8.6            | -3.1            | 2.9             | 6.4             | 12.1            | 16.9            |
|        | 30~34            | 193 | 1.7  | 8.10 | -14.2          | -9.4            | -4.1            | 3.0             | 7.3             | 12.1            | 15.5            |
|        | 35~39            | 191 | 2.5  | 7.71 | -12.4          | -8.0            | -3.5            | 3.4             | 8.0             | 12.0            | 17.4            |
|        | 40~44            | 200 | 2.7  | 8.14 | -12.5          | -7.9            | -3.8            | 3.5             | 8.3             | 12.5            | 18.1            |
|        | 45~49            | 229 | 2.6  | 8.90 | -16.6          | -9.5            | -2.6            | 2.6             | 9.1             | 13.6            | 19.2            |
|        | 50~54            | 208 | 1.4  | 9.63 | -15.0          | -11.4           | -6.4            | 1.3             | 7.7             | 14.7            | 20.0            |
|        | 55~59            | 184 | 0.3  | 7.83 | -15.0          | -10.1           | -6.4            | 1.4             | 5.7             | 10.3            | 14.2            |
| F      | 20~24            | 199 | 5.4  | 7.90 | -11.1          | -3.8            | -0.1            | 6.0             | 10.2            | 14.6            | 20.0            |
|        | 25~29            | 220 | 6.0  | 7.82 | -9.5           | -3.3            | 0.7             | 5.3             | 11.1            | 16.6            | 21.0            |
|        | 30~34            | 220 | 6.9  | 8.83 | -11.5          | -5.0            | 0.8             | 7.5             | 13.1            | 17.1            | 23.6            |
|        | 35~39            | 214 | 5.8  | 7.73 | -9.2           | -4.8            | 0.7             | 5.7             | 11.2            | 15.6            | 20.1            |
|        | 40~44            | 334 | 5.7  | 8.20 | -9.5           | -5.4            | 0.0             | 5.6             | 11.7            | 17.0            | 20.2            |
|        | 45~49            | 353 | 5.8  | 8.96 | -13.6          | -5.8            | -0.1            | 6.3             | 12.3            | 17.1            | 20.3            |
|        | 50~54            | 281 | 6.0  | 8.07 | -11.1          | -4.8            | 1.0             | 6.2             | 11.6            | 16.2            | 20.1            |
|        | 55~59            | 188 | 6.2  | 8.24 | -11.7          | -4.1            | 1.6             | 6.7             | 12.1            | 16.6            | 20.1            |

Table 4-3-2-3-62 Respond time (sec)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 0.39 | 0.042 | 0.32           | 0.34            | 0.37            | 0.39            | 0.42            | 0.44            | 0.49            |
|        | 25~29            | 191 | 0.41 | 0.045 | 0.33           | 0.34            | 0.38            | 0.41            | 0.43            | 0.46            | 0.51            |
|        | 30~34            | 194 | 0.40 | 0.051 | 0.31           | 0.34            | 0.37            | 0.40            | 0.44            | 0.47            | 0.50            |
|        | 35~39            | 192 | 0.41 | 0.048 | 0.32           | 0.35            | 0.38            | 0.40            | 0.44            | 0.48            | 0.52            |
|        | 40~44            | 201 | 0.43 | 0.070 | 0.33           | 0.36            | 0.38            | 0.42            | 0.46            | 0.50            | 0.57            |
|        | 45~49            | 231 | 0.43 | 0.068 | 0.34           | 0.36            | 0.39            | 0.42            | 0.47            | 0.53            | 0.59            |
|        | 50~54            | 209 | 0.44 | 0.072 | 0.34           | 0.37            | 0.40            | 0.43            | 0.47            | 0.51            | 0.60            |
|        | 55~59            | 184 | 0.45 | 0.069 | 0.35           | 0.38            | 0.41            | 0.44            | 0.49            | 0.52            | 0.62            |
| F      | 20~24            | 199 | 0.42 | 0.048 | 0.34           | 0.36            | 0.39            | 0.42            | 0.45            | 0.48            | 0.54            |
|        | 25~29            | 220 | 0.43 | 0.053 | 0.35           | 0.37            | 0.39            | 0.42            | 0.46            | 0.50            | 0.54            |
|        | 30~34            | 220 | 0.43 | 0.052 | 0.35           | 0.37            | 0.40            | 0.43            | 0.47            | 0.50            | 0.55            |
|        | 35~39            | 214 | 0.44 | 0.054 | 0.34           | 0.37            | 0.40            | 0.43            | 0.47            | 0.51            | 0.57            |
|        | 40~44            | 336 | 0.45 | 0.057 | 0.36           | 0.38            | 0.41            | 0.45            | 0.48            | 0.52            | 0.58            |
|        | 45~49            | 354 | 0.46 | 0.065 | 0.37           | 0.39            | 0.41            | 0.45            | 0.49            | 0.55            | 0.61            |
|        | 50~54            | 283 | 0.48 | 0.068 | 0.38           | 0.40            | 0.43            | 0.47            | 0.51            | 0.56            | 0.64            |
|        | 55~59            | 192 | 0.50 | 0.087 | 0.38           | 0.41            | 0.44            | 0.49            | 0.54            | 0.63            | 0.73            |

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Table 4-3-2-3-63 One foot stands with eyes closed (sec)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 20~24            | 188 | 48.3 | 51.2 | 4.0            | 10.0            | 15.0            | 28.0            | 64.0            | 120.1           | 181.6           |
|        | 25~29            | 191 | 42.4 | 42.8 | 3.8            | 8.0             | 12.0            | 26.0            | 58.0            | 98.0            | 150.0           |
|        | 30~34            | 194 | 30.7 | 32.0 | 3.0            | 5.0             | 10.0            | 18.0            | 42.0            | 72.0            | 126.3           |
|        | 35~39            | 192 | 34.8 | 48.1 | 3.0            | 6.0             | 9.3             | 15.5            | 38.5            | 97.3            | 178.2           |
|        | 40~44            | 201 | 24.2 | 24.1 | 3.0            | 5.0             | 7.0             | 16.0            | 31.0            | 56.8            | 89.6            |
|        | 45~49            | 231 | 20.7 | 25.7 | 3.0            | 4.0             | 6.0             | 12.0            | 22.0            | 50.8            | 106.0           |
|        | 50~54            | 209 | 17.7 | 17.5 | 3.0            | 4.0             | 6.0             | 10.0            | 23.0            | 42.0            | 56.7            |
|        | 55~59            | 183 | 17.9 | 21.4 | 3.0            | 4.0             | 6.0             | 10.0            | 20.0            | 40.0            | 77.9            |
| F      | 20~24            | 199 | 46.1 | 52.2 | 4.0            | 8.0             | 12.0            | 26.0            | 60.0            | 111.0           | 190.0           |
|        | 25~29            | 220 | 43.5 | 51.7 | 3.0            | 6.0             | 11.0            | 25.0            | 52.3            | 110.0           | 183.1           |
|        | 30~34            | 220 | 32.2 | 34.9 | 3.0            | 4.0             | 9.0             | 21.0            | 36.0            | 80.5            | 131.1           |
|        | 35~39            | 214 | 27.6 | 34.4 | 3.0            | 4.0             | 7.0             | 16.0            | 31.3            | 65.5            | 143.7           |
|        | 40~44            | 335 | 24.5 | 32.6 | 3.0            | 4.0             | 6.0             | 14.0            | 29.0            | 60.0            | 98.0            |
|        | 45~49            | 354 | 18.7 | 24.4 | 3.0            | 4.0             | 6.0             | 12.0            | 21.3            | 43.0            | 70.0            |
|        | 50~54            | 283 | 14.3 | 14.8 | 3.0            | 3.0             | 5.0             | 8.0             | 19.0            | 34.0            | 49.9            |
|        | 55~59            | 192 | 12.1 | 14.2 | 3.0            | 3.0             | 4.0             | 8.0             | 13.0            | 27.8            | 57.0            |

### 4.3.6 Hearing

Table 4-3-2-3-64 Hearing abnormality (%)

| Gender | Age group (year) | Subjects (n) | Left ear abnormality (%) | Right ear abnormality (%) |
|--------|------------------|--------------|--------------------------|---------------------------|
| M      | 20~24            | 188          | 0.0                      | 0.0                       |
|        | 25~29            | 191          | 0.0                      | 0.0                       |
|        | 30~34            | 194          | 0.5                      | 0.0                       |
|        | 35~39            | 192          | 0.0                      | 0.0                       |
|        | 40~44            | 201          | 0.5                      | 0.5                       |
|        | 45~49            | 231          | 0.0                      | 0.4                       |
|        | 50~54            | 209          | 1.0                      | 0.0                       |
|        | 55~59            | 184          | 1.6                      | 0.5                       |
| F      | 20~24            | 199          | 0.0                      | 0.0                       |
|        | 25~29            | 220          | 0.0                      | 0.0                       |
|        | 30~34            | 220          | 0.0                      | 0.0                       |
|        | 35~39            | 214          | 0.9                      | 0.0                       |
|        | 40~44            | 336          | 0.3                      | 0.3                       |
|        | 45~49            | 354          | 0.8                      | 0.8                       |
|        | 50~54            | 283          | 0.7                      | 0.4                       |
|        | 55~59            | 192          | 1.6                      | 0.0                       |

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### 4.4 Seniors

#### 4.4.1 Basic Information of the Subjects

Table 4-4-1-4-1 Subjects (n) distribution

| Survey areas | Sampling sites (Senior centers)                                                              | M            |              | F            |              | Total        |              |
|--------------|----------------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
|              |                                                                                              | Subjects (n) | Percentage % | Subjects (n) | Percentage % | Subjects (n) | Percentage % |
| North        | Centro de Convívio do Bairro do Hipódromo, Bairro da Areia Preta e Iao Hon                   | 1            | 0.5          | 7            | 2.4          | 8            | 1.6          |
|              | Centro de Convívio do C.H.T. Patane da UGAM                                                  | 5            | 2.5          | 5            | 1.7          | 10           | 2.1          |
|              | Centro de Dia da Ilha Verde                                                                  | 7            | 3.5          | 22           | 7.7          | 29           | 6.0          |
|              | Asilo de Betânia                                                                             | 8            | 4.0          | 1            | 0.3          | 9            | 1.9          |
| Central      | Casa para Anciãos da Paróquia de Santo António                                               | 0            | 0            | 5            | 1.7          | 5            | 1.0          |
|              | Centro de Convívio da Associação de Mútuo Auxílio dos Moradores do Bairro de San Kio         | 2            | 1.0          | 8            | 2.8          | 10           | 2.1          |
|              | Centro de Convívio da Associação de Mútuo Auxílio dos Moradores do Sam Pá Mun                | 7            | 3.5          | 16           | 5.6          | 23           | 4.7          |
| South        | Centro de Dia do Porto Interior                                                              | 4            | 2.0          | 26           | 9.1          | 30           | 6.2          |
|              | Centro para Idosos da Casa Ricci                                                             | 2            | 1.0          | 9            | 3.1          | 11           | 2.3          |
|              | Centro de Convívio “Missão Luterana de Hong Kong e Macau / Centro de Terceira Idade Yan Kei” | 5            | 2.5          | 10           | 3.5          | 15           | 3.1          |
|              | Centro de Cuidados Especiais Longevidade (Serviço de Apoio Domiciliário)                     | 2            | 1.0          | 20           | 7.0          | 22           | 4.5          |
| Others       | supplementary sites in north area                                                            | 37           | 18.5         | 65           | 22.7         | 102          | 21.0         |
|              | supplementary sites in central area                                                          | 63           | 31.5         | 67           | 23.4         | 130          | 26.7         |
|              | supplementary sites in south area                                                            | 57           | 28.5         | 25           | 8.7          | 82           | 16.9         |
| <b>Total</b> |                                                                                              | <b>200</b>   | <b>100</b>   | <b>286</b>   | <b>100</b>   | <b>486</b>   | <b>100</b>   |

Note: the supplementary sampling sites in the north area included mainly Centro de Convívio “Hong Nin Chi Ka” da Associação de Agricultores de Macau, Centro de Dia de Mong - Há and Centro de Cuidados Especiais Rejuvenescer. The supplementary sampling sites in the central area included mainly Centro de Lazer e Recreação dos Anciãos da Associação de Beneficência e Assistência Mútua dos Moradores do Bairro “Tai O” and Centro de Convívio Casa dos “Pinheiros”. And the supplementary sampling sites in the south area included mainly Centro de Lazer e Recreação das Associações dos Moradores da Zona Sul de Macau, Centro de Lazer e Recreação dos Anciãos da Associação dos Residentes do Bairro da Praia do Manduco, Associação dos Residentes da Rua 5 de Outubro, Centro de Lazer e Recreação dos Anciãos da União Geral das Associações dos Moradores de Macau, Centro de Convívio da Associação dos Habitantes das Ilhas Kuan Iek, Centro de Simiao and Centro do Bairro de Taipa.

Table 4-4-1-4-2 Residential distribution of the subjects(%)

| Communities        | M    | F    | Total       |
|--------------------|------|------|-------------|
| Na. Sra. de Fátima | 30.5 | 36.0 | <b>33.7</b> |
| S. António         | 19.0 | 22.0 | <b>20.8</b> |
| S. Lázaro          | 9.5  | 8.4  | <b>8.8</b>  |
| S. Francisco       | 2.5  | 3.1  | <b>2.9</b>  |
| Na. Sra. do Carmo  | 15.5 | 10.5 | <b>12.6</b> |
| S.Lourenço         | 12.0 | 9.1  | <b>10.3</b> |
| Sé Catedral        | 11.0 | 10.8 | <b>10.9</b> |

Table 4-4-1-4-3 Birth place (%)

| Gender | Birth place | Aged 60~64 | Aged 65~69 | Total       |
|--------|-------------|------------|------------|-------------|
| M      | Mainland    | 68.3       | 68.7       | <b>68.5</b> |
|        | Macao       | 19.8       | 20.2       | <b>20.0</b> |
|        | Hong Kong   | 2.0        | 6.1        | <b>4.0</b>  |
|        | Others      | 9.9        | 5.1        | <b>7.5</b>  |
| F      | Mainland    | 66.9       | 80.3       | <b>73.1</b> |
|        | Macao       | 21.4       | 14.4       | <b>18.2</b> |
|        | Hong Kong   | 1.9        | 0.8        | <b>1.4</b>  |
|        | Others      | 9.7        | 4.5        | <b>7.3</b>  |

Table 4-4-1-4-4 Education (%)

| Gender | Education                          | Aged 60~64 | Aged 65~69 | Total       |
|--------|------------------------------------|------------|------------|-------------|
| M      | Below primary school               | 8.9        | 26.3       | <b>17.5</b> |
|        | Primary school                     | 37.6       | 36.4       | <b>37.0</b> |
|        | Secondary school                   | 44.6       | 20.2       | <b>32.5</b> |
|        | University or professional college | 7.9        | 17.2       | <b>12.5</b> |
|        | Doctoral                           | 1.0        | 0          | <b>0.5</b>  |
| F      | Below primary school               | 33.1       | 59.1       | <b>45.1</b> |
|        | Primary school                     | 35.7       | 28.8       | <b>32.5</b> |
|        | Secondary school                   | 28.6       | 9.8        | <b>19.9</b> |
|        | University or professional college | 2.6        | 2.3        | <b>2.4</b>  |

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Table 4-4-1-4-5 Occupation before retirement (%)

| Gender                  | Category                    | Occupation before retirement                                                                      | Aged 60~64                                                                                        | Aged 65~69 | Total       |            |
|-------------------------|-----------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------|-------------|------------|
| M                       | Non labor intensive workers | Legislative official, high rank official of public administration, head of communities or manager | 5.0                                                                                               | 0          | <b>2.5</b>  |            |
|                         |                             | Professional                                                                                      | 9.9                                                                                               | 10.1       | <b>10.0</b> |            |
|                         |                             | Technician or assistant professional                                                              | 5.0                                                                                               | 2.0        | <b>3.5</b>  |            |
|                         |                             | Office clerk                                                                                      | 4.0                                                                                               | 3.0        | <b>3.5</b>  |            |
|                         | Labor intensive workers     | Serviceman or salesman                                                                            | 12.9                                                                                              | 29.3       | <b>21.0</b> |            |
|                         |                             | Experienced workers in the fishery and agriculture industry                                       | 1.0                                                                                               | 4.0        | <b>2.5</b>  |            |
|                         |                             | Artisan or handicraftsman                                                                         | 21.8                                                                                              | 15.2       | <b>18.5</b> |            |
|                         |                             | Machine operator, driver or assembler                                                             | 6.9                                                                                               | 6.1        | <b>6.5</b>  |            |
|                         |                             | Non-technician                                                                                    | 21.8                                                                                              | 16.2       | <b>19.0</b> |            |
|                         |                             | Others                                                                                            | 11.9                                                                                              | 14.1       | <b>13.0</b> |            |
|                         | F                           | Non labor intensive workers                                                                       | Legislative official, high rank official of public administration, head of communities or manager | 2.6        | 0           | <b>1.4</b> |
|                         |                             |                                                                                                   | Professional                                                                                      | 4.5        | 3.0         | <b>3.8</b> |
|                         |                             |                                                                                                   | Technician or assistant professional                                                              | 5.2        | 3.0         | <b>4.2</b> |
|                         |                             |                                                                                                   | Office clerk                                                                                      | 3.2        | 3.0         | <b>3.1</b> |
| Labor intensive workers |                             | Serviceman or salesman                                                                            | 26.0                                                                                              | 29.5       | <b>27.6</b> |            |
|                         |                             | Experienced workers in the fishery and agriculture industry                                       | 0.6                                                                                               | 1.5        | <b>1.0</b>  |            |
|                         |                             | Artisan or handicraftsman                                                                         | 21.4                                                                                              | 19.7       | <b>20.6</b> |            |
|                         |                             | Machine operator, driver or assembler                                                             | 0.6                                                                                               | 2.3        | <b>1.4</b>  |            |
|                         |                             | Non-technician                                                                                    | 24.0                                                                                              | 22.7       | <b>23.4</b> |            |
|                         |                             | Others                                                                                            | 11.7                                                                                              | 15.2       | <b>13.3</b> |            |

Table 4-4-1-4-6 Working environment before retirement (%)

| Gender | Working environment before retirement | Aged  | Aged  | Total       |
|--------|---------------------------------------|-------|-------|-------------|
|        |                                       | 60~64 | 65~69 |             |
| M      | Outdoor                               | 33.7  | 22.2  | <b>28.0</b> |
|        | Indoor naturally ventilated           | 44.6  | 50.5  | <b>47.5</b> |
|        | Indoor with air conditioning          | 21.8  | 27.3  | <b>24.5</b> |
| F      | Outdoor                               | 12.3  | 17.4  | <b>14.7</b> |
|        | Indoor naturally ventilated           | 50.6  | 64.4  | <b>57.0</b> |
|        | Indoor with air conditioning          | 37.0  | 18.2  | <b>28.3</b> |

Table 4-4-1-4-7 Average working hours per week (%)

| Gender | Working hours<br>(hrs) | Aged  | Aged  | Total       |
|--------|------------------------|-------|-------|-------------|
|        |                        | 60~64 | 65~69 |             |
| M      | Unemployed             | 47.5  | 86.9  | <b>67.0</b> |
|        | Within 20              | 5.9   | 5.1   | <b>5.5</b>  |
|        | 20~35                  | 5.9   | 0     | <b>3.0</b>  |
|        | 35~40                  | 14.9  | 1.0   | <b>8.0</b>  |
|        | 40~50                  | 12.9  | 0     | <b>6.5</b>  |
|        | 50 or more             | 12.9  | 7.1   | <b>10.0</b> |
| F      | Unemployed             | 70.1  | 79.5  | <b>74.5</b> |
|        | Within 20              | 8.4   | 10.6  | <b>9.4</b>  |
|        | 20~35                  | 3.9   | 4.5   | <b>4.2</b>  |
|        | 35~40                  | 6.5   | 0.8   | <b>3.8</b>  |
|        | 40~50                  | 2.6   | 2.3   | <b>2.4</b>  |
|        | 50 or more             | 8.4   | 2.3   | <b>5.6</b>  |

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### 4.4.2 Lifestyle

Table 4-4-1-4-8 Average hours of sleep per day (%)

| Gender       | Age group (year) | Subjects (n) | Below 6 hrs | 6~9 hrs     | 9 hrs or more |
|--------------|------------------|--------------|-------------|-------------|---------------|
| M            | 60~64            | 101          | 6.9         | 85.1        | 7.9           |
|              | 65~69            | 99           | 20.2        | 71.7        | 8.1           |
| F            | 60~64            | 154          | 27.9        | 67.5        | 4.5           |
|              | 65~69            | 132          | 25.8        | 66.7        | 7.6           |
| <b>Total</b> |                  | <b>486</b>   | <b>21.4</b> | <b>71.8</b> | <b>6.8</b>    |

Table 4-4-1-4-9 Quality of sleep (%)

| Gender       | Age group (year) | Subjects (n) | Poor        | Reasonable  | Good        |
|--------------|------------------|--------------|-------------|-------------|-------------|
| M            | 60~64            | 101          | 9.9         | 58.4        | 31.7        |
|              | 65~69            | 99           | 16.2        | 57.6        | 26.3        |
| F            | 60~64            | 154          | 21.4        | 46.8        | 31.8        |
|              | 65~69            | 132          | 21.2        | 40.2        | 38.6        |
| <b>Total</b> |                  | <b>486</b>   | <b>17.9</b> | <b>49.6</b> | <b>32.5</b> |

Table 4-4-1-4-10 Average walking time per day (%)

| Gender       | Age group (year) | Subjects (n) | Below 30 mins | 30~60 mins  | 1~2 hrs     | 2 hrs or more |
|--------------|------------------|--------------|---------------|-------------|-------------|---------------|
| M            | 60~64            | 101          | 10.9          | 30.7        | 28.7        | 29.7          |
|              | 65~69            | 99           | 8.1           | 27.3        | 35.4        | 29.3          |
| F            | 60~64            | 154          | 7.1           | 31.2        | 29.2        | 32.5          |
|              | 65~69            | 132          | 7.6           | 32.6        | 30.3        | 29.5          |
| <b>Total</b> |                  | <b>486</b>   | <b>8.2</b>    | <b>30.7</b> | <b>30.7</b> | <b>30.4</b>   |

Table 4-4-1-4-11 Average sitting time per day (%)

| Gender       | Age group (year) | Subjects (n) | Below 3 hrs | 3~6 hrs     | 6~9 hrs     | 9~12 hrs   | 12 hrs or more |
|--------------|------------------|--------------|-------------|-------------|-------------|------------|----------------|
| M            | 60~64            | 101          | 26.7        | 52.5        | 12.9        | 5.9        | 2.0            |
|              | 65~69            | 99           | 23.2        | 54.5        | 18.2        | 2.0        | 2.0            |
| F            | 60~64            | 154          | 27.3        | 57.1        | 12.3        | 2.6        | 0.6            |
|              | 65~69            | 132          | 41.7        | 47.0        | 10.6        | 0.8        | 0.0            |
| <b>Total</b> |                  | <b>486</b>   | <b>30.2</b> | <b>52.9</b> | <b>13.2</b> | <b>2.7</b> | <b>1.0</b>     |

Table 4-4-1-4-12 Cigarettes smoked (%)

| Gender       | Age group (year) | Subjects (n) | Smokers   | Less than 10 per day | 10~20 per day | At least 20 per day | Quit less than 2 years ago | Quit at least 2 years ago |
|--------------|------------------|--------------|-----------|----------------------|---------------|---------------------|----------------------------|---------------------------|
| M            | 60~64            | 101          | 48        | 27.1                 | 39.6          | 2.1                 | 6.3                        | 25.0                      |
|              | 65~69            | 99           | 34        | 29.4                 | 32.4          | 5.9                 | 2.9                        | 29.4                      |
| F            | 60~64            | 154          | 6         | 66.7                 | 33.3          | 0                   | 0                          | 0                         |
|              | 65~69            | 132          | 4         | 25                   | 50            | 25                  | 0                          | 0                         |
| <b>Total</b> |                  | <b>486</b>   | <b>92</b> | <b>30.4</b>          | <b>37.0</b>   | <b>4.3</b>          | <b>4.3</b>                 | <b>24.0</b>               |

Table 4-4-1-4-13 Years of smoking (%)

| Gender       | Age group (year) | Smokers   | Less than 5 years | 5~10 years | 10~15 years | 15 years or more |
|--------------|------------------|-----------|-------------------|------------|-------------|------------------|
| M            | 60~64            | 48        | 0.0               | 4.2        | 6.3         | 89.5             |
|              | 65~69            | 34        | 5.9               | 2.9        | 2.9         | 88.2             |
| F            | 60~64            | 6         | 16.7              | 0          | 0           | 83.3             |
|              | 65~69            | 4         | 0                 | 0          | 0           | 100              |
| <b>Total</b> |                  | <b>92</b> | <b>3.3</b>        | <b>3.3</b> | <b>4.3</b>  | <b>89.1</b>      |

Table 4-4-1-4-14 Drinkers (%)

| Gender       | Age group (year) | Subjects (n) | Non-drinkers | Drinkers    |
|--------------|------------------|--------------|--------------|-------------|
| M            | 60~64            | 101          | 63.4         | 36.6        |
|              | 65~69            | 99           | 64.6         | 35.4        |
| F            | 60~64            | 154          | 92.2         | 7.8         |
|              | 65~69            | 132          | 87.1         | 12.9        |
| <b>Total</b> |                  | <b>486</b>   | <b>79.2</b>  | <b>20.8</b> |

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Table 4-4-1-4-15 Frequency of drinking (%)

| Gender       | Age group (year) | Drinkers   | Once every month | 1~2 times per week | 3~4 times per week | 5~7 times per week |
|--------------|------------------|------------|------------------|--------------------|--------------------|--------------------|
| M            | 60~64            | 37         | 40.5             | 24.3               | 5.4                | 29.7               |
|              | 65~69            | 35         | 45.7             | 14.3               | 8.6                | 31.4               |
| F            | 60~64            | 12         | 58.3             | 16.7               | 0                  | 25                 |
|              | 65~69            | 17         | 47.1             | 29.4               | 0                  | 23.5               |
| <b>Total</b> |                  | <b>101</b> | <b>45.5</b>      | <b>20.8</b>        | <b>5.0</b>         | <b>28.7</b>        |

Table 4-4-1-4-16 Type of alcohol drank (%)

| Gender       | Age group (year) | Drinkers   | Liquor     | Beer        | Yellow wine | Rice wine   | Wine or fruit wine | Mixed       |
|--------------|------------------|------------|------------|-------------|-------------|-------------|--------------------|-------------|
| M            | 60~64            | 37         | 18.9       | 54.1        | 0.0         | 5.4         | 18.9               | 2.7         |
|              | 65~69            | 35         | 0.0        | 37.1        | 0.0         | 25.8        | 20.0               | 17.1        |
| F            | 60~64            | 12         | 0.0        | 16.7        | 0.0         | 16.7        | 41.6               | 25.0        |
|              | 65~69            | 17         | 0.0        | 0.0         | 11.8        | 64.6        | 11.8               | 11.8        |
| <b>Total</b> |                  | <b>101</b> | <b>6.9</b> | <b>34.7</b> | <b>2.0</b>  | <b>23.8</b> | <b>20.8</b>        | <b>11.9</b> |

Table 4-4-1-4-17 Activities did during leisure time (%)

| Gender       | Age group (year) | Subjects (n) | Physical exercise | Chess       | Traveling  | Gathering   | AV entertainment | House chores | Sleeping   | Others      |
|--------------|------------------|--------------|-------------------|-------------|------------|-------------|------------------|--------------|------------|-------------|
| M            | 60~64            | 101          | 42.6              | 10.9        | 12.9       | 32.7        | 57.4             | 42.6         | 6.9        | 26.7        |
|              | 65~69            | 99           | 45.5              | 15.2        | 5.1        | 34.3        | 56.6             | 45.5         | 9.1        | 26.3        |
| F            | 60~64            | 154          | 46.1              | 7.8         | 9.7        | 37.7        | 51.3             | 84.4         | 7.1        | 7.8         |
|              | 65~69            | 132          | 52.3              | 10.6        | 5.3        | 45.5        | 48.5             | 84.1         | 6.8        | 9.8         |
| <b>Total</b> |                  | <b>486</b>   | <b>46.9</b>       | <b>10.7</b> | <b>8.2</b> | <b>38.1</b> | <b>52.9</b>      | <b>67.7</b>  | <b>7.4</b> | <b>16.0</b> |

Table 4-4-1-4-18 Average frequency of doing physical exercise per week (%)

| Gender       | Age group (year) | Subjects (n) | Participants | At most once | 1~2 times  | 3~4 times   | 5 times or more |
|--------------|------------------|--------------|--------------|--------------|------------|-------------|-----------------|
| M            | 60~64            | 101          | 75           | 2.7          | 24.0       | 18.7        | 54.7            |
|              | 65~69            | 99           | 82           | 2.4          | 4.9        | 12.2        | 80.5            |
| F            | 60~64            | 154          | 119          | 2.5          | 8.4        | 13.4        | 75.6            |
|              | 65~69            | 132          | 110          | 4.5          | 5.5        | 8.2         | 81.8            |
| <b>Total</b> |                  | <b>486</b>   | <b>386</b>   | <b>3.1</b>   | <b>9.8</b> | <b>12.7</b> | <b>74.4</b>     |

Table 4-4-1-4-19 Average exercise duration (%)

| Gender       | Age group (year) | Participants | Less than 30 mins | 30~60 mins  | 60 mins or more |
|--------------|------------------|--------------|-------------------|-------------|-----------------|
| M            | 60~64            | 75           | 21.3              | 48          | 30.7            |
|              | 65~69            | 82           | 22.0              | 47.6        | 30.5            |
| F            | 60~64            | 119          | 16.0              | 49.6        | 34.5            |
|              | 65~69            | 110          | 21.8              | 45.5        | 32.7            |
| <b>Total</b> |                  | <b>386</b>   | <b>19.9</b>       | <b>47.7</b> | <b>32.4</b>     |

Table 4-4-1-4-20 Self perception when doing physical exercise (%)

| Gender       | Age group (year) | Participants | Not much change in breathing and heart rate | Slight increase in breathing and heart rate, with slight perspiration | Rapid breathing, apparent heart rate increase and perspiring greatly |
|--------------|------------------|--------------|---------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------|
| M            | 6064             | 75           | 33.3                                        | 60.0                                                                  | 6.7                                                                  |
|              | 6569             | 82           | 43.9                                        | 53.7                                                                  | 2.4                                                                  |
| F            | 60~64            | 119          | 36.1                                        | 53.8                                                                  | 10.1                                                                 |
|              | 65~69            | 110          | 42.7                                        | 50.9                                                                  | 6.4                                                                  |
| <b>Total</b> |                  | <b>386</b>   | <b>39.1</b>                                 | <b>54.2</b>                                                           | <b>6.7</b>                                                           |

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Table 4-4-1-4-21 Length of time persisted in doing physical exercise (%)

| Gender       | Age group (year) | Participants | Less than 6 months | 6~12 months | 1~3 years   | 3~5 years   | 5 years or more |
|--------------|------------------|--------------|--------------------|-------------|-------------|-------------|-----------------|
| M            | 60~64            | 75           | 10.7               | 5.3         | 20.0        | 12.0        | 52.0            |
|              | 65~69            | 82           | 3.7                | 6.1         | 23.2        | 15.9        | 51.2            |
| F            | 60~64            | 119          | 4.2                | 5.0         | 23.5        | 19.3        | 47.9            |
|              | 65~69            | 110          | 2.7                | 8.2         | 14.5        | 12.7        | 61.8            |
| <b>Total</b> |                  | <b>386</b>   | <b>4.9</b>         | <b>6.2</b>  | <b>20.2</b> | <b>15.3</b> | <b>53.4</b>     |

Table 4-4-1-4-22 Purpose of doing physical exercise (%)

| Gender       | Age group (year) | Participants | Disease prevention and cure | Improvement in physical ability | Weight loss and fitness | Pressure relieve and mood regulation | Socializing | Others     |
|--------------|------------------|--------------|-----------------------------|---------------------------------|-------------------------|--------------------------------------|-------------|------------|
| M            | 60~64            | 75           | 80.0                        | 44.0                            | 6.7                     | 26.7                                 | 16.0        | 16.0       |
|              | 65~69            | 82           | 86.6                        | 59.8                            | 6.1                     | 17.1                                 | 15.9        | 4.9        |
| F            | 60~64            | 119          | 91.6                        | 43.7                            | 8.4                     | 25.2                                 | 14.3        | 7.6        |
|              | 65~69            | 110          | 90.9                        | 50.0                            | 7.3                     | 16.4                                 | 18.2        | 5.5        |
| <b>Total</b> |                  | <b>386</b>   | <b>88.1</b>                 | <b>49.0</b>                     | <b>7.3</b>              | <b>21.2</b>                          | <b>16.1</b> | <b>8.0</b> |

Table 4-4-1-4-23 Location for doing physical exercise (%)

| Gender | Age group (year) | M     |       | F     |       | Total       |
|--------|------------------|-------|-------|-------|-------|-------------|
|        |                  | 60~64 | 65~69 | 60~64 | 65~69 |             |
|        | Participants     | 75    | 82    | 119   | 110   | <b>386</b>  |
|        | Stadium or arena | 24.0  | 11.0  | 21.0  | 13.6  | <b>17.4</b> |
|        | Park             | 60.0  | 79.3  | 71.4  | 73.6  | <b>71.5</b> |
|        | Office or home   | 5.3   | 19.5  | 16.0  | 16.4  | <b>14.8</b> |
|        | Open ground      | 14.7  | 19.5  | 10.9  | 10.0  | <b>13.2</b> |
|        | Road or street   | 25.3  | 13.4  | 7.6   | 12.7  | <b>13.7</b> |
|        | Recreation club  | 0.0   | 3.7   | 8.4   | 7.3   | <b>5.4</b>  |
|        | Others           | 9.3   | 3.7   | 5.9   | 7.3   | <b>6.5</b>  |

Table 4-4-1-4-24 Types of sports activities participated (%)

| Gender<br>Age group (year) | M     |       | F     |       | Total       |
|----------------------------|-------|-------|-------|-------|-------------|
|                            | 60~64 | 65~69 | 60~64 | 65~69 |             |
| Participants               | 75    | 82    | 119   | 110   | <b>386</b>  |
| Jogging                    | 13.3  | 12.2  | 6.7   | 3.6   | <b>8.3</b>  |
| Swimming                   | 18.7  | 9.8   | 9.2   | 11.8  | <b>11.9</b> |
| Walking                    | 54.7  | 81.7  | 61.3  | 68.2  | <b>66.3</b> |
| Ball games                 | 9.3   | 4.9   | 3.4   | 5.5   | <b>5.4</b>  |
| Climbing                   | 8.0   | 7.3   | 4.2   | 0.0   | <b>4.4</b>  |
| Cycling                    | 6.7   | 2.4   | 1.7   | 0.0   | <b>2.3</b>  |
| Working out                | 0.0   | 3.7   | 6.7   | 10.0  | <b>5.7</b>  |
| Aerobics, yangko           | 13.3  | 8.5   | 37.8  | 33.6  | <b>25.6</b> |
| Martial arts or qigong     | 9.3   | 24.4  | 33.6  | 29.1  | <b>25.6</b> |
| Others                     | 9.3   | 8.5   | 7.6   | 5.5   | <b>7.5</b>  |

Table 4-4-1-4-25 Main obstacles for doing physical exercise (%)

| Gender<br>Age group (year)                               | M     |       | F     |       | Total       |
|----------------------------------------------------------|-------|-------|-------|-------|-------------|
|                                                          | 60~64 | 65~69 | 60~64 | 65~69 |             |
| Subjects (n)                                             | 101   | 99    | 154   | 132   | <b>486</b>  |
| No interest                                              | 11.9  | 8.1   | 5.2   | 7.6   | <b>7.8</b>  |
| Laziness                                                 | 21.8  | 17.2  | 19.5  | 14.4  | <b>18.1</b> |
| No need to exercise                                      | 1.0   | 2.0   | 1.3   | 2.3   | <b>1.6</b>  |
| Too weak                                                 | 3.0   | 10.1  | 8.4   | 11.4  | <b>8.4</b>  |
| Already a labor intensive<br>worker, no need to exercise | 10.9  | 1.0   | 5.2   | 0.8   | <b>4.3</b>  |
| Lack of time                                             | 34.7  | 20.2  | 31.8  | 23.5  | <b>27.8</b> |
| Lack of location                                         | 10.9  | 0.0   | 3.2   | 2.3   | <b>3.9</b>  |
| Lack of guidance                                         | 3.0   | 3.0   | 2.6   | 2.3   | <b>2.7</b>  |
| Lack of organization                                     | 5.9   | 2.0   | 3.2   | 3.0   | <b>3.5</b>  |
| Lack of money                                            | 0.0   | 2.0   | 0.0   | 0.0   | <b>0.4</b>  |
| Others                                                   | 37.6  | 51.5  | 45.5  | 53.0  | <b>47.1</b> |

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Table 4-4-1-4-26 Sports events frequently watched (%)

| Gender<br>Age group (year) | M     |       | F     |       | Total       |
|----------------------------|-------|-------|-------|-------|-------------|
|                            | 60~64 | 65~69 | 60~64 | 65~69 |             |
| Subjects (n)               | 101   | 99    | 154   | 132   | <b>486</b>  |
| Basketball                 | 24.8  | 20.2  | 16.2  | 6.8   | <b>16.3</b> |
| Volleyball                 | 14.9  | 13.1  | 8.4   | 3.8   | <b>9.5</b>  |
| Football                   | 45.5  | 36.4  | 18.2  | 12.1  | <b>25.9</b> |
| Gymnastics                 | 5.9   | 4.0   | 7.1   | 11.4  | <b>7.4</b>  |
| Swimming                   | 18.8  | 9.1   | 9.1   | 14.4  | <b>12.6</b> |
| Marital arts               | 9.9   | 8.1   | 3.9   | 6.1   | <b>6.6</b>  |
| Boxing                     | 5.9   | 0.0   | 0.0   | 0.0   | <b>1.2</b>  |
| Table tennis               | 7.9   | 11.1  | 7.8   | 2.3   | <b>7.0</b>  |
| Billiards                  | 1.0   | 0.0   | 0.6   | 0.0   | <b>0.4</b>  |
| Golf                       | 1.0   | 0.0   | 0.0   | 0.0   | <b>0.2</b>  |
| Badminton                  | 3.0   | 0.0   | 2.6   | 3.8   | <b>2.5</b>  |
| Baseball                   | 0.0   | 1.0   | 0.0   | 0.0   | <b>0.2</b>  |
| Softball                   | 0.0   | 1.0   | 0.0   | 0.0   | <b>0.2</b>  |
| Wrestling or judo          | 4.0   | 0.0   | 0.6   | 0.0   | <b>1.0</b>  |
| Others                     | 37.6  | 47.5  | 61.0  | 68.2  | <b>55.3</b> |

Table 4-4-1-4-27 Diagnosed with a disease in the past five years (%)

| Gender       | Age group (year) | Subjects (n) | Yes         | No          |
|--------------|------------------|--------------|-------------|-------------|
| M            | 60~64            | 101          | 59.4        | 40.6        |
|              | 65~69            | 99           | 77.8        | 22.2        |
| F            | 60~64            | 154          | 58.4        | 41.6        |
|              | 65~69            | 132          | 67.4        | 32.6        |
| <b>Total</b> |                  | <b>486</b>   | <b>65.0</b> | <b>35.0</b> |

Table 4-4-1-4-28 Diseases diagnosed in the past five years (%)

| Gender<br>Age group (years) | M     |       | F     |       | Total       |
|-----------------------------|-------|-------|-------|-------|-------------|
|                             | 60~64 | 65~69 | 60~64 | 65~69 |             |
| Disease-stricken subjects   | 60    | 77    | 90    | 89    | <b>316</b>  |
| Cancer                      | 3.3   | 3.9   | 4.4   | 2.2   | <b>3.5</b>  |
| Cardiovascular diseases     | 15.0  | 13.0  | 14.4  | 18.0  | <b>15.2</b> |
| Respiratory diseases        | 6.7   | 9.1   | 3.3   | 5.6   | <b>6.0</b>  |
| Accidental injury           | 3.3   | 6.5   | 1.1   | 4.5   | <b>3.8</b>  |
| Digestive system            | 8.3   | 7.8   | 14.4  | 12.4  | <b>11.1</b> |
| Hypertension                | 53.3  | 54.5  | 54.4  | 49.4  | <b>52.8</b> |
| Endocrine diseases          | 10.0  | 1.3   | 7.8   | 1.1   | <b>4.7</b>  |
| Urinary or reproductive     | 8.3   | 7.8   | 5.6   | 2.2   | <b>5.7</b>  |
| Diabetes                    | 11.7  | 14.3  | 16.7  | 13.5  | <b>14.2</b> |
| Others                      | 16.7  | 35.1  | 36.7  | 39.3  | <b>33.2</b> |

Table 4-4-1-4-29 Had heard of or had participated in the “Physical Fitness test” (%)

| Gender       | Age group (year) | Subjects (n) | Heard of    | Participated in |
|--------------|------------------|--------------|-------------|-----------------|
| M            | 60~64            | 101          | 26.7        | 11.9            |
|              | 65~69            | 99           | 19.2        | 12.1            |
| F            | 60~64            | 154          | 26.6        | 26.0            |
|              | 65~69            | 132          | 28.8        | 28.8            |
| <b>Total</b> |                  | <b>486</b>   | <b>25.7</b> | <b>21.0</b>     |

Table 4-4-1-4-30 Definition or meaning of the “Physical Fitness Test” (%)

| Gender       | Age group (year) | Subjects (n) | Meaningless | Understand physical fitness status | Understand the importance of physical exercise | Increase scientific knowledge of physical fitness |
|--------------|------------------|--------------|-------------|------------------------------------|------------------------------------------------|---------------------------------------------------|
| M            | 60~64            | 101          | 3.0         | 94.1                               | 40.6                                           | 31.7                                              |
|              | 65~69            | 99           | 1.0         | 98.0                               | 50.5                                           | 20.2                                              |
| F            | 60~64            | 154          | 5.8         | 95.5                               | 38.3                                           | 18.8                                              |
|              | 65~69            | 132          | 8.3         | 92.4                               | 36.4                                           | 13.6                                              |
| <b>Total</b> |                  | <b>486</b>   | <b>4.9</b>  | <b>94.9</b>                        | <b>40.7</b>                                    | <b>20.4</b>                                       |

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### 4.4.3 Anthropometric Measurements

Table 4-4-2-4-31 Height (cm)

| Gender | Age group (year) | n   | Mean  | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 164.5 | 5.55 | 155.0          | 157.1           | 160.6           | 163.8           | 168.5           | 173.0           | 176.9           |
|        | 65~69            | 99  | 163.1 | 6.29 | 149.5          | 155.5           | 159.7           | 163.0           | 167.7           | 170.5           | 174.4           |
| F      | 60~64            | 154 | 152.7 | 5.26 | 143.2          | 145.1           | 149.6           | 152.4           | 155.7           | 159.3           | 163.8           |
|        | 65~69            | 132 | 150.7 | 5.65 | 140.8          | 143.4           | 147.0           | 150.3           | 154.8           | 158.2           | 162.3           |

Table 4-4-2-4-32 Sitting height (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 88.7 | 2.83 | 82.7           | 85.2            | 87.0            | 88.6            | 90.1            | 92.4            | 95.2            |
|        | 65~69            | 99  | 87.4 | 3.62 | 78.3           | 82.8            | 86.0            | 88.0            | 89.8            | 91.7            | 93.7            |
| F      | 60~64            | 154 | 82.7 | 2.88 | 77.0           | 79.3            | 80.6            | 82.5            | 84.6            | 86.6            | 88.6            |
|        | 65~69            | 132 | 81.3 | 3.17 | 74.2           | 77.6            | 79.5            | 81.3            | 83.6            | 85.0            | 87.2            |

Table 4-4-2-4-33 Foot length (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 24.3 | 1.05 | 22.4           | 22.9            | 23.4            | 24.4            | 25.1            | 25.8            | 26.0            |
|        | 65~69            | 99  | 24.1 | 1.03 | 22.0           | 23.0            | 23.4            | 24.2            | 25.0            | 25.4            | 26.0            |
| F      | 60~64            | 154 | 22.5 | 1.09 | 20.3           | 21.1            | 21.7            | 22.6            | 23.2            | 23.8            | 24.5            |
|        | 65~69            | 132 | 22.3 | 0.89 | 20.7           | 21.2            | 21.6            | 22.3            | 22.9            | 23.6            | 24.0            |

Table 4-4-2-4-34 Weight (kg)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 63.0 | 9.15 | 46.0           | 51.3            | 57.2            | 63.1            | 68.5            | 75.6            | 82.3            |
|        | 65~69            | 99  | 62.2 | 9.90 | 44.8           | 50.1            | 55.4            | 61.2            | 68.4            | 74.2            | 85.4            |
| F      | 60~64            | 154 | 56.5 | 8.87 | 41.1           | 45.9            | 50.5            | 56.1            | 62.5            | 68.3            | 75.9            |
|        | 65~69            | 132 | 55.4 | 8.57 | 37.4           | 44.0            | 49.6            | 55.6            | 61.2            | 66.2            | 72.4            |

Table 4-4-2-4-35 BMI

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 23.3 | 3.01 | 17.0           | 19.4            | 21.4            | 23.3            | 25.5            | 26.9            | 29.2            |
|        | 65~69            | 99  | 23.4 | 3.27 | 16.5           | 19.7            | 21.7            | 23.4            | 25.0            | 27.5            | 30.8            |
| F      | 60~64            | 154 | 24.2 | 3.49 | 18.1           | 20.5            | 21.9            | 23.9            | 26.6            | 29.0            | 32.1            |
|        | 65~69            | 132 | 24.4 | 3.65 | 18.1           | 19.1            | 21.9            | 24.4            | 26.9            | 29.1            | 32.0            |

Table 4-4-2-4-36 Weight status (%)

| Gender | Age group (year) | Subjects (n) | Underweight | Normal      | Overweight  | Obese       |
|--------|------------------|--------------|-------------|-------------|-------------|-------------|
| M      | 60~64            | 101          | 7.9         | 51.5        | 36.6        | 4.0         |
|        | 65~69            | 99           | 7.1         | 55.6        | 30.3        | 7.1         |
|        | <b>Total</b>     | <b>200</b>   | <b>7.5</b>  | <b>53.5</b> | <b>33.5</b> | <b>5.5</b>  |
| F      | 60~64            | 154          | 3.9         | 47.4        | 34.4        | 14.3        |
|        | 65~69            | 132          | 4.5         | 41.7        | 38.6        | 15.2        |
|        | <b>Total</b>     | <b>286</b>   | <b>4.2</b>  | <b>44.8</b> | <b>36.4</b> | <b>14.7</b> |

Table 4-4-2-4-37 Chest circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 91.4 | 6.25 | 78.5           | 82.6            | 87.8            | 90.7            | 95.1            | 100.5           | 102.9           |
|        | 65~69            | 99  | 89.6 | 6.02 | 80.1           | 81.9            | 85.5            | 89.3            | 94.0            | 98.0            | 100.5           |
| F      | 60~64            | 154 | 90.6 | 7.68 | 76.3           | 81.0            | 85.0            | 90.5            | 96.2            | 101.1           | 105.7           |
|        | 65~69            | 132 | 90.4 | 8.19 | 73.5           | 79.7            | 84.5            | 90.0            | 96.0            | 100.9           | 106.0           |

Table 4-4-2-4-38 Waist circumference (cm)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 85.5 | 8.73  | 65.7           | 73.7            | 80.3            | 86.7            | 90.3            | 96.8            | 102.0           |
|        | 65~69            | 99  | 86.4 | 9.89  | 66.0           | 72.0            | 82.0            | 87.0            | 92.8            | 98.3            | 104.5           |
| F      | 60~64            | 154 | 85.0 | 9.76  | 68.0           | 73.0            | 78.4            | 84.1            | 91.0            | 99.5            | 105.5           |
|        | 65~69            | 132 | 86.4 | 10.40 | 65.8           | 72.5            | 79.6            | 87.0            | 93.4            | 99.5            | 104.5           |

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Table 4-4-2-4-39 Hip circumference (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 90.6 | 5.08 | 81.3           | 83.4            | 87.0            | 90.8            | 94.1            | 97.0            | 99.2            |
|        | 65~69            | 99  | 90.2 | 5.63 | 79.5           | 83.0            | 86.4            | 90.0            | 93.2            | 97.5            | 102.5           |
| F      | 60~64            | 154 | 92.3 | 6.66 | 81.2           | 85.0            | 88.0            | 91.3            | 96.0            | 101.5           | 109.2           |
|        | 65~69            | 132 | 91.7 | 7.35 | 80.0           | 82.3            | 87.0            | 92.0            | 95.0            | 101.0           | 111.0           |

Table 4-4-2-4-40 Waist-Hip Ratio (WHR)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 0.943 | 0.061 | 0.813          | 0.864           | 0.900           | 0.957           | 0.985           | 1.011           | 1.051           |
|        | 65~69            | 99  | 0.956 | 0.064 | 0.817          | 0.861           | 0.927           | 0.965           | 0.994           | 1.031           | 1.078           |
| F      | 60~64            | 154 | 0.920 | 0.072 | 0.799          | 0.832           | 0.867           | 0.922           | 0.959           | 1.029           | 1.061           |
|        | 65~69            | 132 | 0.942 | 0.076 | 0.792          | 0.833           | 0.884           | 0.956           | 0.991           | 1.031           | 1.080           |

Table 4-4-2-4-41 Shoulder width (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 37.4 | 1.87 | 33.5           | 34.9            | 36.1            | 37.7            | 38.5            | 39.7            | 41.0            |
|        | 65~69            | 99  | 37.3 | 1.76 | 34.0           | 35.0            | 36.0            | 37.8            | 38.4            | 39.3            | 40.0            |
| F      | 60~64            | 154 | 34.0 | 1.60 | 31.1           | 31.8            | 32.9            | 34.1            | 35.0            | 36.3            | 37.0            |
|        | 65~69            | 132 | 33.6 | 1.72 | 29.8           | 31.6            | 32.3            | 33.5            | 34.9            | 35.9            | 36.7            |

Table 4-4-2-4-42 Pelvis width (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 27.9 | 1.57 | 25.4           | 26.2            | 26.7            | 27.7            | 29.0            | 30.0            | 31.1            |
|        | 65~69            | 99  | 27.9 | 1.50 | 24.9           | 26.0            | 27.0            | 28.0            | 28.8            | 29.7            | 30.5            |
| F      | 60~64            | 154 | 28.2 | 1.73 | 25.5           | 26.2            | 27.0            | 28.1            | 29.3            | 30.0            | 31.7            |
|        | 65~69            | 132 | 28.0 | 1.71 | 24.9           | 26.1            | 27.0            | 27.8            | 29.2            | 30.0            | 31.3            |

Table 4-4-2-4-43 Upper arm skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 12.3 | 4.53 | 4.6            | 6.5             | 9.0             | 12.0            | 15.0            | 18.0            | 21.8            |
|        | 65~69            | 99  | 12.7 | 5.30 | 5.0            | 7.0             | 9.0             | 12.0            | 15.5            | 20.0            | 23.5            |
| F      | 60~64            | 154 | 22.2 | 6.06 | 12.8           | 15.0            | 18.3            | 21.5            | 25.8            | 30.0            | 35.0            |
|        | 65~69            | 132 | 20.7 | 6.07 | 8.9            | 12.2            | 16.8            | 20.2            | 24.9            | 28.2            | 32.0            |

Table 4-4-2-4-44 Subscapular skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 100 | 20.6 | 6.91 | 7.5            | 10.1            | 16.6            | 20.0            | 26.0            | 30.0            | 34.0            |
|        | 65~69            | 99  | 20.5 | 7.57 | 6.5            | 9.5             | 16.0            | 20.5            | 26.0            | 30.0            | 35.0            |
| F      | 60~64            | 154 | 23.7 | 7.77 | 9.3            | 14.8            | 18.9            | 23.0            | 28.5            | 34.0            | 41.4            |
|        | 65~69            | 132 | 22.3 | 7.81 | 8.0            | 12.2            | 16.6            | 21.3            | 27.8            | 33.0            | 38.0            |

Table 4-4-2-4-45 Abdominal skinfold thickness (mm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 100 | 23.2 | 7.91 | 5.5            | 12.6            | 19.0            | 23.3            | 29.1            | 33.4            | 33.4            |
|        | 65~69            | 99  | 24.1 | 9.15 | 6.0            | 10.0            | 18.0            | 24.5            | 29.0            | 37.0            | 37.0            |
| F      | 60~64            | 154 | 31.5 | 8.07 | 16.0           | 21.5            | 26.0            | 32.0            | 37.0            | 42.0            | 42.0            |
|        | 65~69            | 132 | 31.1 | 8.41 | 9.5            | 19.7            | 27.0            | 32.5            | 36.4            | 40.9            | 40.9            |

Table 4-4-2-4-46 Percent body fat (%)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 100 | 19.8 | 5.05 | 10.2           | 13.0            | 16.7            | 19.3            | 23.0            | 26.5            | 28.8            |
|        | 65~69            | 99  | 20.0 | 5.73 | 9.7            | 12.3            | 15.5            | 19.8            | 24.1            | 28.1            | 30.1            |
| F      | 60~64            | 154 | 30.2 | 7.43 | 17.0           | 21.9            | 25.3            | 29.1            | 35.0            | 39.9            | 46.4            |
|        | 65~69            | 132 | 28.5 | 7.36 | 14.6           | 19.6            | 23.7            | 27.4            | 33.6            | 38.4            | 42.7            |

Table 4-4-2-4-47 Lean body mass (kg)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 100 | 50.2 | 5.81 | 40.6           | 42.8            | 46.1            | 50.4            | 54.0            | 57.8            | 62.4            |
|        | 65~69            | 99  | 49.3 | 5.50 | 39.2           | 42.7            | 45.5            | 48.7            | 53.1            | 56.3            | 60.8            |
| F      | 60~64            | 154 | 39.0 | 4.63 | 31.2           | 33.1            | 35.9            | 38.6            | 42.3            | 45.1            | 49.0            |
|        | 65~69            | 132 | 39.1 | 4.41 | 31.0           | 33.3            | 36.0            | 38.8            | 42.2            | 45.1            | 48.0            |

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### 4.4.4 Physiological Function

Table 4-4-2-4-48 Resting pulse (times/min)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 76.0 | 12.05 | 54             | 62              | 68              | 74              | 84              | 92              | 104             |
|        | 65~69            | 99  | 76.4 | 10.15 | 60             | 62              | 68              | 76              | 82              | 90              | 94              |
| F      | 60~64            | 154 | 77.3 | 9.72  | 60             | 65              | 72              | 76              | 82              | 90              | 97              |
|        | 65~69            | 132 | 75.9 | 9.22  | 60             | 64              | 70              | 76              | 82              | 89              | 94              |

Table 4-4-2-4-49 Systolic pressure (mmHg)

| Gender | Age group (year) | n   | Mean  | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|-------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 131.7 | 16.53 | 108.0          | 110.0           | 120.0           | 130.0           | 140.0           | 150.0           | 175.6           |
|        | 65~69            | 99  | 132.1 | 16.17 | 104.0          | 110.0           | 120.0           | 130.0           | 144.0           | 154.0           | 164.0           |
| F      | 60~64            | 154 | 130.8 | 20.36 | 96.0           | 107.0           | 115.5           | 130.0           | 144.0           | 159.0           | 176.7           |
|        | 65~69            | 132 | 130.9 | 21.19 | 100.0          | 106.0           | 112.0           | 130.0           | 144.0           | 160.0           | 180.0           |

Table 4-4-2-4-50 Diastolic pressure (mmHg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 81.9 | 9.77  | 68.0           | 70.0            | 74.0            | 80.0            | 90.0            | 96.0            | 103.8           |
|        | 65~69            | 99  | 78.1 | 9.39  | 64.0           | 68.0            | 70.0            | 80.0            | 84.0            | 90.0            | 100.0           |
| F      | 60~64            | 154 | 78.6 | 10.41 | 60.0           | 66.0            | 70.0            | 78.0            | 84.0            | 90.0            | 104.7           |
|        | 65~69            | 132 | 74.9 | 9.77  | 60.0           | 60.0            | 70.0            | 74.0            | 80.0            | 89.4            | 94.1            |

Table 4-4-2-4-51 Pressure difference (mmHg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 49.9 | 13.66 | 30.0           | 34.4            | 40.0            | 48.0            | 58.0            | 69.6            | 80.0            |
|        | 65~69            | 99  | 54.0 | 12.93 | 30.0           | 38.0            | 44.0            | 55.0            | 62.0            | 72.0            | 82.0            |
| F      | 60~64            | 154 | 52.2 | 16.31 | 26.0           | 32.0            | 40.0            | 50.0            | 62.0            | 72.0            | 82.8            |
|        | 65~69            | 132 | 56.1 | 18.74 | 28.0           | 35.3            | 42.5            | 54.5            | 68.0            | 75.0            | 100.1           |

Table 4-4-2-4-52 Vital capacity (ml)

| Gender | Age group (year) | n   | Mean   | SD     | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|--------|--------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 99  | 2890.4 | 654.02 | 1295           | 2100            | 2425            | 2920            | 3320            | 3710            | 4040            |
|        | 65~69            | 98  | 2525.7 | 648.03 | 1324           | 1802            | 2004            | 2515            | 2975            | 3457            | 3799            |
| F      | 60~64            | 154 | 1932.7 | 437.60 | 1098           | 1390            | 1650            | 1918            | 2186            | 2548            | 2742            |
|        | 65~69            | 132 | 1783.6 | 427.88 | 974            | 1303            | 1521            | 1710            | 2079            | 2356            | 2655            |

Table 4-4-2-4-53 Vital capacity/weight (ml/kg)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 49.3 | 25.66 | 22.6           | 35.7            | 40.7            | 45.3            | 53.3            | 60.3            | 78.8            |
|        | 65~69            | 99  | 42.4 | 16.76 | 23.0           | 26.4            | 33.0            | 40.7            | 49.6            | 55.1            | 62.9            |
| F      | 60~64            | 154 | 35.0 | 9.43  | 19.1           | 23.1            | 28.8            | 34.4            | 40.2            | 48.5            | 55.5            |
|        | 65~69            | 132 | 32.7 | 8.00  | 17.1           | 22.2            | 27.5            | 31.3            | 37.9            | 43.2            | 49.1            |

#### 4.4.5 Physical Fitness

Table 4-4-2-4-54 Grip strength (kg)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 37.1 | 7.78 | 12.7           | 28.9            | 32.5            | 37.7            | 41.7            | 46.8            | 51.0            |
|        | 65~69            | 97  | 33.1 | 7.98 | 14.0           | 21.2            | 29.1            | 34.4            | 38.3            | 42.6            | 46.9            |
| F      | 60~64            | 154 | 22.2 | 4.59 | 13.6           | 16.3            | 18.8            | 21.8            | 25.3            | 28.3            | 32.3            |
|        | 65~69            | 127 | 20.5 | 4.38 | 11.8           | 14.4            | 17.3            | 20.7            | 23.3            | 26.1            | 29.3            |

Table 4-4-2-4-55 Sit and reach (cm)

| Gender | Age group (year) | n   | Mean | SD   | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 99  | -0.6 | 9.24 | -20.0          | -14.5           | -7.6            | 0.2             | 5.9             | 11.7            | 15.9            |
|        | 65~69            | 95  | -4.2 | 9.08 | -20.2          | -16.6           | -11.0           | -3.8            | 1.3             | 9.0             | 16.6            |
| F      | 60~64            | 153 | 7.7  | 8.31 | -11.5          | -2.9            | 1.9             | 9.2             | 13.6            | 17.3            | 22.5            |
|        | 65~69            | 129 | 5.0  | 8.03 | 12.1           | -5.1            | -0.1            | 5.6             | 9.2             | 15.2            | 19.8            |

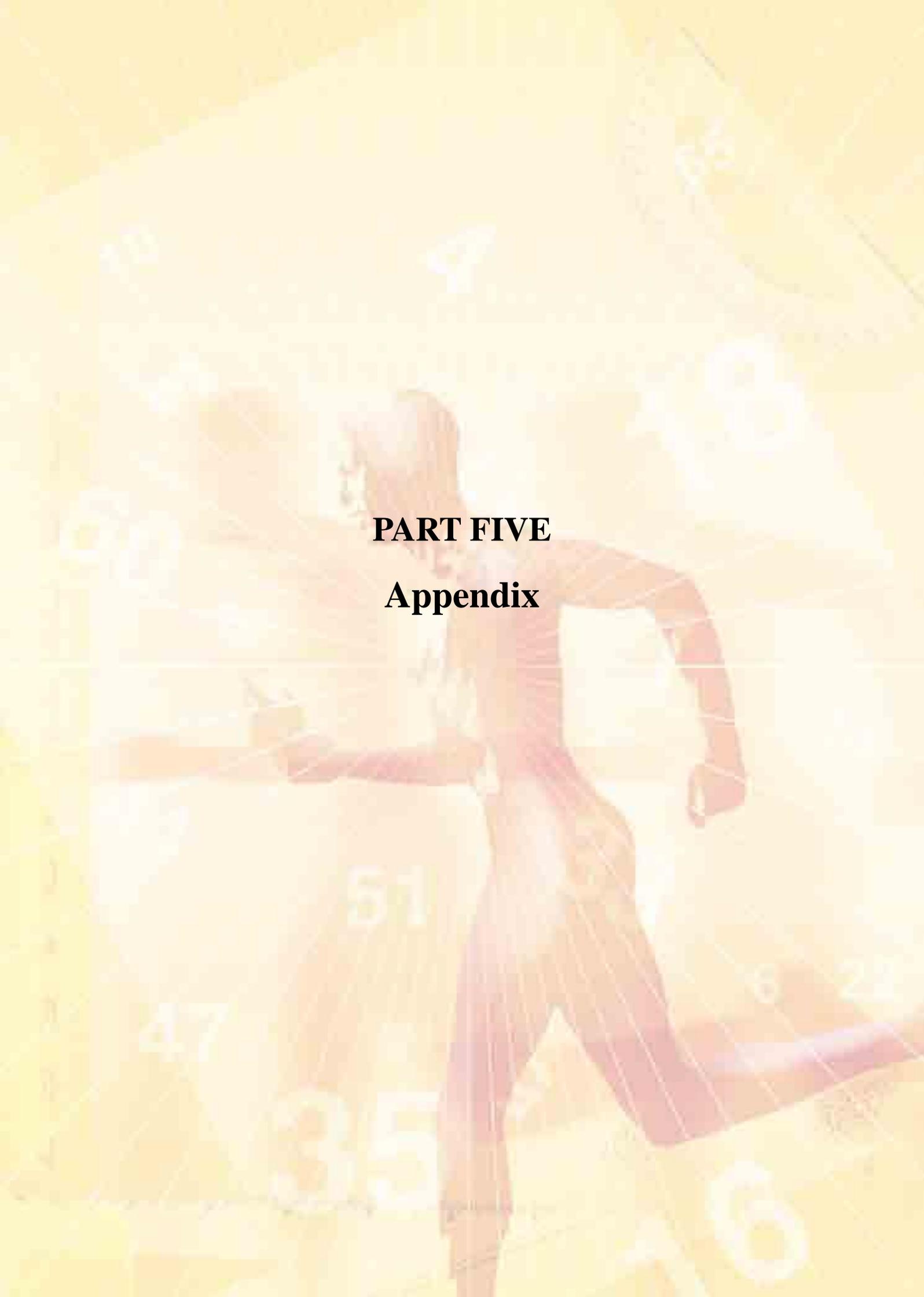
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Table 4-4-2-4-56 Respond time (sec)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 0.51 | 0.163 | 0.47           | 0.38            | 0.42            | 0.47            | 0.54            | 0.64            | 0.85            |
|        | 65~69            | 97  | 0.55 | 0.167 | 0.52           | 0.41            | 0.44            | 0.52            | 0.58            | 0.71            | 0.88            |
| F      | 60~64            | 154 | 0.57 | 0.138 | 0.55           | 0.44            | 0.48            | 0.55            | 0.62            | 0.74            | 0.93            |
|        | 65~69            | 132 | 0.68 | 0.196 | 0.63           | 0.48            | 0.55            | 0.63            | 0.76            | 0.93            | 1.20            |

Table 4-4-2-4-57 One foot stands with eyes closed (sec)

| Gender | Age group (year) | n   | Mean | SD    | P <sub>3</sub> | P <sub>10</sub> | P <sub>25</sub> | P <sub>50</sub> | P <sub>75</sub> | P <sub>90</sub> | P <sub>97</sub> |
|--------|------------------|-----|------|-------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| M      | 60~64            | 101 | 10.6 | 11.95 | 3.0            | 3.0             | 4.5             | 6.0             | 11.0            | 18.0            | 56.4            |
|        | 65~69            | 96  | 8.1  | 8.01  | 2.0            | 3.0             | 3.0             | 6.0             | 10.0            | 15.3            | 29.3            |
| F      | 60~64            | 154 | 8.4  | 7.59  | 2.0            | 3.0             | 4.0             | 6.0             | 10.0            | 17.5            | 30.0            |
|        | 65~69            | 127 | 6.1  | 5.90  | 2.0            | 2.0             | 3.0             | 4.0             | 7.0             | 12.0            | 19.2            |

A woman in a red dress is running across a yellow background. The background is filled with various numbers in white and yellow, some of which are slightly blurred. The woman is in the center of the frame, moving from left to right. Her dress is a vibrant red, and she appears to be in motion, with her arms and legs in a running stride. The overall scene is bright and energetic.

**PART FIVE**

**Appendix**

PART FIVE

Appendix

Appendix 1: Quality Control

Quality control was one of the core aspects of physical fitness monitoring. Not only was it the foundation to assure the work of physical fitness monitoring, but it was also required for the smooth completion of the study. More importantly, the content of the quality control system and the methodology to implement the system was the working guide of this study.

The quality control system of 2005 Physical Fitness Study of Macao Citizens used practical methods in all sections of the study. From organization, management, programming, procedures to conclusion, the accuracy of results were assured. The main idea of the system included managing organization control, study procedure control and study results control. The implementing procedures and working steps included pre-study control, mid-study control and post-study control. (refer to figure-1)

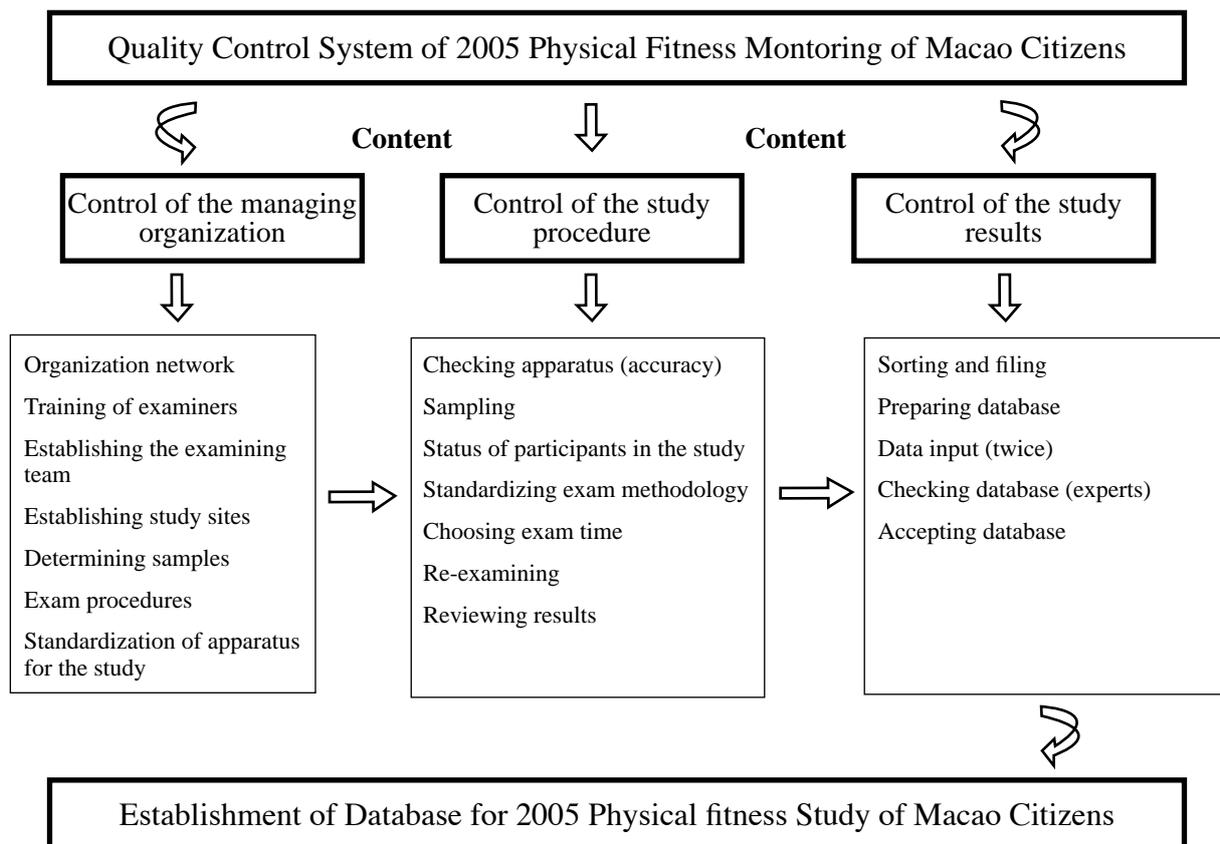


Figure-1 Quality control system and implementation procedures for 2005 Physical Fitness Study of Macao Citizens

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## **1. Quality Control of Organization Management**

### **1.1 Organization Network**

#### 1) Constitution

The organization network of 2005 Physical Fitness Study of Macao Citizens was made up of the Physical Fitness Monitor Center for Macao Citizens and other study sites. The network was comprised of:

The leading team: Sponsored by Macao Sport Development Board and coordinated by related departments.

Physical Fitness Monitor Center for Macao Citizens: at the Sports Medicine Center of the Macao Sport Development Board.

Sampling sites: Kindergartens, schools, working units and senior centers were randomly stratified as sampling sites.

#### 2) Responsibilities and tasks

a) Tasks of the leading team: 1. responsible for the coordinating work among related Macao SAR government departments; 2. led and organize to formulate the implementing plan of the study; 3. made decisions for any important events in 2005 Physical Fitness Study of Macao Citizens.

b) Tasks of the Physical Fitness Monitor Center for Macao Citizens: 1. responsible for formulating the work plan and detailed procedures for 2005 Physical Fitness Study of Macao Citizens with the Research Institute of Sports Science under the General Administration of Sport; 2. confirmed the apparatus needed for the study; 3. created a data book, a working manual, and a software for data input; 4. trained the subjects and examiners; 5. established the examining team; 6. organized and coordinated the study samples; 7. checked, accepted, accumulated and calculated the study results; 8. examined, analyzed and completed the Physical Fitness Report of Macao SAR Citizens and research report etc.; 9. the Physical Fitness Monitor Center established a research group and an examining team: the research group was made up of technical experts from the Physical Fitness Monitor Center and the Research Institute of Sports Science under the General Administration of Sport.

c) Functions of study sites: 1. complemented the sampling and testing work of the monitor center; 2. organized the subjects, confirmed the study plan, and organized and managed the study locations.

### **1.2 Establishment and training of examining team**

#### 1) Training of examiners

Before the study, examiners were trained by the Physical Fitness Monitor Center for Macao Citizens and the Research Institute of Sports Science under the General Administration

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of Sport. In 2004, the Physical Fitness Monitor Center for Macao Citizens were responsible for the organization work and time arrangements of the study. The Research Institute of Sports Science under the General Administration of Sport completed the training textbook called “Physical Fitness Study and Evaluation” and was responsible for teaching the theoretical courses and technical training.

Examiners were qualified to participate in the study after two rounds of training and after passing an exam. The examination included two parts, a theoretical part and a practical part.

Examination of the theoretical part was in questionnaire form. Examination questions were randomly selected from the test paper of the national physical fitness monitoring examination and the examination must be completed within 100 minutes.

During the practical part of the exam, each examinee needed to monitor four to six study indexes randomly.

Examinees who passed both parts of the examination were awarded an examiner training certificate for 2005 Physical Fitness Study of Macao Citizens.

### 2) Establishment of study team

Three study teams were established based on the need of the study. Study examiners were required to have the training certificate of 2005 Physical Fitness Study of Macao Citizens. Every study team member needed to fill out the registration form for physical fitness study team members. (table 1).

Study team members were divided into three groups based on the “three-fixing principle”, namely study indexes, apparatus, and study examiner. The detailed requirement was as follows:

a) Every study team was divided into five major groups, namely: questionnaire group, anthropometrics group, physiological function group, physical fitness group, and health group.

b) Every team included one captain and at least 25 team members. Notably, at least 4 team members were females, 3 members were in charge of the questionnaire, and 2 members were in charge of checking data and one professional medical personnel.

Table 1 Registration form for study team members of the 2005 Physical Fitness Study of Macao Citizens

Study team :

| Name | Gender | Age | Working Place | Degree | Major | Study Indexes/Study Content | Remark |
|------|--------|-----|---------------|--------|-------|-----------------------------|--------|
|      |        |     |               |        |       |                             |        |
|      |        |     |               |        |       |                             |        |
|      |        |     |               |        |       |                             |        |

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### 3) Tasks

a) Captain: was in charge of organizing and coordinating work and technical supervision of the team to assure the quality of the study project.

b) Professional team: was responsible to complete the testing. Weight, waist circumference and skinfold thickness were tested by team members of the same gender.

c) Checking team: was in charge of checking the quality of study location, and accepting, sorting and filing data.

d) Medical personnel: was in charge of all medical services at the study location and attended to any accidents on time.

### 1.3 Establishment of study sites

The Physical Fitness Monitor Center for Macao Citizens was responsible for the establishment of study sites.

The Physical Fitness Monitor Center for Macao Citizens and study teams were liable for collecting, sorting and accumulating the information regarding the study sites.

### 1.4 Study procedures

Study procedures were one of the major factors that impacted the quality of the study. Therefore, every study team member was to complete their study work strictly in accordance with the study procedures.

Study procedures were carried out as follows: “questionnaire functional (and health) anthropometrics physical fitness” (figure 2)

If it was difficult to complete the study work with the above procedures, the study on health, anthropometrics and physical fitness could be carried out interchangeably, but the examination of heart rate (pulse) must be examined first.

Principally speaking, every study team should have tested no more than 200 subjects per working day.

Data was collected by the checking group and were checked while collecting. (Details were noted in “**Quality Control during the Study Process**”)

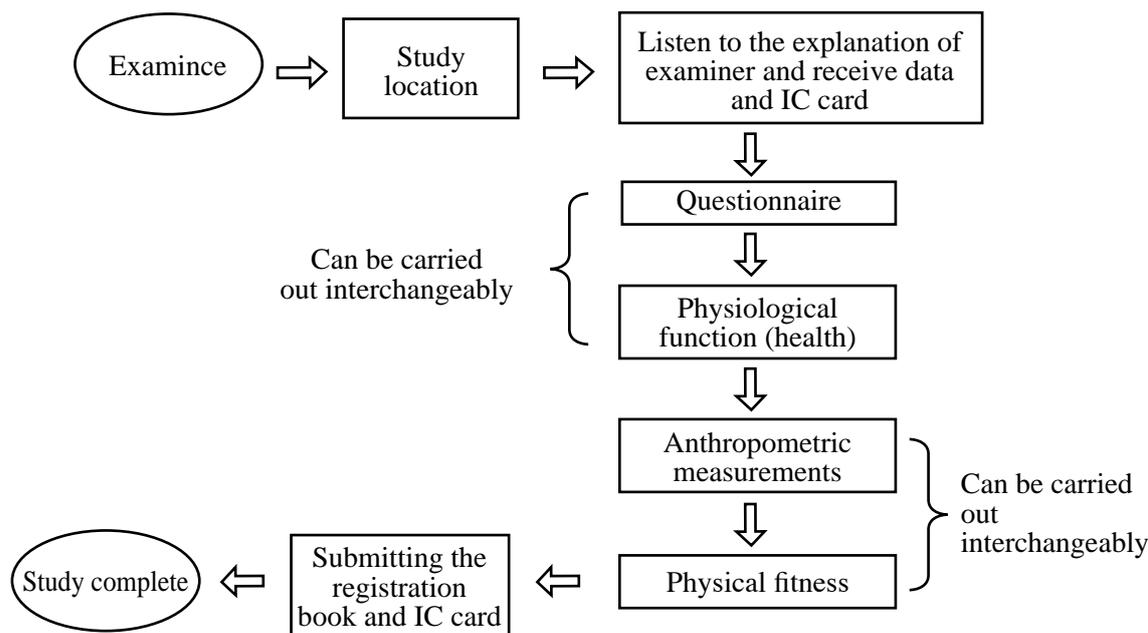


Figure-2 Workflow of the study process

## 2. Quality Control during the Study Process

### 2.1 Preparation before study

#### 1) Apparatus preparation

a) The apparatus used for the 2005 Physical Fitness Study of Macao Citizens should be the same as the apparatus used in the Mainland Residents' Physique Study.

b) All the apparatus were put in place before the study project and were completely installed, adjusted, and attempted for transportation.

c) Quantity of consumable goods (such as spirometer breathing cups and alcohol) was prepared in advance.

#### 2) Apparatus check and adjustment

##### a) Stadiometer

Study team members checked the stadiometer by using a standard 150 cm steel ruler. First, they placed the "0" point of the steel ruler at the bottom of the stadiometer and placed the steel ruler against the stadiometer. The measure board was then slid down to the top of the steel ruler. The value of the stadiometer and the reading of the steel ruler were compared; a value below 0.1 cm was considered a pass.

##### b) Electronic digital scale

Study team members switched on the scale and waited for it to warm-up. A 10 kg, 20 kg and 30kg standard weight or equivalent object was put onto the scale for calibration. If the value

shown on the screen of the scale was the same as the weight, it meant that the apparatus was precise. Afterwards, a 100g standard weight was put on the scale for calibration. If the figure shown on the screen increased by 0.1 kg, it meant that the sensitivity of the scale met the requirement.

c) Measuring tape

The measuring tape was compared with a steel ruler, if the error per meter was less than 0.2 cm, the measuring tape could be used.

d) Bare L-square

The two angles should meet at the “0” mark. A standard steel ruler was used to check the mark and make sure the error was less than 0.1 cm.

e) Electronic spirometer

Study team members turned on the spirometer and waited for it to be in working state. Then, the spirometer was checked with a 2000 ml gas-measuring tube. The plunger was pulled to the maximum mark, and was then connected with the spirometer. It was pushed slowly for the gas to enter the spirometer (figure 3). If the value of the spirometer was in the range between 1960ml and 2040ml, the spirometer was acceptable.



Figure-3 Checking an electronic spirometer

f) Stopwatch

The stopwatch was checked according to Beijing Time. If the stopwatch value was within 0.2 second per minute, the stopwatch was precise and acceptable.

g) Sphygmomanometer

The plastic ball, plastic tube and gas valve was checked whether or not it can be used normally.

h) Skinfold calipers

“0”mark was adjusted: The handle of the gauge was squeezed and checked if the needle points at the “0” mark. If not, the dial was then turned slowly adjusting it to the “0” mark.

Pressure check: A standard weight of 200 g was hanged on the small hole at the lower part of the caliper. The lower and upper parts of the caliper were leveled for balance. If the pressure was within the range of 15 mm to 25 mm (red area), then the pressure of the caliper met the requirement and there



Figure-4 Checking the skinfold thickness caliper

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was no need for adjustment. If the pressure was above 25 mm, then pressure was slightly too low. To adjust this, the standard weight was removed and the dial was turned to the left. If the hand pointed below 15 mm, then the pressure was slightly too high. To adjust this, the weight was removed and the dial was turned to the right, aiming between the 15 mm and 25 mm range (figure 4).

### 3) Study location preparation

Before the study, the study teams picked Mong Ha Stadium as the indoor testing area. This testing area was made up of several rooms, which included the examination registration hall, questionnaire room, anthropometrics measuring room (one for male and one for female), physiological function testing room (included a room for examining heart rate, pulse, blood pressure, and vital capacity), and physical fitness testing room (3 rooms in total). Each room had an area of about 100 to 150 square meters. The room was bright and spacious with a flat floor to place apparatus for the study, and for organizing and allocating participants.

Lian Feng court (400 m standard track-and-field ground) was selected as the study location to test the running events.

## 2.2 Quality control during the study

### 1) Requirement for examiners

- a) Examiners needed to arrive at the study location 30 minutes in advance to do preparation work, such as checking & calibrating the apparatus.
- b) Examiners were to explain the test requirements of the examination to the examinee.
- c) Examiner needed to review the results in time, in case a re-test was needed.
- d) Examiner needed to follow all the requirements of the study strictly and could not intentionally amend the content, method or quality of the study.

### 2) Requirement for examinees

- a) Examinees were to avoid strenuous exercise and heavy labor work 12 hours before the study.
- b) Examinees needed to keep the study location quiet.
- c) Examinees needed to be serious and try their best to complete every examination.
- d) Dress code: sportswear and sports shoes. During anthropometrics measuring, male examinees were to wear shorts and female examinees were to wear shorts, tank top or short-sleeve shirt.
- e) Examinees needed to do warm-up exercises before testing and stretching exercise after the examination to prevent injury.
- f) Principally speaking, every examinee was to complete all examinations in one day. Even under special circumstances, all examinations should be completed within a week. Examinations of students needed to be completed within two days.

### 3) Verifying data entry

Each study team appointed 2 or 3 professional members as checkers responsible for

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checking the results of the examination. The checkers should be familiar with the project and be quite diligent.

(1) All-round examination

a) After the examination, checkers needed to check the classification number, questionnaire and the test results from the data file. Meanwhile, recording method and writing also needed to be checked to ensure the clearness. As to those who did not meet the requirements, checkers needed to point out immediately to the examiner and corrected it on the spot. If there was any data missing, wrong or suspicious found in the file, a make-up examination or re-examination was carried out to make sure the value was complete, right and reliable.

b) In accordance with the requirement of “Re-examination Reference Book” (See “Working Manual for 2005 Physical Fitness Study of Macao Citizens”), all study results needed to be checked one by one. If the anthropometrics results and physiological function results were over the range according to the “Re-examination Reference Book” and it was not marked “re-examination” or possible reasons like “handicapped” in the data file, the index was regarded as suspicious and needed to be re-examined. The original examiner needed to re-examine on the spot. After re-examination, the new value was recorded if the old was proved to be wrong or the word “re-examination” was to be written before the data was entered.

c) If the quality index was above the “re-examination reference book”, the index was regarded as suspicious. Then, a logic test needed to be conducted in conjunction with other indexes, to assure the suspicious data, and to avoid wrong recording or error. Generally speaking, it was not necessary to conduct the re-examination. If it was indeed difficult to judge, the index was left out and not included in the results. If there was a missing index, make-up examination should be conducted in time.

d) The examinee was observed and if there were any suspicious index, they would be considered according to the examinee’s circumstance. For example, if the examinee was obviously thin, however, his weight was quite high, then the figure was regarded suspicious and was re-examined.

(2) Random re-examination check

a) Method of re-examination

Checkers picked 5% of the total examinees every day randomly to re-examine the anthropometrics index and checked for errors in the examination. The detailed procedures were as follows:

The data file was taken back and another re-examination card was issued (see table 2). The original examiner would re-examine all the anthropometrics indexes in accordance with the original examination procedures and methods.

After the re-examination, the examinee would submit the re-examination card to the checker and the checker would fill in the results in the original data file in the re-examination card (this must be done carefully). Completing that, the checker would return the data book to the examinee and the examinee would complete other examinations with the original data book.

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Checkers and the captain of the study team would check the errors together. The original index minus the index after re-examination equaled to the error of the two tests. The number of errors of each test was counted for each examinee and made sure that the number was within the acceptable range (See acceptable error range of function indexes).

Checkers were to calculate the occurrence rate of re-examination error exceeding the acceptable range once every three days and fill in the table of re-examination errors. (table 3) Error occurrence rate should be calculated with the following formula:

$$P = \frac{\sum n}{AN}$$

In the formula, En means the total frequency of re-examination error exceeding the acceptable range. “A” means the total number of figure indexes in each re-examination card. N means the number of re-examination card (number of examinees who are picked randomly to be re-examined).

Table 2 Re-examination Card

Name \_\_\_\_\_ Gender \_\_\_\_\_ Age \_\_\_\_\_ Working Place \_\_\_\_\_

Type of sample: please mark “√” on your type

| Young Children | Primary School Students | Secondary School Students | College Students | Labor-intensive Adults | Non-labor-intensive Adults | Seniors |
|----------------|-------------------------|---------------------------|------------------|------------------------|----------------------------|---------|
|                |                         |                           |                  |                        |                            |         |

1. Examination Date \_\_\_\_\_ 2. Date of Birth \_\_\_\_\_

3. Community \_\_\_\_\_ 4. Examination Number \_\_\_\_\_

| Index                               | Original value | Re-examination value | Balance(Original-re-examination) | Beyond the acceptable error range (Y/N) |
|-------------------------------------|----------------|----------------------|----------------------------------|-----------------------------------------|
| Height (cm)                         |                |                      |                                  |                                         |
| Sitting height (cm)                 |                |                      |                                  |                                         |
| Weight (kg)                         |                |                      |                                  |                                         |
| Chest circumference (cm)            |                |                      |                                  |                                         |
| Waist circumference (cm)            |                |                      |                                  |                                         |
| Hip circumference (cm)              |                |                      |                                  |                                         |
| Upper arm skinfold thickness (mm)   |                |                      |                                  |                                         |
| Subscapular skinfold thickness (mm) |                |                      |                                  |                                         |
| Abdominal skinfold thickness (mm)   |                |                      |                                  |                                         |
| Shoulder width (cm)                 |                |                      |                                  |                                         |
| Pelvis width (cm)                   |                |                      |                                  |                                         |
| Foot Length (cm)                    |                |                      |                                  |                                         |
| Number of items                     |                |                      |                                  |                                         |

Table-3 Table of Re-examination Errors

\_\_\_\_\_ Study team

| Date of Examination | Total studied subjects | Re-examinees | Error occurrence rate | Signature |
|---------------------|------------------------|--------------|-----------------------|-----------|
|                     |                        |              |                       |           |
|                     |                        |              |                       |           |
|                     |                        |              |                       |           |
| Total               |                        |              |                       |           |

b) Standard of re-examination check

Day of examination

During the day of examination, if the error of one anthropometric index was found to be beyond the acceptable range, the checker should examine it with examiners immediately to find out the reasons and amending methods. Examination methods should be amended promptly to meet the requirements and re-examine the index of total examinees.

Within three days of examination

If the error occurrence rate was larger than 5% within three days of the examination, checkers should detect the reasons and find out the solutions immediately. Unqualified examiners needed to be re-trained and passed the test again in order to return to their position.

If the occurrence rate was larger than 10%, all the indexes were considered invalid. All the examinees should be re-organized and be re-examined for their anthropometric index.

c) Acceptable range of error for anthropometric index

**Height:  $\pm 0.5$  cm; Sitting height:  $\pm 0.5$  cm; Weight:  $\pm 0.1$  kg; Chest, waist and hip circumference:  $\pm 1.0$  cm; Skinfold thickness:  $\pm 2.0$  mm; Shoulder and pelvis width:  $\pm 0.5$  cm; Foot length:  $\pm 0.2$  cm.**

**2.3 Apparatus Check and Maintenance**

The apparatus used for anthropometric testing and physical capability testing needed to be properly checked before the beginning of every examination. If any apparatus was beyond the acceptable range, they should be amended, maintained or changed in time and the Apparatus Checking and Maintenance Form were to be filled out (table 4).

Table 4 Apparatus Checking and Maintenance Form

\_\_\_\_\_ Study team

| Checking Time | Name of Apparatus | Error | Treatment | Signature |
|---------------|-------------------|-------|-----------|-----------|
|               |                   |       |           |           |
|               |                   |       |           |           |
|               |                   |       |           |           |

### 3. Quality Control after examination

#### 3.1 Checking of data book

As all examinations come to an end, each study team was to allocate members to classify and check the data book. The detailed content was as follows:

1) The data book was ensured to be qualified. If a category of indexes was unqualified or three data indexes were unqualified, the book will be regarded as unqualified.

Books that contained data which were not able to be confirmed, re-do or re-examined should be left out.

2) The Checking Table for Data Book was filled (table 5). Every team member must fill it properly.

3) The Classification Table for the Data Book was filled (table 6). Every team member must fill it properly. If there was not enough sample books, more sample books were needed to be added promptly.

Table 5 Checking Table for Data Book

\_\_\_\_\_ Study team

| Group     | Total number of books | Total unqualified books | Present books | Qualified Rate |
|-----------|-----------------------|-------------------------|---------------|----------------|
| 3         |                       |                         |               |                |
| 4         |                       |                         |               |                |
| 5         |                       |                         |               |                |
| 6         |                       |                         |               |                |
| sub-total |                       |                         |               |                |
| 6         |                       |                         |               |                |
| 7         |                       |                         |               |                |
| 8         |                       |                         |               |                |
| 9         |                       |                         |               |                |
| 10        |                       |                         |               |                |
| 11        |                       |                         |               |                |
| 12        |                       |                         |               |                |
| 13        |                       |                         |               |                |
| 14        |                       |                         |               |                |
| 15        |                       |                         |               |                |
| 16        |                       |                         |               |                |
| 17        |                       |                         |               |                |
| 18        |                       |                         |               |                |

|           |  |  |  |  |
|-----------|--|--|--|--|
| 19        |  |  |  |  |
| 20        |  |  |  |  |
| 21        |  |  |  |  |
| 22        |  |  |  |  |
| sub-total |  |  |  |  |
| 20~24     |  |  |  |  |
| 25~29     |  |  |  |  |
| 30~34     |  |  |  |  |
| 35~39     |  |  |  |  |
| sub-total |  |  |  |  |
| 40~44     |  |  |  |  |
| 45~49     |  |  |  |  |
| 50~54     |  |  |  |  |
| 55~59     |  |  |  |  |
| sub-total |  |  |  |  |
| 60~64     |  |  |  |  |
| 65~69     |  |  |  |  |
| sub-total |  |  |  |  |
| total     |  |  |  |  |

Note: Present books = Total number of books - Unqualified books  
 Qualified Rate = (Present books / Total number of books)x100%

Table 6 Classification Table for Data Book of 2005 Physical Fitness Study of Macao Citizens

Study Team:

Target of Study:

| Group     | Male | Female | Sub-total | Remark |
|-----------|------|--------|-----------|--------|
| 3         |      |        |           |        |
| 4         |      |        |           |        |
| 5         |      |        |           |        |
| 6         |      |        |           |        |
| Sub-total |      |        |           |        |
| 6         |      |        |           |        |
| 7         |      |        |           |        |
| 8         |      |        |           |        |
| 9         |      |        |           |        |
| 10        |      |        |           |        |

## 2005 Physical Fitness Report of Macao SAR Citizens

|           |  |  |  |  |
|-----------|--|--|--|--|
| 11        |  |  |  |  |
| 12        |  |  |  |  |
| 13        |  |  |  |  |
| 14        |  |  |  |  |
| 15        |  |  |  |  |
| 16        |  |  |  |  |
| 17        |  |  |  |  |
| 18        |  |  |  |  |
| 19        |  |  |  |  |
| 20        |  |  |  |  |
| 21        |  |  |  |  |
| 22        |  |  |  |  |
| Sub-total |  |  |  |  |
| 20~24     |  |  |  |  |
| 25~29     |  |  |  |  |
| 30~34     |  |  |  |  |
| 35~39     |  |  |  |  |
| Sub-total |  |  |  |  |
| 40~44     |  |  |  |  |
| 45~49     |  |  |  |  |
| 50~54     |  |  |  |  |
| 55~59     |  |  |  |  |
| Sub-total |  |  |  |  |
| 60~64     |  |  |  |  |
| 65~69     |  |  |  |  |
| Sub-total |  |  |  |  |
| total     |  |  |  |  |

### 3.2 Checking of Data Book by the Physical Fitness Monitor Center for Macao Citizens

In order to guarantee the accuracy and reliability of study results, the Physical Fitness Monitor Center for Macao Citizens randomly chose data books and tables to inspect strictly. The detailed method was as follows:

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1) Was the data book classified by type, gender, and age and did the number of each age group meet the required quantity?

2) Random checking - Two age groups of both males and females were randomly chosen to be checked as follows:

a) The number of books for each gender and each age group needed to meet the required quantity. If the number of books was not enough, more books needed to be added.

b) Each page of the randomly chosen data books needed to be checked whether there were missing, wrong, or suspicious indexes or unidentifiable or blurred handwriting. If so, it would be regarded as an unqualified book. If such unqualified book was above 5% of the total, all the books of the team would be re-classified and checked again.

c) Logic reasoning or re-examination by the original team needed to be done on those books with suspicious indexes. If the suspicious figure could not be confirmed, the book would be left out and not be entered into the computer.

### **3.3 Data entry**

Data entry was carried out by means of double input and the computers would compare the two automatically. The error rate of data entry needed to be controlled below 0.05%. If error rate exceeded 0.05%, entry needed to be stopped and the staff responsible could not resume the position until he was re-qualified after training.

### **3.4 Checking of results**

1) Manual check

According to the method and requirements for data checking, two staff members were responsible for checking the data of the data book and the values in the database alternatively. If the two values did not correlate with each other, the value in the database was amended based on the data book.

2) Logic test

Checking programs were set to print out the results above the range of re-examination automatically. Checkers would then search for suspicious values with the original data book. If it was too difficult to judge, the suspicious value was left out.

### **3.5 Checking of information**

Information check was implemented by means of calling examinees. Checkers called examinees randomly chosen from each age group to confirm their personal information. Follow-up call rate was about 0.5 % of the total sample.

### Appendix 2: Methods of Examining the Indexes

#### 1. Anthropometric Indexes

##### 1) Height

Apparatus: Stadiometer

Method:

On bare feet, the examinee should stand upright, eyes looking straight (with the upper part of ear and lowest part of the eye in a horizontal line), against the stadiometer. Upper limbs were to be naturally placed down and keeping both legs straight. Two heels were to be kept together forming a 60° angle. The three points, heels, coccyx and shoulders of the examinee, were to touch the vertical board, forming a straight line when standing (figure 1). The horizontal bar was slid down onto the examinee's head. The eyes of the examiner were kept at the same height as the horizontal bar when reading the scale. Recording used centimeters as the measuring unit and was rounded to one decimal place.

Note:

a) The stadiometer should be placed on a flat surface, against the wall.

b) The examiner should hold onto the horizontal bar when moving it during testing.

c) The requirements, “three points against the scale” and “two points horizontal” should be strictly adhered to.

d) The tightness of the horizontal bar should be adjusted when placing it onto the examiner's head. If an examinee had frizzy hair, the hair should be pushed down when sliding the horizontal bar. Any accessories should be taken off and ponytails should be untied.

e) When reading was completed, the horizontal bar should be slid up to a safe height to prevent accidents.



Figure 1 Height

##### 2) Sitting Height

Apparatus: Stadiometer and measurement box

Method:

The examinee was to sit on seat, with the sacrum and shoulders touching the vertical board. The body and head was to kept straight, looking horizontally to the front, ensuring that the upper part of the ear and lower part of the eye formed a horizontal line (figure 2). The examiner was

to stand at the right side of the examinee and slide the horizontal bar onto the top of the head of the examinee. Recording should be done with the examiner's eyes being the same height as the horizontal bar. Measurement was done in centimeters, rounded to one decimal place.

Note:

a) The examinee should bow first before sitting to ensure that the coccyx was close against the scale. This way, the position of examination could be guaranteed.

b) Shorter children should choose a measurement box of proper height in order to prevent them from slipping forward during the examination.

c) Other important points were the same as above.



Figure 2 Sitting height

### 3) Weight

Apparatus: Electronic digital scale.

Method:

The scale was turned on and the button was pressed, showing a flickering signal on the screen. The scale was in a ready state when the screen showed "0.0".

Wearing shorts, the examinee should naturally stand at the center of the scale, and the body was kept in balance (figure 3). The weight of the examinee was recorded when the value on the screen stopped flickering. Recording was done using kilograms as the measuring unit and was rounded to the nearest decimal place.

Note:

a) During examination, the scale was placed on a flat surface.

b) The examinee should wear as little clothes as possible.

c) The examinee should step on and off the scale slowly and softly.

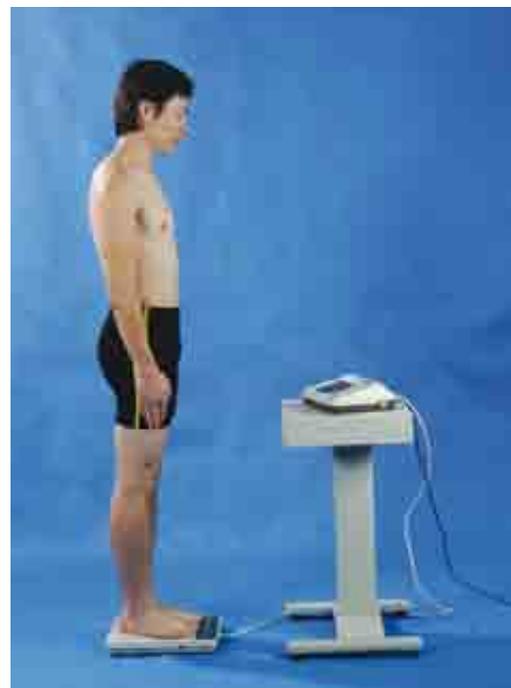


Figure 3 Weight

### 4) Chest Circumference

Apparatus: Measuring tape

Method: The examinee should stand naturally, relaxing both shoulders and with both arms down naturally. Feet should be kept shoulder-width apart and the examinee should keep breathing calmly.

The examiner should stand facing the examinee and wrapped the examinee's chest around with the measuring tape from the scapular. For males and females before puberty, the lower part of the tape was placed on the nipples (figure 4). For females after puberty, the tape was placed on top of the nipples, parallel to the fourth rib. The examiner should keep the tape at a proper tightness to prevent the skin from showing an obvious mark. The value at which crossed with the "0" point of the tape was recorded. The value should be read when the examinee exhaled and the recording was marked using centimeters as the measuring unit and was rounded to one decimal place.

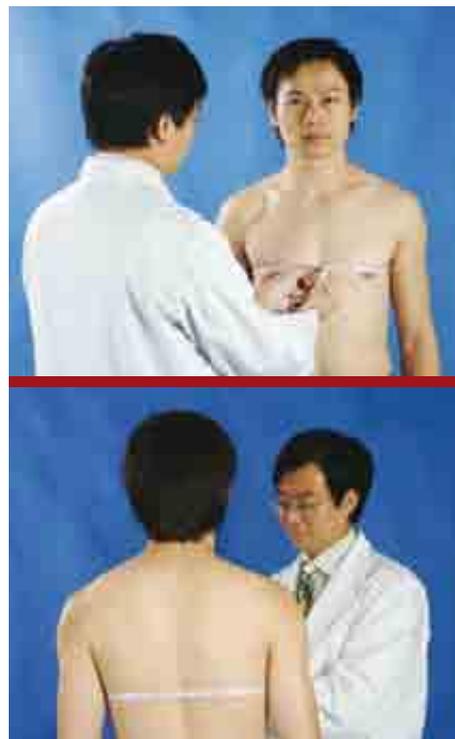


Figure 4 Chest circumference

Note:

- a) During the examination, the examiner should pay attention to the status of the examinee. Wrong posture like, lowering of the head or shrugging the shoulders should be amended in time.
- b) The examiner should control the tightness of the measuring tape properly.
- c) If the scapular was difficult to find, the examiner could ask the examinee to flex the chest. Only when the scapular could be clearly touched, the examinee could change back to the right posture.
- d) If the two sides of the scapular was not of the same height, the lower side should be used for measurement.

### 5) Waist Circumference

Apparatus: Measuring tape

Method: The examinee should stand naturally relaxing both shoulders with two arms crossed before the chest. The examiner should stand facing the examinee and wrapped the tape around the examinee 0.5-1 cm point above the belly button (the thickest part of the waist should be measured for overweight examinees) (figure 5). The examiner should keep the tape at a proper tightness to prevent the skin from showing an obvious mark. The value at which crossed "0" point of the tape was recorded. Recording was done using centimeters as the measuring



Figure 5 Waist circumference

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unit and was rounded to one decimal point.

Note:

- a) The examiner should control the tightness of the tape properly.
- b) During the examination, the waist of the examinee should be fully exposed.
- c) During the examination, the examinee should consciously breathe in and out.

## 6.) Hip Circumference

Apparatus: Measuring tape

Method: The examinee should stand naturally, relaxing the shoulders with two arms crossed before the chest. The examiner should stand at the front, on the side of the examinee and wrapped the tape around the examinee along the peak of gluteus maximums (figure 6). The examiner should keep the tape at a proper tightness to prevent the skin from showing an obvious mark. The value at which crossed the "0" point of the tape was recorded. Recording was done using centimeters as the measuring unit and was rounded to one decimal point.



Figure 6 Hip circumference

Note:

- a) The examiner should control the tightness of the tape properly.
- b) During the examination, males could only wear shorts and females could wear shorts, a tank top or short-sleeve shirt.
- c) During the examination, the examinee should not consciously breathe in and out.

## 7) Skinfold Thickness

Apparatus: Skinfold caliper

Measuring sites: Upper arm, subscapular and abdominal skinfold.

Method: The examinee should stand naturally and exposed the examined parts fully. The examiner should pinch the skin of the measuring sites and hypodermis with thumb, index finger and middle finger of left hand, and then measured the thickness 1 cm under the pinch point (figure 7). This examination should be done three times and the average value or if there were two same figures, should be recorded. Recording was done using centimeters as the measuring unit and was rounded to one decimal point.

Measuring site for upper arm skinfold thickness:

Grasp the fold of skin and subcutaneous adipose tissue at the midpoint between the shoulder and the elbow on the posterior surface of the right upper arm, with skinfold parallel to

the length of the upper arm.

Measuring site for subscapular skinfold thickness:

Grasp the fold of skin and subcutaneous adipose tissue 1.0 cm below the right scapula, with skinfold form a line about 45° toward the spine.

Measuring site for abdominal skinfold thickness:

Grasp the fold of skin and subcutaneous adipose tissue at the intersection point between the horizontal line of the navel and the right collar bone, with skinfold parallel to the long axis of the trunk.

Note:

a) The examinee should stand naturally and relax the muscle so that weight was naturally put on both legs.

b) During the examination, the examiner should pinch the skin and hypodermis together but not muscle.

c) During the examination, the caliper should be perpendicular to the skin.

d) During the examination, the dial and the pressure of the caliper should be frequently adjusted.

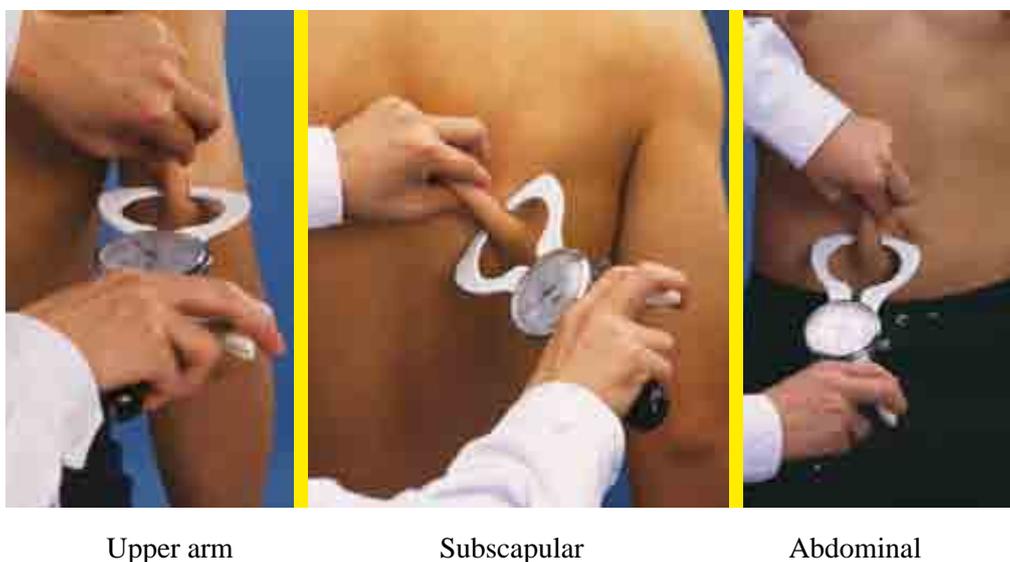


Figure 7 Skinfold thickness

### 8) Shoulder Width

Apparatus: Bare L-square

Method: The examinee should stand naturally, relaxing the shoulders, and the legs was kept shoulder-width apart. The examiner should stand behind the examinee and found the most

outstanding part of the shoulders, by feeling along the scapular area using both index fingers. This was called the peak point of the shoulder. The distance between the two peak points of the shoulder was measured with the bare L-square (figure 8). Recording was done using centimeters as the measuring unit and was rounded to one decimal point.

Note:

- a) The examinee should relax both shoulders naturally and should not shrug or be nervous.
- b) The examiner should find the peak points precisely first and then adjust the bare L-square.



Figure 8 Shoulder width

## 9) Pelvis Width

Apparatus: Bare L-square.

Method: The examinee should stand naturally, relaxing both shoulders and legs should be kept shoulder-width apart. The examiner should stand in front, at the side, of the examinee, and find the widest part of hip, called the ilium point, by using both index fingers (figure 9). Recording was done using centimeters as the measuring unit and was rounded to the nearest decimal point.

Note:

- a) The examinee should not bow, bend legs or turn the body.
- b) The examiner should find the ilium point first and then adjusted the bare L-square.

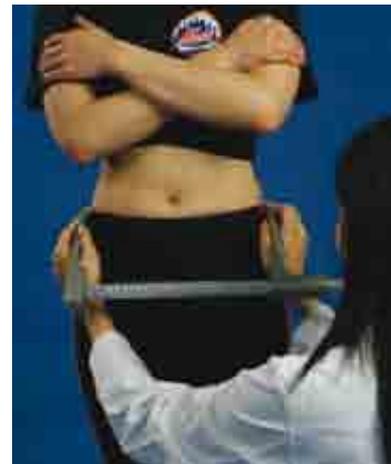


Figure 9 Pelvis width

## 10) Foot Length

Apparatus: Foot length ruler

Method: The examiner should stand naturally with bare right foot stepping on the ruler. The heel should be against the fixed board with the pelma touching closely the bottom of the ruler, and the outer part of foot closed to the side board of the ruler. The examiner should move the slipping board to the tip of the toe and measure the maximum length from the heel to toe (figure 10). Recording was done using centimeters as the measuring unit and was rounded to the nearest decimal point.



Figure 10 Food length

Note:

- a) During the examination, the examinee should not bend the toes.
- b) The length of the foot should be parallel to the ruler.

## 2. Physiological Function Indexes

### 1) Resting Pulse (Heart Rate)

Apparatus: Stopwatch and stethoscope for medical purposes.

Method: The examinee should sit down placing the right forearm on the table with palm facing up. The examiner should sit at the right side of the examinee and measure the pulse of the examinee with ends of index finger, middle finger and ring finger. If the examinee was a child, the examinee should lie down and the examiner should measure the heart rate with a stethoscope by placing it on the heart area (the intersecting point of the collar bone and the fifth rib bone) (figure 11).

Before the examination, the examiner should make sure that the examinee was in a calm state. (That was, using 10 seconds as a unit, measured the pulse for three consecutive 10 seconds. If the value of two units was same and the difference with the third unit was less than one, it could be said that the examinee was in a calm state, otherwise the examinee needed to rest until he met the requirement.) Then, measured the pulse for 30 seconds and doubled the figure to get the result. The record used numbers of heart rate as the measuring unit.

The measurement of heart rate was the same as that of pulse.

Note:

- a) The examinee should avoid strenuous exercise one or two hours before the examination.
- b) Adult and senior examinees should sit calmly for about 10 minutes before the examination.
- c) The examination for children could take place after their afternoon nap.

### 2) Blood Pressure

Apparatus: Sphygmomanometer and stethoscope for medical purposes

Method: The examinee should sit down and placed the right arm naturally on the desk with palm faced up. The “0” point of sphygmomanometer should be roughly at the same vertical

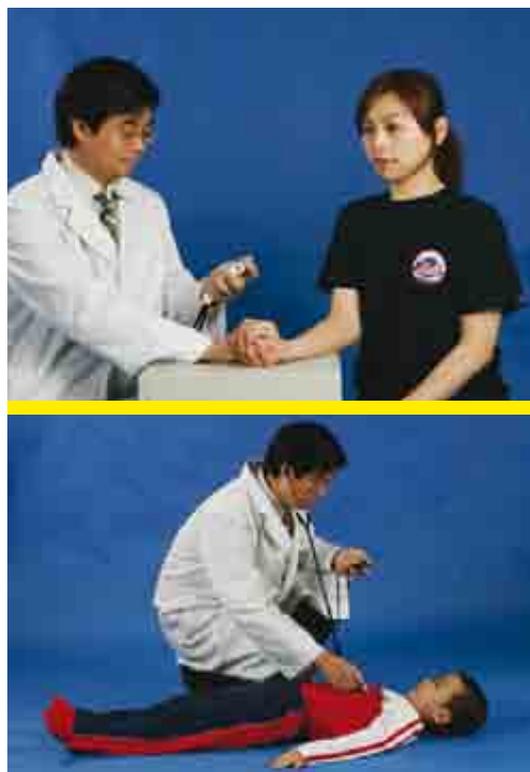


Figure 11 Resting pulse (Heart rate)

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height as the heart and right arm of the examinee. The examiner should put on the inflation cuff properly with an appropriate tightness, exposing the elbow. The stethoscope was put on the brachial artery at the elbow. The stethoscope should not be pressed too hard or put under the cuff. The examiner should inflate the cuff raising the mercury column quickly till the arterial pulse was occluded, and then further raise the mercury column to 20 to 30 mmHg. Then, the examiner should release the air slowly until the first pulse beat was clearly heard. This point was systolic pressure. The examiner should release the air further till the clear and loud sound of a heart beat became vague and reverberating. This was the diastolic pressure (figure 12). Blood pressure should be measured in one trial, otherwise a re-examination was needed. Recording for systolic pressure and diastolic pressure used mmHg as the measuring unit.

Note:

a) The examinee should avoid strenuous exercise one to two hours before the examination.

b) The examinee should sit for about 10 to 15 minutes before the examination, to calm down.

c) The examiner should check whether the mercury was at “0” point initially before the examination. If not, the examiner should adjust it. The examiner should also check whether there were bubbles in the mercury column and removed them if there were. During the examination, the sleeves of the shirt should not be tightly wrapping the arm.

d) The bottom of the inflation cuff should be 2.5 cm above the elbow.

e) If a re-examination was needed, the examiner should wait until the mercury column dropped back down to the “0” point.

f) If a re-examination was needed, the examinee should rest for about 10 to 15 minutes before beginning the re-examination. Professionals on site should give medical assistance to examinees with a high blood pressure result.



Figure 12 Blood pressure

### 3.) Vital Capacity

Apparatus: Electronic spirometer.

Method: The examiner should turn on the switch and pressed the button. Then, a flickering signal of “8888” would be shown on the screen and when it stopped at “0” it meant that the spirometer was ready to be used.

The examiner first should put a disposable mouthpiece in the air inlet and gave it to the examinee. The examinee should hold on to the tube and took a deep breathe with head leaning back a little. Then, the examinee should exhale forcefully into the mouthpiece (figure 13). At

that time, the value shown on the screen was the measurement for vital capacity. The examination should be done twice and the examiner should record the larger value using ml as the measuring unit rounding it to the nearest whole number.

Note:

a) During the examination, a disposable mouthpiece should be used. If the mouthpiece had previously been used, it must be disinfected.

b) Before the examination, the examiner should explain the key points of the examination to the examinee and give a demonstration. The examinee could also try once.

c) During the examination, the examinee should not exhale too forcefully to avoid the release of air outside the mouthpiece. Also, the soft tube must be kept at the top from the inlet.

d) No inhaling was allowed once the examinee started exhaling into the spirometer.

e) The examiner should also correct the examinee if he breathed through the nose. If it could not be corrected, the examiner should ask the examinee to put on a nose clip or hold on to the nose with his hands.

f) Before the second examination, the examiner should press the button again for the spirometer to restore to “0”.

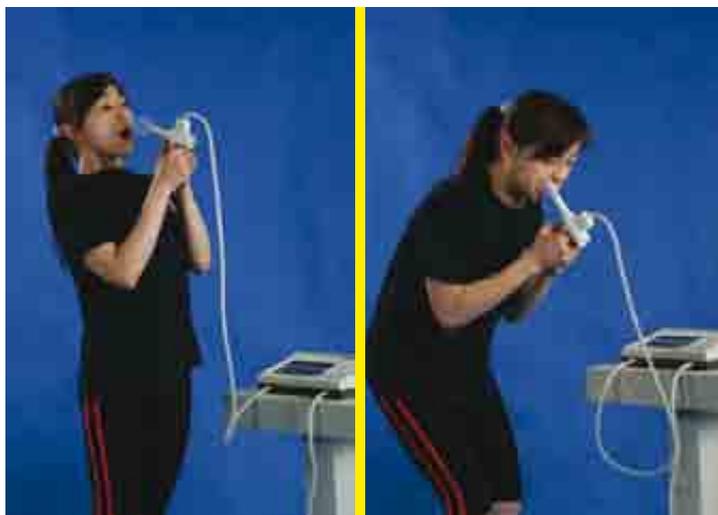


Figure 13 Vital capacity

#### 4. Step Test

Apparatus: Steps (height of steps for males: 30 cm; height of steps for females: 25 cm), heart rate monitor, stopwatch (stand-by).

Method: The examinee should stand in front of the steps relaxed and prepared for the test. The heart rate monitor was turned on and flickering signals was shown on the screen. Then, the button was pressed and the monitor was ready to be used. After three loud beeps, the examinee should step up and down the steps according to the beat of loud beeps from the monitor.

The examinee stepped up with one foot on the first beep, and stepped up with the other foot on the second beep, with both legs stretched, standing on the steps. The examinee stepped down with the first foot on the third beep, and stepped down with the other foot on the fourth beep. This continued for 3 minutes (figure 14). A long beep signified the end and the examinee stopped and sat down with arm placed forward and palm facing up. The examinee's finger should relax and the finger sensor was clipped onto the tip of the index or middle finger.

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The heart rate monitor examined the pulse three times after the exercise. After the examination, the examiner should press the “function” button and recorded the duration of exercise, the pulse figure for 30 seconds of one minute after the exercise, two minutes after the exercise and three minutes after the exercise, respectively.

During the examination, if the examinee could not complete the exercise or could not step up and down the steps according to the beat, the examiner should stop the examinee from continuing, press the “function” button, put the finger sensor and started the pulse recording procedures.

Note:

a) Examinees with heart malfunction or heart disease should not participate in this examination.

b) Examinees should avoid any vigorous exercise before the examination.

c) When stepping up the steps, the legs of the examinee must be stretched straight and knees should not be bended.

d) The examinee should step up and down according to the beat of the monitor.

e) The examiner should also measure the pulse of the examinee manually and compare with the monitor. If there was a difference of 2 beats within 10 beats, the monitor was inaccurate and should use manual measuring instead.

f) Manual pulse measuring: feel the pulse at three intervals - one to one and a half minute after exercise, two to two and a half minute after exercise and three to three and a half minute after exercise.



Figure 14 Step test

### 3. Physical Fitness

#### 1) 10 Meters Shuttle Run (Young children)

Apparatus: Several 10 meter lines were drawn on a flat ground (not limited to any ground texture), each line being 1.22 meters apart from each other. One side was the starting line / finishing line, and the other side was the turning point. A line was drawn three meters from the starting/finishing line and an object was put at the turning point (wooden box or wall) (figure 15). A few stopwatches were also needed.

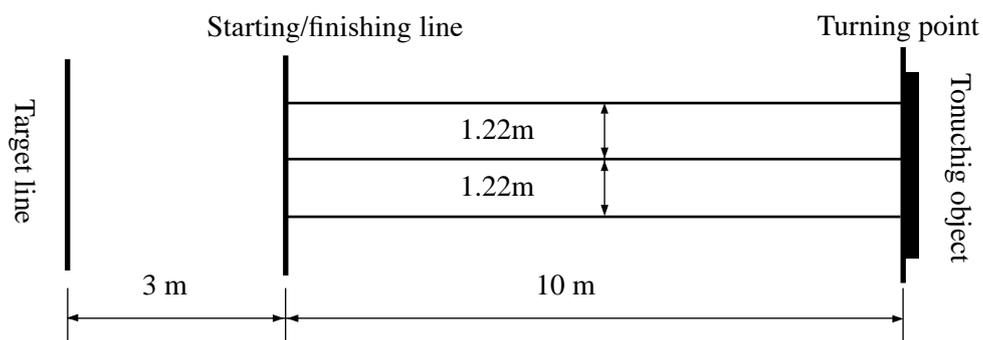


Figure 15 10 meters shuttle run track

Method: At least two examinees stood as a group at the starting line with one leg forward and one leg back. On hearing the starting signal, the examinees should run immediately towards the turning point, touched the object (wooden box or wall) with hands and then turned back towards the target line (figure 16 ). The starter should stand on the side, at the front of the starting line to give instructions. The starter started timing once the examinee started to run. Timing ended when the examinee's chest passed through the finishing line. This examination would only be tested once. Recording was done using seconds as the measuring unit, and was rounded to one decimal place. The number after two decimal places was rounded up, if it was not 0.



Figure 16 10 meters shuttle run

Note:

- a) Before the test, the examiner should explain clearly that the examinee was to run in a straight line at full speed towards the turning point, not onto other lines on the track.
- b) Before starting to run, the examinee should not step on or cross the starting line.
- c) When starting, if the examinee failed to hear the starting signal, the examiner could softly push the examinee to signal that he can start to run.

- d) The examinee could slow down when going through the starting and finishing line.
- e) At the target line, a specific person should be appointed to protect children from falling down.

## 2) 50 Meters Run (Students)

Apparatus: Several 50 meters long lines were drawn on a flat ground (not limited to any types of ground), each line being 1.22 meters apart from each other. One side was the starting line and the other side was the finishing line (figure 17). Also needed were a starting flag, a whistle, and stopwatches.

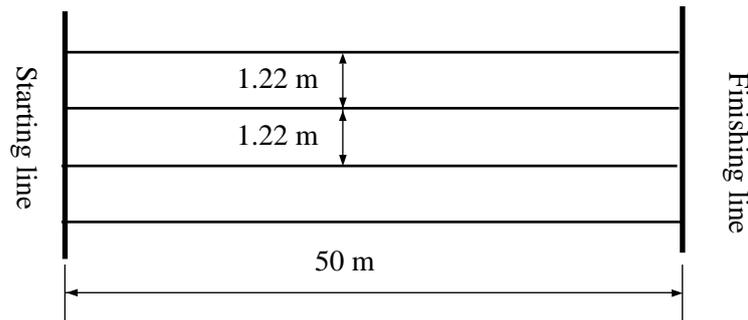


Figure 17 50 meters run track

Method: At least two examinees were needed to form a group, and waited to start at the starting line. On hearing the starting signal the examinees began to run for the finishing line at full speed. The starter should stand on the side, at the front of the starting line and waved the flag while blowing the whistle. The timer at the finishing line started timing once the flag was waved (figure 18). Recording was done using seconds as the measuring unit, and was rounded to one decimal place. The number after two decimal places was rounded up, if it was not 0.

Note:

- a) Before the test, the examiner should explain clearly that the examinee was to run in a straight line at full speed towards the finishing line, not onto other lines on the track.
- b) Before starting to run, the examinee should not step on or cross the starting line. If any examinee began to run before the starting signal, the examiner should call the examinee back and restart.
- c) For the examination, the examinee should wear sportswear and not spiked shoes.
- d) During the examination, if there was wind, the examinee should run as the same direction as the wind.



Figure 18 50 meters run

### 3.) 50 Meters x 8 Shuttle Run (Students)

Apparatus: Several 50 meters long lines were drawn on a flat ground (not limited to any types of ground), each line being 1.22 meters apart from each other. One side was the starting line/finishing line and the other side was the returning line. A target line was drawn three meters away from the starting and finishing line and a station pole was put 1.2 meters high in the middle of the track, about 0.5 meter away from the starting and finishing line and returning line (figure 19). Also needed were a starting flag, a starting whistle, and stopwatches.

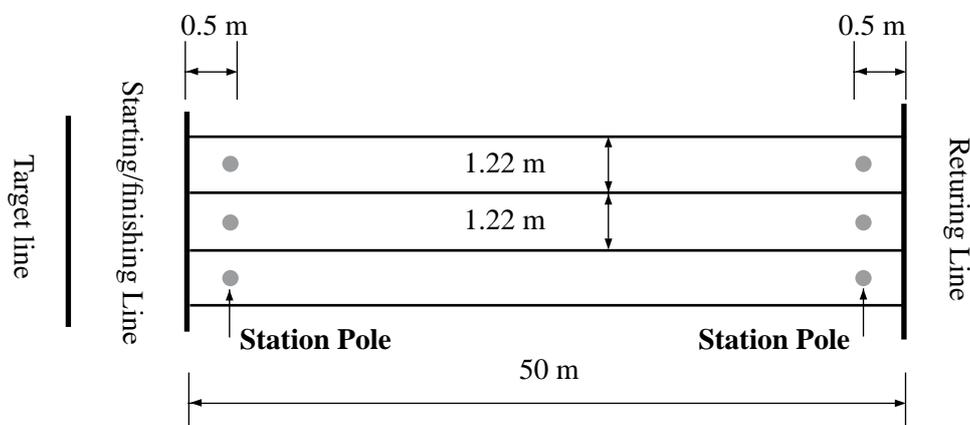


Figure 19 50 meters x 8 shuttle run track

Method: At least two examinees were needed to form a group, and waited to start at the starting line. On hearing the starting signal, the examinees began to run for the finishing line at full speed. When reaching the returning line, the examinee should run around the station pole in an anti-clockwise direction back to the starting/finishing line, and then ran around the station pole in an anti-clockwise direction for the return line again. This shuttle running should go on for four rounds. When returning, the examinee should not touch the poles or used the poles for balance. The starter should stand at the side of the starting and finishing line and began

to time when the examinee began to run. The examiner should record the time when the examinee ran passed the finishing line (figure 20). This exam was only tested once, using seconds as the measuring unit, and was rounded to one decimal place. The number after two decimal places was rounded up, if it was not 0.

Note:

a) Before the test, the examiner should explain clearly that the examinee was to run in a straight line at full speed towards the turning point, not onto other lines on the track.

b) Before starting to run, the examinee should not step on or cross the starting line. If any examinee began to run before the starting signal, the examiner should call the examinee back and restart.

c) During the examination, the examiner should report the number of rounds left to the examinee to prevent the examinee from running the wrong distance.

d) For the examination, the examinee should wear sportswear and not spiked shoes.

e) The examinee could slow down when passing the starting and finishing line.



Figure 20 50 meters x 8 shuttle run

#### 4) 800 Meters Run (Females) or 1000 Meters Run (Males)

Apparatus: flat track, starting flag, whistle, stopwatches

Method: At least two examinees were needed to form a group, and waited to start at the starting line. On hearing the starting signal, the examinees began to run for the finishing line at full speed. The starter should stand at the side of starting line and wave the starting flag while blowing the whistle. The timer should stand at the finishing line and began to time when the flag was waved. When the examinee completed the whole distance, the timer should stop timing (figure 21). The examination should only be done once. The examiner should record the time of completing the whole distance in seconds, rounded to one decimal place. The number after two decimal places was rounded up, if it was not 0.

Note: The same as 50 meters x 8 shuttle run.

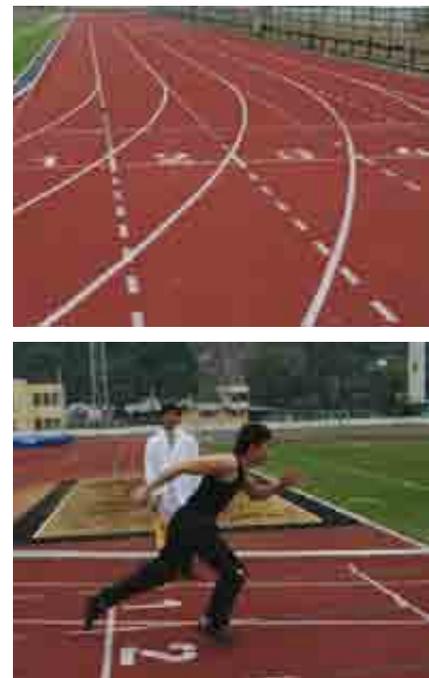


Figure 21 800 or 1000 meters run

### 5) Standing Long Jump

Apparatus: Electronic standing long jump mat.

Method: The examiner should turn on the switch and pressed the button, and then a flickering signal would show on the screen. When the examinee stood at the start line, the value on the screen should be “0”, and it meant that the apparatus was ready to be used.

The examinee should select the start line based on their capability. Legs of the examinee should be naturally apart when standing in front of the starting line. Arms were then waved back before jumping forward with full strength (figure 22). Three seconds after landing, the distance of the jump would be shown on the screen. The examinee should jump twice and the higher score was recorded using cm as the measuring unit, rounded to the nearest whole number.



Figure 22 Standing long jump

Note:

- Before the examinee started to jump, he should not step on or crossed the start line.
- If the instructions were not followed properly, the score would be invalid and the examinee needed to continue to jump again until there was a valid score.
- When jumping, the examinee should not have actions such as, jump at the same spot several times, run up and jump or continuous jumping, etc.
- Before every jump, the value shown on the screen must be “0” or else the button needed to be pressed to restore to “0”.

### 6) Tennis Ball Distance Throw (Young children)

Apparatus: A rectangle 20 meters long and 6 meter wide was drawn. One side of the rectangle was the throwing line and at every 0.5 meter from the throwing line, a straight line was drawn (figure 23). Several rulers and standard tennis balls were needed.

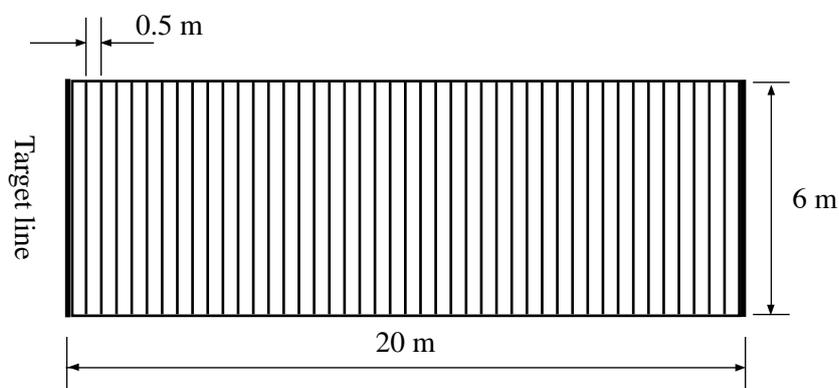


Figure 23 Tennis ball distance throw field

Method: The examinee should stand behind the throwing line with one leg forward and one leg back, and tennis ball in one hand. The ball was thrown from behind the shoulder. When throwing the ball, the hind leg could move forward a step, but could not step on or cross the throwing line (figure 24). An examiner would stand on the side, at the front of the throwing line to give instructions. Another examiner observed the landing point of the ball and recorded the results. The test was done twice and the higher score was recorded. Meters was used as the measuring unit, and was rounded to one decimal place.



Figure 24 Tennis ball distance throw

Recording methods: If the ball landed on a line, the value of the recording line was recorded. If the ball landed between two lines, then the value of the recording line closer to the ball was recorded. If the ball landed beyond 20 meters far, the examiner should measure the length with a measuring tape. If the ball landed beyond 6 meters wide, the ball needed to be thrown again.

Note:

- a) During the exam, the examiner should watch closely the landing points of the ball,
- b) The examinee should not step on or cross the throwing line when throwing the ball. It was not allowed to run and throw.

## 7) Walking on Balance Beam (Young children)

Apparatus: A balance beam that was 30 centimeters high, 10 centimeters wide, and three meters long. One end of the beam was the starting line and the other end was the finishing line. A board that was 20 cm wide 20 cm long was added on each end of the beam to be used as a platform (figure 25).

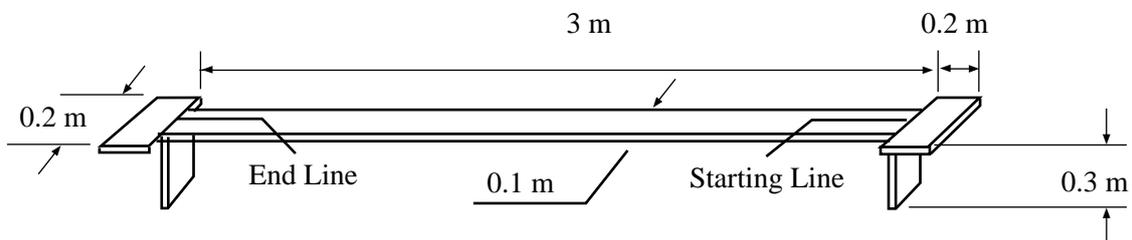


Figure 25 Balance beam

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**Method:** The examinee should stand on the platform at the starting end, facing the beam with open arms. When given the signal to “start”, the examinee should walk towards the finishing line by alternating both feet (figure 26). The examiner should stand in front, at the side of the examinee to give instructions, and began to time once the examinee began to move, following the movement of the examinee. At the same time, the examiner should watch closely the movement of the examinee to avoid any accidents. When the toes of the examinee crossed the finishing line, the examiner should stop timing. The exam was tested twice and the higher score was recorded, using seconds as the measuring unit, rounded to one decimal place. The number after two decimal places was rounded up, if it was not 0.

**Completion format:** If the examinee finished the exam with two feet moving forward alternately, “1” was given. If the examinee finished the exam by moving both feet together slowly, “2” was given. If the examinee failed to complete the task, “3” is given.

**Note:**

- a) Before the exercise, the toes of the examinee should not cross the starting line.
- b) If the examinee fell while walking, a second trial was needed.
- c) The examiner should pay close attention and protected the examinee.



Figure 26 Walking on balance beam

### 8) Successive Jumps with Both Feet (Young children)

**Apparatus:** Measuring tape, stopwatch, ten soft packs (each 10 centimeters long, 5 centimeters wide and 5 centimeters high). A soft pack was put at every 50 centimeters in a straight line on a flat ground (figure 27).

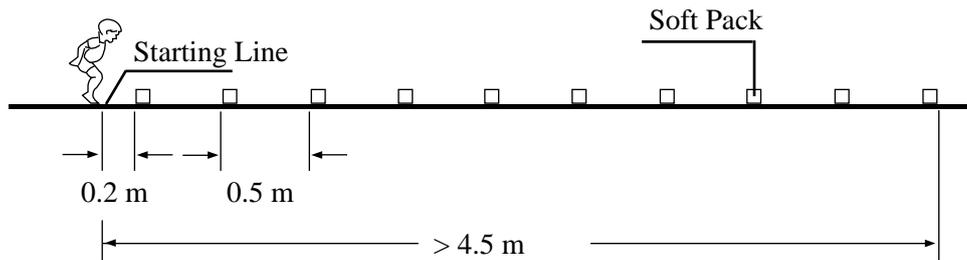


Figure 27 Successive jumps with both feet

Method: The examinee should stand behind the starting line with both feet together, and started jumping continuously with both feet together once the “start” signal was heard. Jumping stopped when the examinee reached the tenth soft pack (figure 28). At the same time, the examiner should begin to time and stopped timing when the examinee jumped over the tenth pack and landed on both feet. The examinee should do this exam twice and the higher score was recorded using seconds as the measuring unit, rounded to the nearest decimal point. The number after two decimal places was rounded up, if it was not 0.

Note:

a) If the examinee had actions such as, jumping way over the soft packs, jumping on the soft packs, kicking away the packs while jumping or jumping with both feet alternately, he should be stopped and the examination was to be restarted.

b) If the examinee could not jump over the soft packs with one jump, two jumps were also accepted.



Figure 28 Successive jumps with both feet

## 9) Sit-and-reach

Apparatus: Electronic sit-and-reach apparatus

Methods: The examiner should turn on the apparatus and moved the nonius to the near end of the track. When the figure “-20.0 centimeter” or below was shown on the screen, it meant that the apparatus was ready to be used.

Facing the apparatus, the examinee sat on a mat with legs stretched forward and heels together, feet flat against the apparatus, toes naturally apart. The examiner should adjust the height of the track so that the tip of the examinee’s toes should be right below the nonius. During the examination, the hands of the examinee should be together, palms facing down, knees straight, and try to reach as far as possible with fingertips pushing the nonius (figure 29). Then, a value would be shown on the screen. The exam was done twice and the higher score was recorded in centimeters, rounded to one decimal place.

Note:

a) Before the examination, the examinee should do some warm-up exercise.

b) During the examination, the examinee's arms should not suddenly move, push the nonius with one hand or bend knees.

c) Before every exam, the examiner should move the nonius back to the near end of the track,

d) The examiner should record the examinee's score properly.

e) If the score of the examinee was less than "-20.0 centimeter", it should be recorded as "-20.0 centimeter".

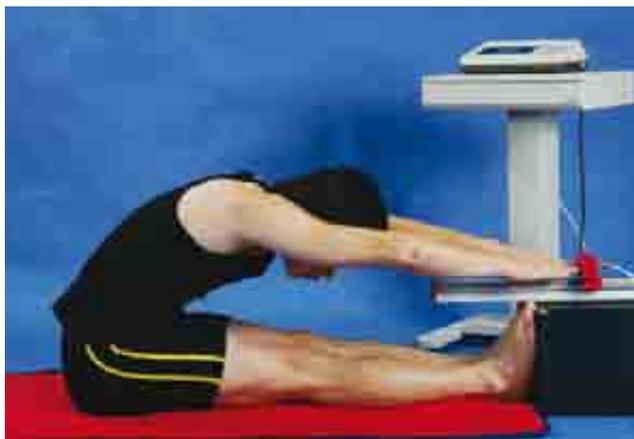


Figure 29 Sit and reach

### 10) Pull-ups with body inclined (Males)

Apparatus: One short adjustable single bar or several short single bars of different height. The girth of the bar should be based on whether the examinee could grasp it or not.

Methods: The examiner should adjust or select a proper single bar and made sure that the bar was as high as the chest (nipples) of the examinee. Facing the single bar, the examinee should stand naturally with hands shoulder width apart, grasped the bar, and stretched legs with heels touching the mat. A partner should anchor the feet of the examinee to make sure the two arms of the examinee was perpendicular to the body with body slanting backwards. Arms would be bent when doing pull-ups. When the chin touched or exceeded the bar, arms could unbend, and was counted as one pull-up (figure 30). The examiner should count and record the number of pull-ups an examinee could do.



Figure 30 Pull-ups with body inclined

Note:

a) When doing a pull-up, the body should be kept straight without bending waist or relaxing abdomen. If the examinee did a pull-up with the help of moving his feet, bending waist or relaxing the abdomen, the pull-up would not be counted.

b) After the examinee did a pull-up, he must return to the start position.

c) Mats could be put under the single bar, and the examiner could stand at the side behind the examinee in case protection was needed.

## 11) Pull-ups (Males)

Apparatus: Several high single bars. The girth of the bar should be based on whether the examinee could grasp the bar or not.

Methods: Facing the single bar, the examinee should stand naturally, and wave the arms backwards, jumped and grasped the bar with two hands shoulder-width. When the body stopped swaying, the examinee should pull the body upwards using full arm strength and no additional movements of the body. When the chin was above the bar, the examinee should return to the start position, and was counted as one pull-up (figure 31). The examiner counted and recorded the number of pull-ups done by the examinee.



Figure 31 Pull-ups

Note:

- a) If the examinee was relatively short and could not grasp the bar by himself even after jumping, the examiner could help him.
- b) During the exercise, the examinee should keep the body stretched without bending knees or relaxing of the abdomen. If the examinee did a pull-up with the help of moving his feet, bending waist or relaxing the abdomen, the pull-up would not be counted.
- c) During the examination, safety gears should be available to prevent any accidents.

## 12) Vertical Jump

Apparatus: Vertical jump test mat

Methods: The examiner should turn on the switch and press the button and there would be flickering signal on the screen and a loud beep would be heard, meaning that the mat was ready to be used. The examinee should step on the mat with legs naturally apart and got ready for the jump. When “0.0” was shown on the screen, the examination could begin. The examinee should squat with bended knees, waved the arms backward and jumped upwards vertically with full strength (figure 32). When the examinee landed back on the mat, the figure shown on the screen was the result of

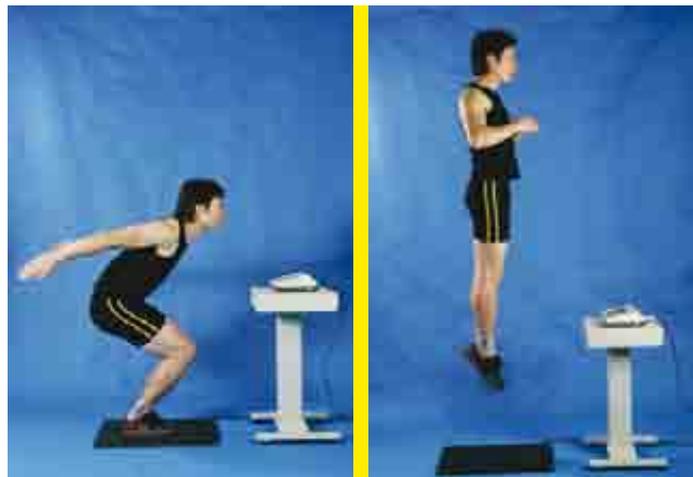


Figure 32 Vertical jump

the examination. The examinee should jump twice and the higher score was recorded, using centimeters as the measuring unit and rounding it to one decimal point.

Note:

a) When jumping, legs of the examinee should not move and the examinee could not jump several times on the spot.

b) From jumping to landing, the examinee could not bend the hip or knees.

c) If the examinee failed to land back on the mat, the jump was not counted and the examinee should try a second time.

d) Before every jump, the examiner should wait for the mat to go back to “0” automatically or press the button to restore the value to “0”.

### 13) Grip Strength

Apparatus: Grip dynamometer

Method: Before the examination, the examinee should grasp the dynamometer with their stronger hand. Meanwhile, the examinee should adjust the grip of the dynamometer until comfortable and get ready for the examination. The examiner should turn on the dynamometer and a flickering signal would be shown on the screen. When “.0” was shown, the dynamometer was ready for testing. During the examination, the examinee should stand still with legs shoulder width apart, arms down, palms inward, and grip the dynamometer with full strength (figure 33). The examinee should do the examination twice and the higher score was recorded using kilograms as the measuring unit and rounding it to one decimal place.



Figure 33 Grip strength

Note:

a) During the examination, the examinee should not move arms, bend knees or hold the dynamometer close to the body.

b) If the examinee could not determine which hand was stronger, both hands could be examined twice and the higher scores would be recorded.

c) Before every examination, the examiner should press the button to restore the value to “0”.

### 14) Back Strength

Apparatus: Back dynamometer

Method: The examiner should turn on the dynamometer and pressed the button. A flickering signal would be shown on the screen and when a “0” showed, the dynamometer was ready to be used.

The examinee should stand on the back dynamometer with feet about 15 centimeters apart, arms down in front of the legs. Then, the examiner would measure the chain so that it barely touched the fingertips. This length of the chain would be hooked onto the dynamometer. During the examination, the examinee should stretch both arms, grip onto the chain with stretched legs and headed upwards, using the back and pull with full strength (figure 34). The examinee should do this twice and the higher score was recorded by the examiner using kilograms as the measuring unit, rounded to the nearest whole number.

Note:

- a) Before the examination, the examinee should do some warm-up exercises.
- b) During the examination, elbows and knees should not be bent.
- c) Before every examination, the examiner should press the button and restore the value to “0”.

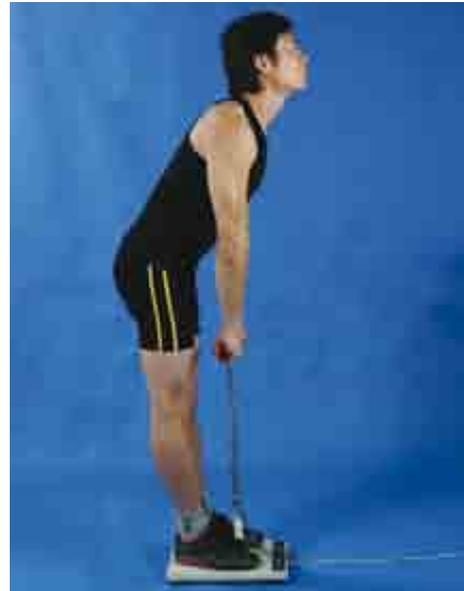


Figure 34 Back strength

## 15) One-foot Stands with Eyes Closed

Apparatus: Balance monitor

Methods: The examiner should turn on the switch and press the button, and a flickering signal would be shown on the screen, followed by a loud beep meaning that the monitor was ready to be used. The examinee stepped on the sensor board with both feet, with the stronger foot stepping on the pressure sensor in the middle. A value of “0” would be shown on the screen, followed by a loud beep. Then the examinee should close his eyes and raised the foot that was not on the sensor (figure 35). The monitor would start counting the time as soon as the other leg was off the board and there would be no more beeping. When the supporting foot of the examinee moved or the foot raised touched the board again, a beep signified the end of the examination. The value shown on the screen was the count of balance in seconds. The examinee should do the examination twice and the higher score would be recorded by the examiner, rounded to the nearest whole number.

Note:

- a) Before the examination, the examinee should step on the board with both feet. The examination will begin only when the examinee stood still.

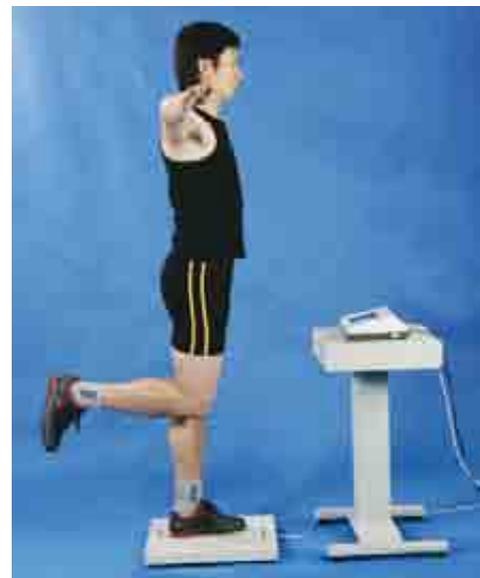


Figure 35 One-foot stands with eyes closed

b) During the examination, eyes should not be opened.

c) The examiner should pay attention and protected the examinee.

d) Before every examination, the examiner should wait for the monitor to go back to “0” automatically or pressed the button to restore the value to “0”.

### 16) Respond Time

Apparatus: Electronic selective respond time apparatus

Method: The examiner should turn on the apparatus and “FYS” would be shown on the screen, meaning the apparatus was ready to be used. When the examination began, fingers should be placed straight together, with middle finger pressing the “start” button, and when a “signal” beeped (signal light would light at the same



Figure 36 Respond time

time), the same hand should press that button as fast as possible, and then return to the “start” button and wait for the next signal, with five signals in total for each trial (figure 36). When there was continuous beeping and all signal lights were lit, the examination was completed and the response time would be shown on the screen. This examination was done twice and the faster respond time was recorded, rounded to two decimal points.

Note:

a) During the examination, the examinee should not slam the signal buttons.

b) The examinee should press the “start” button at all times until a beep was heard or a light was lit. Otherwise, the examination could not be carried out smoothly.

c) The “start” button should be pressed to begin the next examination.

### 17) Push-ups (Males)

Apparatus: Electronic push-up counter.

Method: Before the examination, the examinee should stretch out both arms, shoulder-width apart. The examinee would then lie on the testing board faced down, hands on the board, legs stretched back. The examiner should adjust the height of the two infrared receiver and reflector to make sure that it could sense the examinee’s ‘up and down’ push-up movements. Then the examiner should turn on the switch and a “0” would be



Figure 37 Push-ups

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shown on the screen, meaning that the counter was ready. At this time, the examiner should press the red button on the testing board. On hearing a loud beep, the examinee should bend arms to lower the body to the same level as the shoulder and elbows. Then, the examinee should push the body up and return to the start position. This movement was counted as one push-up (figure 37). The examinee should repeat this movement continuously. When it took more than five seconds to complete one push-up or stayed at a position for more than 3 seconds, the apparatus would stop automatically. The number of push-ups done would then be recorded.

Note:

- a) During the examination, if the examinee failed to keep the body stretched or lower the body to the same height as the shoulder and elbows, it would not be counted as a push-up.
- b) The red button needed to be pressed to begin the next examination.

### 18) One-Minute Sit-ups (Females)

Apparatus: Electronic sit-up counter.

Methods: Before the examination, the examinee should put hands behind the head with fingers crossed, legs spread and feet tied onto the testing board. The examiner should adjust the knee-supporting frame and feet board so that the examinee could bend the knees at a proper angle. The height of the infrared receiver and reflector was adjusted to make sure that it could sense a sit up. The examiner should turn on the switch and a “0” would be shown on the screen, meaning that the counter was ready. Then, the examiner should remove the knee-supporting frame and pressed the red “start” button on the testing board. On hearing the loud beep, the examinee should breathe in, arms behind the head, and complete a sit-up movement. When the elbows touched or exceeded the knees, the examinee would return to the start position. This would be counted as one sit-up (figure 38). The examinee should do as many sit-ups as possible in one minute. The examination was over with a loud ending beep. The number of sit-ups done would be recorded.



Figure 38 One-minute sit-up

Note:

- a) During the examination, if the examinee did a sit-up with the help of elbow strength or using hip motions, or if the elbows failed to touch or exceed the knees, it would not be counted as a sit-up.
- b) During the examination, the examiner should report to the examinee the numbers of sit-ups done.
- c) The red button was pressed to begin the next examination.

### 4. Health Indexes

#### 1) Tooth Decay

Apparatus: Mirror, 5# probe needle

Methods: Teeth were examined one by one in a quadrant order. Pits, holes and easily decayed areas between the teeth should be thoroughly checked with a probe needle, and diagnosis should be informed in detail after the check-up.

Judgment Standard:

a) No tooth decay: no existing fillings and no fillings needed.

b) Tooth Decay: Discoloration, form and quality changes between the teeth, with form changes and quality changes being the main evidence of diagnosis. "Form changes" was indicated by destruction of the enamel. If softening could be felt at the bottom of the hole when picking with the probe needle, it was known as "quality" change. If there were white spots or other color spots on the enamel and if there was no softening of a hole when picked with a probe needle, these situations were not diagnosed as teeth decay. Decay of primary teeth was marked as "d", and decay of permanent teeth is marked as "D".

c) Teeth loss due to decay: Loss of primary teeth not due to the eruption of permanent teeth was marked by "m". Permanent teeth taken out due to decay were marked by "M". During diagnosis, the examiner should pay attention to loss of teeth not due to decay but to physiological replacement.

d) For existing filled teeth, primary teeth that had no continuous tooth decay (filling was not intact with the decayed part of teeth), and no neighbouring tooth decay were marked by "f", permanent teeth were marked by "F".

e) Existing filled teeth but continued to have tooth decay or had neighbouring tooth decay were regarded as decayed teeth.

Recording methods: The teeth quadrant chart was filled after diagnosis, using the d, D, m, M, f, F in the relevant blanks.

(1) There were 16 blanks in the teeth quadrant chart representing "upper" teeth and "lower" teeth respectively. For decayed teeth, the examiner was required to fill in the respective letter into blanks according to the teeth position and types of decay (i.e. primary teeth, permanent teeth etc).

(2) The blank after the teeth decay mark was for filling the total number of different types of teeth decayed. It should be recorded in Arabic numbers.

Note:

a) The examination must be done by professional dentists.

b) For filled teeth, attention must be paid to examine whether there were new caries at the teeth surface and whether there was continuous decay below the filling and with neighbouring teeth.

c) One probe needle could only be used for 60 examinees (times) maximum.

d) After the completion of every examinee, all the tools used must be disinfected.

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## 2) Eye Sight

Apparatus: Standard eye chart (figure 39). The height of eye chart was adjusted to make sure the line of 5.0 of the eye chart was at the same height as the eyes of most examinees. Illuminance of the eye chart was about 500 lux.

Method:

a) The examinee should stand 5 meters away from the eye chart softly covering the left eye. The right eye was examined first, and then the left eye. This was the testing of the naked eye.

b) The examiner started from the optotypes at line 5.0. If the examinee could not identify clearly, the examiner continued with the line above 5.0 one by one. If the examinee could identify line 5.0 correctly, the examiner continued with the line below line 5.0 one by one. The examinee was required to identify the optotypes in within 5 seconds. The examinee could not make any mistakes from line 4.0 to line 4.5. The examinee could only make two mistakes from line 4.6 to line 5.0, and could only make three mistakes from line 5.1 line to line 5.3. If the examinee made more mistakes than the above requirements in one line, that line was the examinee's eyesight score.

c) If the examinee could not identify the first line of the visual chart 5 meters away, the examinee should stand 2.5 meters away or 1 meter away, but 0.3 and 0.7, respectively, were subtracted from the score as the final eyesight score (figure 40).

For example: If the examinee could not identify the first line of the visual chart 5 meters away, the examiner could ask the examinee to stand 2.5 meters away. At that distance, the score of the examinee was 4.2, thus the final score of the examinee was  $4.2 - 0.3 = 3.9$ .

Another example: If the examinee still could not identify the first line of the eye chart from 2.5 meters away, the examiner could ask the examinee to stand 1 meter away. At this distance the score of the examinee was 4.2, thus the final score of the examinee was  $4.2 - 0.7 = 3.5$ .

d) If the naked eyesight of the examinee was above or equal to 5.0, "Normal=0" was filled into the blank, which meant that the eyesight of the examinee was normal and there was no need to correct vision with glasses.

e) If the naked eyesight was below 5.0, it meant that the examinee had poor eyesight. If the range was from 4.8 to 5.0, it was considered mild, 4.6 to 4.8 was considered moderate, and 4.5 to below 4.5 was severe. For near-sighted examinees, glasses should be used to correct vision.

f) Recording methods: Filled the score for both left and right eye of the examinee in relevant blanks.

For example, if the score of naked eyesight was 5.0 for left eye and 4.6 for right eye, then the examiner should fill in the left blank with  and  and right blank with  and .

g) Adjustment of string mirror and recording methods of refractive errors: represented decreased eyesight and represented improved eyesight and "0" represented no change in eyesight. Put the result on the corresponding places for left and right eyes. "0" represented normal, "1" represented near sighted, "2" represented far sighted, "3" represented other.

For example, poor eyesight was detected in subject A. And after assessment using string

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mirror, positive mirror eyesight of the right eye was decreased while negative mirror eyesight improved. Then the examiner had to put on the space for positive mirror and on the space negative mirror. Since the left and right eyes were assessed as “near sighted”, so “1” would be put on the spaces for the left and right refractive errors.

For example, poor eyesight was detected in subject B. After the string mirror assessment, positive mirror eyesight of the left eye improved while the negative mirror eyesight decreased, ‘far sighted’ of the left eye was then diagnosed. No change was detected in the positive and negative mirror eyesight of the right eye, “other” would be stated. Therefore, was put on the space for positive mirror and was put on the space for negative mirror of the string mirror adjustment part. And on the right space, “0” was put on the space for both positive and negative mirror. “2” and “3” were put on the left and right space, respectively of the refractive errors part.



Figure 39 Standard eye chart



Figure 40 Eye sight



### Note:

a) Before the eyesight examination, the examiner should explain the purpose, significance, and methods of the examination to the examinee to gain their cooperation because they might need to take off their glasses to examine their naked eye sight.

b) If natural light was used for the examination, the examiner should choose a sunny day, specific time and location so that results were easier for comparison in the future.

c) Before the examination, the examinee should not rub the eyes. During the examination, the examinee should not narrow the eyes. The examiner should be supervising at all times.

d) When using the eye board, the examiner should remind the examinee not to stress the eye ball to prevent the eyesight from being affected.

e) The examination team would assign the professional to examine eyesight.

f) It was not proper to examine the eye sight after tense work, strenuous exercise or heavy physical labor. At least 10 minutes rest was needed before the examination. If the examination

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was carried out indoor, the examinee should also have 10 minutes to adapt to the environment after he entered the room.

### 3) Color-Vision Deficiency Examination

Apparatus: Color Vision Examination Chart Second Edition (People Health Publishing House, edited by Wang Kechang, 2004) (figure 41).

Methods: The chart should be opened under bright natural light (Sunlight should not shine directly on the pictures) or under lamp light. The examinee should sit before the pictures and with a distance about 40 to 80 centimeters between the eyes and the pictures. The examiner should pick the first picture as an example to teach the examinee the correct way to do the examination. Then, the examiner should pick 3 pictures at random from picture 2 to picture 8 for the examination (figure 42). If the examinee could pass the examination, the color vision of the examinee was normal. Otherwise, it was abnormal. The examiner should also record “normal” or “abnormal” accordingly. The code was 1 for “normal” and 2 for “abnormal”.

Note:

- a) Sunlight should not directly shine on the face of the examinee.
- b) After one examination, the examiner should close the chart immediately.
- c) When reading the pictures, the examinee should keep the pictures clean.
- d) Both the examiner and the examinee should not touch the picture with hands to prevent damage to the pictures. If necessary, a small stick can be used.
- e) It was not proper to examine the eyesight after long work hours, strenuous exercise and heavy physical labor. At least 10 minutes rest was needed before the examination. The examinee should also have 10 minutes to adapt to the environment after he entered the room.
- f) Before the examination, the examinee should not rub the eyes. During the examination, the examinee should not narrow the eyes or looking at the sides. The examiner should be supervising at all times.

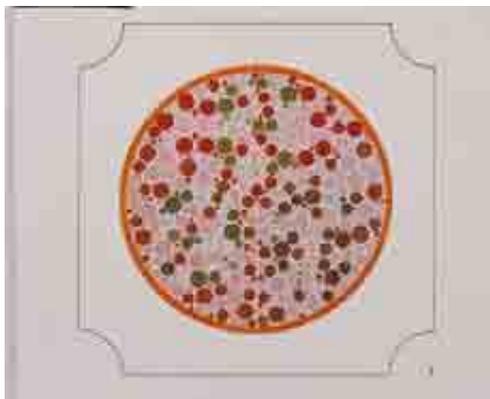


Figure 41 Color Vision Examination Chart



Figure 42 Color-Vision Deficiency Examination

### 4) Hearing

Apparatus: 512 Hz tuning fork

Method: In a quiet environment, the examinee should sit with his back towards the doctor and eyes closed. With a tuning fork at hand, the examiner should ring the tuning fork about 5 to 10 centimeters away from the left or right ear for about 10 seconds. The examinee should judge:

- a) Which ear heard the tune
- b) Was there any difference between the tunes of both sides? If so, which volume was lower?

Judgment Standard: Under normal circumstances, the examinee should hear the tune at both sides and the volume being the same.

Recording Methods: Code for “normal” was 1 and 2 for “abnormal”.

### 5. IC Card and Use of Card Writer

Every subject of the 2005 Physical Health Report of Macao Citizens was evaluated based on the “Physical Fitness Standards for the Chinese Citizens”. Before the examination, every examinee should hold an IC card. The examiner should enter the indexes from Table 1 into the IC card through a card writer. After completing all the examinations, the examinee should hand in the IC card. The examiner should evaluate the physique conditions of the examinee and provide appropriate advice to the examinee through computer software called “Physical Fitness Standards for the Chinese Citizens”.

Method: The examiner should turn on the switch and an indicator “write card” would light up. The IC card was inserted in the slot according to the direction shown on the card and a “card status” indicator would light up. The examination scores of the examinee were entered and the “confirmation” key was pressed. For indexes that needed a re-examination, the above procedure was repeated. After entering all results, the IC card was taken out (figure 43). If there were any errors during the data entry process, the “clear” button was pressed and the results would be re-entered.



Figure 43 The IC card and card writer

Table 1 Testing Indexes in IC Card Writer

| Testing indexes        | Young children                                                                                                                                                                                                                                                                                                                                                                                 | Children and adolescents (Students) |            |            | Adults     |            | Seniors    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------|------------|------------|------------|------------|
|                        | Aged 3~6                                                                                                                                                                                                                                                                                                                                                                                       | Aged 6~12                           | Aged 13~18 | Aged 19~22 | Aged 20~39 | Aged 40~59 | Aged 60~69 |
| Anthropometrics        | Height<br>Weight                                                                                                                                                                                                                                                                                                                                                                               |                                     |            |            |            |            |            |
| Physiological capacity | Vital capacity<br>Step test                                                                                                                                                                                                                                                                                                                                                                    |                                     |            |            |            |            |            |
| Physical Fitness       | 10 m shuttle run<br>Pull-ups with body inclined<br>Pull-ups<br>Grip strength<br>One-minute sit-ups (female)<br>Push-ups (male)<br>Standing long jump<br>Tennis ball distance throw<br>Vertical jump<br>Successive jumps with both feet<br>50 m run<br>50 m x 8 shuttle run<br>800 m/1000 m run<br>Sit and reach<br>Respond time<br>Walking on balance beam<br>One foot stands with eyes closed |                                     |            |            |            |            |            |

Note:   indicated that the testing index had been entered into the IC card.

**Appendix 3: Data Register Manual of 2005 Physical Fitness Report of Macao SAR Citizens**

**1. Young Children**

**Data Register Manual for 2005 Physical Fitness Report of Macao SAR Citizens  
(Young Children aged 3~6)**

Name : \_\_\_\_\_

Gender : \_\_\_\_\_

Age : \_\_\_\_\_

Kindergarten : \_\_\_\_\_

Telephone Number : \_\_\_\_\_

Address : \_\_\_\_\_

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**Thank you for participating in our Physical Fitness Study! This study is organized by the Macao SAR Government to promote sports for all. Please be honest and serious when filling the questionnaire and undergoing the physical examination. We promise to keep your personal information confidential and that we will not publish or use it on its own. It will only be used as part of the whole study for analyzing. Thank you for your sincere participation.**

**For any questions on the questionnaire or testing, please contact Sports Medicine Center, Macao Sport Development Board!**

**Telephone: 810896, 8934566 or 8934540!**

## 2005 Physical Fitness Report of Macao SAR Citizens

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### Methods for filling in questionnaire:

Please fill in the blanks with the corresponding numbers. For example, if you select Choice 1, please fill in the blank with “1”. If the number happens to be two-digits, please put both digits in the same blank. For instance, if you select Choice 11, fill in the blank with . For multiple choice questions, if you only select one or two choice(s), please write down 0 for the rest of the blank(s).

### 1. General Information (to be filled by parents of young children)

1. Macao ID card number
2. Medical care card number of Macao Department of Health
3. Gender (1) Male (2) Female
4. Date of birth  Y  M  D
5. Examination date (to be filled by examiner)  Y  M  D
6. Kindergarten code number (to be filled by examiner)
7. Serial number (to be filled by examiner)
8. Years of residence in Macao

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## 2. Questionnaire (to be filled by parents of young children)

### 2.1. Personal Information of Young Child

1. Birth place   
(1) Mainland      (2) Macao      (3) Hong Kong      (4) Portugal      (5) Others
  
2. Community of residence   
(1) S. Francisco      (2) Na. Sra. do Carmo      (3) S. Lourenço      (4) Sé Catedral  
(5) S. António      (6) S. Lázaro      (7) Na. Sra. de Fátima
  
3. Birth weight (kg) (If you are not sure, please fill in 99.9) .
  
4. Birth length (cm) (If you are not sure, please fill in 99.9) .
  
5. Gestational age   
(1) Premature      (2) Term      (3) Post-term
  
6. Types of feeding within four months after birth   
(1) Breast feeding      (2) Formula feeding      (3) Mixed feeding
  
7. Number of siblings (If none, please write 0)
  
8. Birth order among siblings (If none, please write 0)
  
9. Frequency of flu or fever within the past year   
(1) Never      (2) 1~2 times      (3) 3~5 times      (4) 6 times or more
  
10. Does the subject have any disease diagnosed by doctors?   
(If negative, skip to question 12)  
(1) Yes      (2) No

## 2005 Physical Fitness Report of Macao SAR Citizens

11. Diseases experienced by the subject

(in order of precedence, at most three diseases)

- |                        |                      |                        |
|------------------------|----------------------|------------------------|
| (1) Chronic Bronchitis | (2) Pneumonia        | (3) Tuberculosis       |
| (4) Asthma             | (5) Hematic Disease  | (6) Heart disease      |
| (7) Hypertension       | (8) Anemia           | (9) Nephritis          |
| (10) Hepatitis         | (11) Hyperthyroidism | (12) Hypothyroidism    |
| (13) Rhachitis         | (14) Epilepsia       | (15) Accidental injury |
| (16) Others            |                      |                        |

Please answer the following questions according to the subject's status in the past half year.

12. Average sleeping hours per day (including nap)

- (1) Below 8 hours      (2) 8~10 hours      (3) 10 hours or more

13. Kindergarten attendance

- (1) Never      (2) Half day      (3) Full day      (4) Boarding

14. Guardian at home

- (1) Parents      (2) Senior      (3) Babysitter      (4) Others

15. Hobby (interest) classes during spare time (at most three items)

- |                   |                       |                             |
|-------------------|-----------------------|-----------------------------|
| (1) None          | (2) Physical exercise | (3) Tutoring                |
| (4) Chess-related | (5) Music and dancing | (6) Drawing and calligraphy |
| (7) Others        |                       |                             |

16. Time spent on outdoor activities per day (including those in and out of kindergarten)

- (1) Less than 30 mins      (2) 30 mins~1hr      (3) 1~2 hrs      (4) 2 hrs or more

17. Time spent on watching TV, video and playing video games per day

- |                       |                   |             |
|-----------------------|-------------------|-------------|
| (1) Less than 30 mins | (2) 30 mins~1 hr  | (3) 1~2 hrs |
| (4) 2~3 hrs           | (5) 3 hrs or more |             |

18. Types of sports most often participate (at most three items)

- (1) Swimming    (2) Track & field    (3) Ball games    (4) Gymnastics  
(5) Skating    (6) Dancing    (7) Rope Skipping    (8) Martial arts, Taekwondo  
(9) Cycling    (10) Judo    (11) Karate    (12) Yoga  
(13) Others

## 2.2 Paternal Personal Information

1. Date of birth

 Y  M  D

2. Birth place

- (1) Mainland    (2) Macao    (3) Hong Kong    (4) Portugal    (5) Others

3. Years of residence in Macao

4. Height(cm)

.

5. Weight(kg)

.

6. Education level

- (1) Below primary school    (2) Primary school    (3) Secondary school  
(4) University or professional college    (5) Masters    (6) Doctoral

7. Current occupation

- (1) Legislative officer, high rank officer of public administration,  
head of organization or manager  
(2) Professional    (3) Technician or assistant professional  
(4) Office clerk    (5) Customer service or sales  
(6) Workers of the fishery or agricultural field    (7) Artisan or craftsman  
(8) Machine operator, driver or assembler    (9) Non-technician  
(10) Others

8. Frequency of sports activities per week

(If select (1), skip questions 9 & 10)

- (1) Never    (2) At most once    (3) 1~2 times  
(4) 3~4 times    (5) At least 5 times

## 2005 Physical Fitness Report of Macao SAR Citizens

9. Types of sports often participate (at most three items)
- (1) Jogging                      (2) Swimming                      (3) Walking                      (4) Ball games  
(5) Climbing                      (6) Cycling                      (7) Working out                      (8) Aerobics, yangko  
(9) Martial arts or qigong                      (10) Boxing                      (11) Fencing                      (12) Yoga  
(13) Judo                      (14) Taekwondo                      (15) Karate                      (16) Others
10. Average duration of sports activities per time
- (1) Less than 30 mins                      (2) 30~60 mins                      (3) At least 60 mins

### 2.3 Maternal Personal Information

1. Date of birth     Y   M   D
2. Birth place
- (1) Mainland                      (2) Macao                      (3) Hong Kong                      (4) Portugal  
(5) Others
3. Years of residence in Macao
4. Height (cm)     .
5. Weight (kg)     .
6. Education level
- (1) Below primary school                      (2) Primary school                      (3) Secondary school  
(4) University or professional college                      (5) Masters                      (6) Doctoral

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7. Current occupation

(1) Legislative officer, high rank officer of public administration,  
head of organization or manager

(2) Professional

(3) Technician or assistant professional

(4) Office clerk

(5) Customer service or sales

(6) Workers of the fishery or agricultural field

(7) Artisan or craftsman

(8) Machine operator, driver or assembler

(9) Non-technician

(10) Others

8. Frequency of sports activities per week (If select (1) , skip questions 9 &10)

(1) Never

(2) At most once

(3) 1~2 times

(4) 3~4 times

(5) At least 5 times

9. Types of sports often participate (at most three items)

(1) Jogging

(2) Swimming

(3) Walking

(4) Ball games

(5) Climbing

(6) Cycling

(7) Working out

(8) Aerobics or yangko

(9) Martial arts or qigong

(10) Boxing

(11) Fencing

(12) Yoga

(13) Judo

(14) Taekwondo

(15) Karate

(16) Others

10. Average duration of sports activities per time

(1) Less than 30 mins

(2) 30~60 mins

(3) At least 60 mins

## 2005 Physical Fitness Report of Macao SAR Citizens

### 3. Indexes examined (to be filled by examiner at location)

|                                                     |                     |                                        |            |
|-----------------------------------------------------|---------------------|----------------------------------------|------------|
| 1. Height (cm)                                      | □□□□.□              | 2. Sitting height (cm)                 | □□□.□      |
| 3. Weight (kg)                                      | □□□□.□              | 4. Chest circumference (cm)            | □□□.□      |
| 5. Waist circumference (cm)                         | □□□.□               | 6. Hip circumference (cm)              | □□□.□      |
| 7. Upper arm skinfold thickness (mm)                | □□□.□               | 8. Subscapular skinfold thickness (mm) | □□□.□      |
| 9. Abdominal skinfold thickness (mm)                | □□□.□               | 10. Shoulder width (cm)                | □□□.□      |
| 11. Pelvis width (cm)                               | □□□.□               |                                        |            |
| 12. Foot length (cm)                                | □□□.□               |                                        |            |
| 13. Resting heart rate (bpm)                        | □□□□                |                                        |            |
| 14. Standing long jump (cm)                         | □□□□                |                                        |            |
| 15. Tennis ball distance throw (m)                  | □□□□.□              |                                        |            |
| 16. Sit and reach (cm)                              | □□□□.□              |                                        |            |
| 17. 10 m shuttle run (sec)                          | □□□□.□              |                                        |            |
| 18. Walking on balance beam                         |                     |                                        | □          |
| Types of movement                                   | (1) Walking forward | (2) Moving sideways                    | (3) Undone |
| Time needed(sec)                                    |                     |                                        | □□□.□      |
| 19. Successive jumps with both feet (sec)           |                     |                                        | □□□.□      |
| (If subjects failed to complete, please write 99.9) |                     |                                        |            |
| 20. Dental decay                                    | □□□□□□□□□□□□□□□□    |                                        |            |
|                                                     | □□□□□□□□□□□□□□□□    |                                        |            |
|                                                     | d □                 | D □                                    | m □        |
|                                                     | M □                 | f □                                    | F □        |

**Examiner:** \_\_\_\_\_

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## 2. Children and Adolescents (Students)

### **Data Register Manual for 2005 Physical Fitness Report of Macao SAR Citizens Children and adolescents (Students aged 6~22)**

Name : \_\_\_\_\_

Gender : \_\_\_\_\_

Age : \_\_\_\_\_ (years)

School/University : \_\_\_\_\_

Telephone Number : \_\_\_\_\_

Address : \_\_\_\_\_

**Macao Sport Development Board, Macao SAR**

**Thank you for participating in our Physical Fitness Study! This study is organized by the Macao SAR Government to promote sports for all. Please be honest and serious when filling the questionnaire and undergoing the physical examination. We promise to keep your personal information confidential and that we will not publish or use it on its own. It will only be used as part of the whole study for analyzing. Thank you for your sincere participation.**

**For any questions on the questionnaire or testing, please contact Sports Medicine Center, Macau Sport Development Board!**

**Telephone: 810896, 8934566 or 8934540!**

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**Methods for filling in questionnaire:**

Please fill in the blanks with the corresponding numbers. For example, if you select Choice 1, please fill in the blank with “1”. If the number happens to be two-digits, please put both digits in the same blank. For instance, if you select Choice 11, fill in the blank with 11. For multiple choice questions, if you only select one or two choice(s), please write down 0 for the rest of the blank(s) .

**1. General Information (to be filled by parents of students)**

1. Macao ID card number
2. Medical care card number of Macao Department of Health
3. Student card number of Macao Education and Youth Affairs Bureau
4. Gender (1) Male (2) Female
5. Date of birth  Y  M  D
6. Date of examination (to be filled by examiner)  Y  M  D
7. School/University code number (to be filled by examiner)
8. Serial number (to be filled by examiner)
9. Years of residence in Macao

**2. Questionnaire (to be filled by parents of students)**

**2.1 Personal Information of Student**

1. Birth place   
(1) Mainland      (2) Macao      (3) Hong Kong      (4) Portugal      (5) Others

2. Community of residence   
(1) S. Francisco      (2) Na. Sra. do Carmo      (3) S. Lourenço  
(4) Sé Catedral      (5) S. António      (6) S. Lázaro  
(7) Na. Sra. de Fátima

3. Does the subject have any disease diagnosed by doctors within the past 5 years?   
(If the answer is negative, skip to question 5.)  
(1) Yes      (2) No

4. Diseases experienced by the subject   
(in order of precedence, at most three diseases)  
(1) Chronic Bronchitis      (2) Pneumonia      (3) Tuberculosis  
(4) Asthma      (5) Hematic Disease      (6) Heart disease  
(7) Hypertension      (8) Anemia      (9) Nephritis  
(10) Hepatitis      (11) Hyperthyroidism      (12) Hypothyroidism  
(13) Rhachitis      (14) Epilepsia      (15) Accidental injury  
(16) Others

5. Number of siblings (if none, please write 0)

6. Birth order among siblings (if none, please write 0)

Please answer the following questions according to the subject's status in the past half year

7. School attendance   
(1) Never      (2) Half day      (3) Full day      (4) Boarding

- 
8. Transportation means to school
- (1) Walking                      (2) Motorcycle                      (3) Bus                      (4) Car
9. Total time spent commuting to and from school per day
- (1) Within 30 mins                      (2) 30 mins~1hr                      (3) 1~2 hrs  
(4) 2 hrs or more
10. Frequency of physical exercise (PE) class per week
- (if choose (5), skip to question 12)
- (1) 1 time                      (2) 2 times                      (3) 3 times                      (4) 4 times or more                      (5) Never
11. How does the subject feel during PE class?
- (1) Breathing & heart rate remain almost the same  
(2) Slight increase in breathing & heart rate and perspiring slightly  
(3) Rapid breathing and increased heart rate and perspiring greatly
12. Time spent on outdoor activities during leisure time per day
- (1) Less than 30 mins                      (2) 30 mins~1hr                      (3) 1~2 hrs                      (4) 2 hrs or more
13. Time spent on watching TV, video and playing video games per day
- (1) Less than 30 mins                      (2) 30 mins~1 hr                      (3) 1~2 hrs                      (4) 2~3 hrs  
(5) 3 hrs or more
14. Hobby (interest) class during leisure time (at most select three items)
- (1) None                      (2) Physical exercise                      (3) Tutoring  
(4) Chess-related                      (5) Music and dancing                      (6) Drawing and calligraphy  
(7) Others

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14-1. Frequency of doing sports activities during leisure time per week

(If chose choice (1), skip to question No.19)

- (1) Never                      (2) At most once                      (3) 1~ 2 times  
(4) 3~4 times                      (5) 5 times or more

15. Types of sports subject often participate (at most three items)

(If choose choice (3) question 16 must be answered)

- (1) Swimming    (2) Track & field    (3) Ball games    (4) Gymnastics  
(5) Skating    (6) Dancing    (7) Rope skipping    (8) Martial arts and Taekwondo  
(9) Cycling    (10) Judo    (11) Karate    (12) Yoga  
(13) Others

16. Frequent ball games participate

- (1) Basketball    (2) Volleyball    (3) Football    (4) Table tennis  
(5) Badminton    (6) Tennis    (7) Golf    (8) Billiards

17. Average duration of physical exercise per time

- (1) Less than 30 mins                      (2) 30~60 mins  
(3) 1~2 hrs                      (4) At least 2 hrs

18. How does the subject feel after physical exercise?

- (1) Breathing & heart rate remains almost the same  
(2) Slight increase in breathing & heart rate and perspiring slightly  
(3) Rapid breathing & increase heart rate and perspiring greatly

19. Time spent on homework each day

- (1) Within 30 mins                      (2) 30 mins~1hr                      (3) 1~2 hrs  
(4) 2~3 hrs                      (5) At least 3 hrs

20. Average sleeping hours per day (including nap)

- (1) Less than 8 hrs                      (2) 8~10 hrs                      (3) 10 hrs or more

---

### 3. Testing indexes (to be filled by examiner at location)

- |                                         |                                                                                     |   |                      |                                        |                                                                                                                               |   |                      |
|-----------------------------------------|-------------------------------------------------------------------------------------|---|----------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---|----------------------|
| 1. Height (cm)                          | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | . | <input type="text"/> | 2. Sitting height (cm)                 | <input type="text"/> <input type="text"/>                                                                                     | . | <input type="text"/> |
| 3. Weight (kg)                          | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | . | <input type="text"/> | 4. Chest circumference (cm)            | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                                           | . | <input type="text"/> |
| 5. Waist circumference (cm)             | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | . | <input type="text"/> | 6. Hip circumference (cm)              | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                                           | . | <input type="text"/> |
| 7. Upper arm skinfold thickness (mm)    | <input type="text"/> <input type="text"/>                                           | . | <input type="text"/> | 8. Subscapular skinfold thickness (mm) | <input type="text"/> <input type="text"/>                                                                                     | . | <input type="text"/> |
| 9. Abdominal skinfold thickness (mm)    | <input type="text"/> <input type="text"/>                                           | . | <input type="text"/> | 10. Shoulder width (cm)                | <input type="text"/> <input type="text"/>                                                                                     | . | <input type="text"/> |
| 11. Pelvis width (cm)                   | <input type="text"/> <input type="text"/>                                           | . | <input type="text"/> | 12. Foot length (cm)                   | <input type="text"/> <input type="text"/>                                                                                     | . | <input type="text"/> |
| 13. Resting pulse (times/min)           | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |   |                      | 14. Systolic pressure (mmHg)           | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                                           |   |                      |
| 15. Diastolic pressure (mmHg)           | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |   |                      | 16. Vital capacity (ml)                | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |   |                      |
| 17. 50 m run (sec)                      | <input type="text"/> <input type="text"/>                                           | . | <input type="text"/> | 18. Standing long jump (cm)            | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                                           |   |                      |
| 19. Pull-ups with body inclined (times) | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |   |                      | 20. 50 m x 8 shuttle run (sec)         | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                                           |   |                      |
| Pull-ups (times)                        |                                                                                     |   |                      | 800 m run (sec)                        |                                                                                                                               |   |                      |
| One-minute sit-ups (times)              |                                                                                     |   |                      | 1000 m run (sec)                       |                                                                                                                               |   |                      |
| 21. Vertical jump (cm)                  | <input type="text"/> <input type="text"/>                                           | . | <input type="text"/> | 22. Grip strength (kg)                 | <input type="text"/> <input type="text"/>                                                                                     | . | <input type="text"/> |
| 23. Back strength (kg)                  |                                                                                     |   |                      |                                        | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                                           |   |                      |

## 2005 Physical Fitness Report of Macao SAR Citizens

24. Sit and reach (cm)    .

25. OFSEC (sec)

26. Respond time (sec)  .

27. Dental decay (aged 6~18)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

d  D  m  M  f  F

28. Hearing (aged 13~22 years)    left ear                       right ear   
 (1) Normal                      (2) Abnormal

29. Vision

Naked eyes:    left       
                                          right   

String mirror correction: left    positive \_\_\_\_\_    negative \_\_\_\_\_

String mirror correction: right    positive \_\_\_\_\_    negative \_\_\_\_\_

Refractive errors: left   

Refractive errors: right      
 (0) Normal            (1) Near sighted            (2) Far sighted            (3) Others

30. Color vision deficiency exam      
 (1) Normal                                      (2) Abnormal

**Examiner:** \_\_\_\_\_

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### 3. Adults

## Data Register Manual for 2005 Physical Fitness Report of Macao SAR Citizens (Adults aged 20~39)

Name : \_\_\_\_\_

Gender : \_\_\_\_\_

Age : \_\_\_\_\_ (years)

Working Unit : \_\_\_\_\_

Telephone Number : \_\_\_\_\_

Address : \_\_\_\_\_

**Macao Sport Development Board, Macao SAR**

**Thank you for participating in our Physical Fitness Study! This study is organized by the Macao SAR Government to promote sports for all. Please be honest and serious when filling the questionnaire and undergoing the physical examination. We promise to keep your personal information confidential and that we will not publish or use it on its own. It will only be used as part of the whole study for analyzing. Thank you for your sincere participation.**

**For any questions on the questionnaire or testing, please contact Sports Medicine Center, Macao Sport Development Board!**

**Telephone: 810896, 8934566 or 8934540!**

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### Methods for filling in questionnaire:

Please fill in the blanks with the corresponding numbers. For example, if you select Choice 1, please fill in blank with “1”. If the number happens to be two-digits, please put both digits in the same blank. For instance, if you select Choice 11, fill in the blank with [1][1]. For multiple choice questions, if you only select one or two choice(s), please write down 0 for the rest of the blank(s).

## 1. General Information

1. Macao ID card number
2. Medical care card number of Macao Department of Health
3. Gender (1) Male (2) Female
4. Date of birth  Y  M  D
5. Date of examination  Y  M  D
6. Working unit code number (to be filled by examiner)
7. Serial number (to be filled by examiner)
8. Years of residence in Macao
9. Category of occupation (1) labor work (2) non-labor work

## 2. Questionnaire

1. Birth place   
(1) Mainland (2) Macao (3) Hong Kong (4) Portugal (5) Others
2. Community of residence   
(1) S. Francisco (2) Na. Sra. do Carmo (3) S. Lourenço  
(4) Sé Catedral (5) S. António (6) S. Lázaro  
(7) Na. Sra. de Fátima

## 2005 Physical Fitness Report of Macao SAR Citizens

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3. Education level

- (1) Below primary school                      (2) Primary school      (3) Secondary school  
(4) University or professional college      (5) Masters              (6) Doctoral

4. Current occupation

- (1) Legislative officer, high rank officer of public administration, head of organization or manager  
(2) Professional                                      (3) Technician or assistant professional  
(4) Office clerk                                      (5) Customer service or sales  
(6) Workers in the fishery or agricultural field      (7) Artisan or craftsman  
(8) Machine operator, driver or assembler      (9) Non-technician  
(10) Others

5. Working environment

- (1) Outdoor              (2) Indoor (naturally ventilated)              (3) Indoor (air conditioned)

6. Does the subject have any disease diagnosed by doctors within past 5 years?

- (If the answer is negative, skip to question 8.)  
(1) Yes                                      (2) No

7. Diseases experienced by the subject

(in order of precedence, at most three diseases)

- (1) Cancer                      (2) Cardiovascular diseases              (3) Respiratory  
(4) Accidental injury              (5) Digestive system              (6) Hypertension  
(7) Endocrine diseases              (8) Urinary or reproductive              (9) Diabetes  
(10) Others

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Please answer the following questions according to your status within the past half year

8. Average working hours per week
- (1) Unemployed      (2) Less than 20 hrs      (3) 20~35 hrs  
(4) 35~40 hrs      (5) 40~50 hrs      (6) 50 hrs or more
9. Average sleeping hours per day (including nap)
- (1) Less than 6 hrs      (2) 6~9 hrs      (3) 9 hrs or more
10. Quality of sleep
- (1) Poor      (2) Reasonable      (3) Good
11. Average walking hours per day (only count walks that last longer than 10 mins or above and not including walks during physical exercise)
- (1) Less than 30 mins      (2) 30 ~ 60 mins  
(3) 1 ~ 2 hrs      (4) 2 hrs or more
12. Average sitting time per day (during work, watching TV, commuting, using computer, dining or chatting etc.)
- (1) Less than 3 hrs      (2) 3 ~ 6 hrs      (3) 6 ~ 9 hrs  
(4) 9 ~ 12 hrs      (5) 12 hrs or more
13. Cigarettes consumed
- (1) None      (2) Less than 10 cigarettes per day  
(3) 10~20 cigarettes per day      (4) 20 cigarettes or more per day  
(5) Stopped smoking for less than 2 years      (6) Stopped smoking for 2 years or more
14. Smoking years (smokers only)
- (1) Less than 5 years      (2) 5~10 years  
(3) 10~15 years      (4) 15 years or more

## 2005 Physical Fitness Report of Macao SAR Citizens

15. Does the subject drink? (If choose choice (2), skip to question 18)   
(1) Yes (2) No

16. Frequency of drinking   
(1) Once per month (2) 1~2 times per week  
(3) 3~4 times per week (4) 5~7 times per week

17. Type of alcohol frequently drink   
(1) Liquor (2) Beer (3) Yellow wine  
(4) Rice wine (5) Wine or fruit wine (6) Mixed

18. Entertainment activities that the subject spent most during leisure time on   
(at most 3 items)  
(1) Physical exercise (2) Chess or poker (3) Traveling (4) Gathering  
(5) AV entertainment (6) House chores (7) Sleep (8) Others

19. Sport events that the subject watches frequently   
(in order of precedence, at most three items)  
(1) Basketball (2) Volleyball (3) Football (4) Gymnastics  
(5) Swimming (6) Martial arts (7) Boxing (8) Table tennis  
(9) Billiards (10) Golf (11) Badminton (12) Water polo  
(13) Baseball (14) Softball (15) Weight- lifting (16) Fencing  
(17) Wrestling or judo (18) Others

20. Average frequency of sports activities per week   
(If choose choice(1), skip to question 28)  
(1) Never (2) At most once (3) 1~2 times  
(4) 3~4 times (5) 5 times or more

21. Average duration of sports activities each time   
(1) Less than 30 mins (2) 30~60 mins (3) 60 mins or more

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22. How long has the subject persisted to continue exercising?

- (1) Less than 6 months      (2) 6~12 months      (3) 1~3 years  
(4) 3~5 years      (5) 5 years or more

23. Purposes of doing physical exercise (at most select 3 items)

- (1) Disease prevention or cure      (2) Improving physical fitness  
(3) Losing weight and keeping fit      (4) Relieving stress & regulating mood  
(5) Socializing      (6) Others

24. Types of sports participate (at most three items)

(if choose choice (4), question 25 must be answered)

- (1) Jogging      (2) Swimming      (3) Walking  
(4) Ball games      (5) Climbing      (6) Cycling  
(7) Working out      (8) Aerobics and yangko      (9) Martial arts and qigong  
(10) Boxing      (11) Fencing      (12) Yoga  
(13) Judo      (14) Taekwondo      (15) Karate  
(16) Others

25. Most frequent ball games that the subject participates

(in order of precedence, at most three items)

- (1) Basketball      (2) Volleyball      (3) Football      (4) Table tennis  
(5) Badminton      (6) Tennis      (7) Golf      (8) Billiards

26. Location of doing physical exercise (at most three items)

- (1) Stadium/arena      (2) Park      (3) Office or home  
(4) Open ground      (5) Road or street      (6) Recreation club  
(7) Others

27. How does the subject feel each time after sports activities?

- (1) Breathing & heart rate remain almost the same  
(2) Slight increase in breathing & heart rate and perspiring slightly  
(3) Rapid breathing, increase heart rate and perspiring greatly

## 2005 Physical Fitness Report of Macao SAR Citizens

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28. Main obstacles for participating in physical exercise (at most three items)

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

- |                                     |                      |
|-------------------------------------|----------------------|
| (1) No interest                     | (2) Laziness         |
| (3) No need for doing sports        | (4) Too weak         |
| (5) Too labor intensive             | (6) No time          |
| (7) Lack of location and facilities | (8) Lack of guidance |
| (9) Lack of organization            | (10) Lack of money   |
| (11) Embarrassment                  | (12) Others          |

29. Has the subject ever heard of the “Physical Fitness Study” before?

- (1) Yes                      (2) No

30. Has the subject ever participated in the “Physical Fitness Study” before?

- (1) Yes                      (2) No

31. What does the subject think about the “Physical Fitness Study”?

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

(at most three items )

- (1) Meaningless
- (2) To understand the physical fitness status of oneself
- (3) To recognize the importance of physical exercising
- (4) To improve scientific knowledge of doing exercises

---

### 3. Testing indexes (to be filled by examiners at location)

1. Height (cm) .
2. Sitting height (cm) .
3. Weight (kg) .
4. Chest circumference (cm) .
5. Waist circumference (cm) .
6. Hip circumference (cm) .
7. Upper arm skinfold thickness (mm) .
8. Subscapular skinfold thickness (mm) .
9. Abdominal skinfold thickness (mm) .
10. Shoulder width (cm) .
11. Pelvis width (cm) .
12. Foot length (cm) .
13. Resting pulse (times/min)
14. Systolic pressure (mmHg)
15. Diastolic pressure (mmHg)
16. Vital capacity (ml)

## 2005 Physical Fitness Report of Macao SAR Citizens

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|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
|---------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| 17. Step test                                     | Time (sec)                    | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
|                                                   | Heart rate after 1min (times) | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
|                                                   | Heart rate after 2min (times) | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
|                                                   | Heart rate after 3min (times) | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
| 18. Grip strength (kg)                            |                               | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
| 19. Back strength (kg)                            |                               | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
| 20. Vertical jump (cm)                            |                               | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
| 21. Push-ups (M) / One-minute sit-ups (F) (times) |                               | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
| 22. Sit and reach (cm)                            |                               | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
| 23. OFSEC (sec)                                   |                               | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
| 24. Respond time (sec)                            |                               | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
| 25. Hearing                                       | left ear                      | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
|                                                   | right ear                     | <table border="1" style="border-collapse: collapse; width: 100%; height: 20px;"> <tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr> </table> |  |  |  |  |
|                                                   |                               |                                                                                                                                                                                                                         |  |  |  |  |
| (1) Normal                                        | (2) Abnormal                  |                                                                                                                                                                                                                         |  |  |  |  |

**Examiner:** \_\_\_\_\_

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**Data Register Manual for 2005 Physical Fitness Report of Macao  
SAR Citizens  
(Adults aged 40~59)**

Name: \_\_\_\_\_

Gender: \_\_\_\_\_

Age: \_\_\_\_\_ (years)

Working Unit: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Address: \_\_\_\_\_

**Macao Sport Development Board, Macao SAR**

**Thank you for participating in our Physical Fitness Study! This study is organized by the Macao SAR Government to promote sports for all. Please be honest and serious when filling the questionnaire and undergoing the physical examination. We promise to keep your personal information confidential and that we will not publish or use it on its own. It will only be used as part of the whole study for analyzing. Thank you for your sincere participation.**

**For any questions on the questionnaire or testing, please contact Sports Medicine Center, Macao Sport Development Board!**

**Telephone: 810896, 8934566 or 8934540!**

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### Methods for filling in questionnaire:

Please fill in the blanks with the corresponding numbers. For example, if you select Choice 1, please fill in blank with “1”. If the number happens to be two-digits, please put both digits in the same blank. For instance, if you select Choice 11, fill in the blank with [1][1]. For multiple choice questions, if you only select one or two choice(s), please write down 0 for the rest of the blank(s).

## 1. General Information

1. Macao ID card number
2. Medical care card number of Macao Department of Health
3. Gender (1) Male (2) Female
4. Date of birth  Y  M  D
5. Date of examination  Y  M  D
6. Working unit code number (to be filled by examiner)
7. Serial number (to be filled by examiner)
8. Years of residence in Macao
9. Category of occupation (1) labor work (2) non-labor work

## 2. Questionnaire

1. Birth place   
(1) Mainland (2) Macao (3) Hong Kong (4) Portugal (5) Others
2. Community of residence   
(1) S. Francisco (2) Na. Sra. do Carmo (3) S. Lourenço  
(4) Sé Catedral (5) S. António (6) S. Lázaro  
(7) Na. Sra. de Fátima



---

Please answer the following questions according to your status within the past half year

8. Average working hours per week   
(1) Unemployed (2) Less than 20 hrs (3) 20~35 hrs  
(4) 35~40 hrs (5) 40~50 hrs (6) 50 hrs or more
9. Average sleeping hours per day (including nap)   
(1) Less than 6 hrs (2) 6~9 hrs (3) 9 hrs or more
10. Quality of sleep   
(1) Poor (2) Reasonable (3) Good
11. Average walking hours per day (only count walks that last longer than 10 mins or above and not including walks during physical exercise)   
(1) Less than 30 mins (2) 30~60 mins  
(3) 1~2 hrs (4) 2 hrs or more
12. Average sitting time per day (during work, watching TV, commuting, using computer, dining or chatting etc.)   
(1) Less than 3 hrs (2) 3~6 hrs (3) 6~9 hrs  
(4) 9~12 hrs (5) 12 hrs or more
13. Cigarettes consumed   
(1) None (2) Less than 10 cigarettes per day  
(3) 10~20 cigarettes per day (4) 20 cigarettes or more per day  
(5) Stopped smoking for less than 2 years (6) Stopped smoking for 2 years or more
14. Smoking years (smokers only)   
(1) Less than 5 years (2) 5~10 years  
(3) 10~15 years (4) 15 years or more

## 2005 Physical Fitness Report of Macao SAR Citizens

15. Does the subject drink? (If choose choice (2), skip to question 18)   
(1) Yes (2) No

16. Frequency of drinking   
(1) 1 time per month (2) 1~2 times per week  
(3) 3~4 times per week (4) 5~7 times per week

17. Type of alcohol frequently drink   
(1) Liquor (2) Beer (3) Yellow wine  
(4) Rice wine (5) Wine or fruit wine (6) Mixed

18. Entertainment activities that the subject spent most during leisure time on   
(at most 3 items)  
(1) Physical exercise (2) Chess or poker (3) Traveling (4) Gathering  
(5) AV entertainment (6) House chores (7) Sleep (8) Others

19. Sport events that the subject watches frequently   
(in order of precedence, at most three items)  
(1) Basketball (2) Volleyball (3) Football (4) Gymnastics  
(5) Swimming (6) Martial arts (7) Boxing (8) Table tennis  
(9) Billiards (10) Golf (11) Badminton (12) Water polo  
(13) Baseball (14) Softball (15) Weight- lifting (16) Fencing  
(17) Wrestling or judo (18) Others

20. Average frequency of sports activities per week   
(If choose choice (1), skip to question 28)  
(1) Never (2) At most once (3) 1~2 times  
(4) 3~4 times (5) 5 times or more

21. Average duration of sports activities each time   
(1) Less than 30 mins (2) 30~60 mins (3) 60 mins or more

---

22. How long has the subject persisted to continue exercising?

- (1) Less than 6 months      (2) 6~12 months      (3) 1~3 years  
(4) 3~5 years      (5) 5 years or more

23. Purposes of doing physical exercise (at most select 3 items)

- (1) Disease prevention or cure      (2) Improving physical fitness  
(3) Losing weight and keeping fit      (4) Relieving stress & regulating mood  
(5) Socializing      (6) Others

24. Types of sports participate (at most three items)

(if choose choice (4), question 25 must be answered)

- (1) Jogging      (2) Swimming      (3) Walking  
(4) Ball games      (5) Climbing      (6) Cycling  
(7) Working out      (8) Aerobics and yangko      (9) Martial arts and qigong  
(10) Boxing      (11) Fencing      (12) Yoga  
(13) Judo      (14) Taekwondo      (15) Karate  
(16) Others

25. Most frequent ball games that the subject participates in

(in order of precedence, at most three items)

- (1) Basketball      (2) Volleyball      (3) Football      (4) Table tennis  
(5) Badminton      (6) Tennis      (7) Golf      (8) Billiards

26. Location of doing physical exercise (at most three items)

- (1) Stadium/arena      (2) Park      (3) Office or home  
(4) Open ground      (5) Road or street      (6) Recreation club  
(7) Others

27. How does the subject feel each time after sports activities?

- (1) Breathing & heart rate remain almost the same  
(2) Slight increase in breathing & heart rate and perspiring slightly  
(3) Rapid breathing, increase heart rate and perspiring greatly

## 2005 Physical Fitness Report of Macao SAR Citizens

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28. Main obstacles for participating in physical exercise (at most three items)

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

- |                                     |                         |                              |
|-------------------------------------|-------------------------|------------------------------|
| (1) No interest                     | (2) Laziness            | (3) No need for doing sports |
| (4) Too weak                        | (5) Too labor intensive | (6) No time                  |
| (7) Lack of location and facilities | (8) Lack of guidance    | (9) Lack of organization     |
| (10) Lack of money                  | (11) Embarrassment      | (12) Others                  |

29. Has the subject ever heard of the “Physical Fitness Study” before?

- (1) Yes                      (2) No

30. Has the subject ever participated in the “Physical Fitness Study” before?

- (1) Yes                      (2) No

31. What does the subject think about the “Physical Fitness Study”?

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

(at most three items)

- (1) Meaningless  
(2) To understand the physical fitness status of oneself  
(3) To recognize the importance of physical exercising  
(4) To improve scientific knowledge of doing exercises

### 3. Testing indexes (to be filled by examiners at location)

|                                        |                                |                      |                      |                      |                      |                      |  |
|----------------------------------------|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|--|
| 1. Height (cm)                         |                                | <input type="text"/> | <input type="text"/> | <input type="text"/> | .                    | <input type="text"/> |  |
| 2. Sitting height (cm)                 |                                | <input type="text"/> | <input type="text"/> |                      | .                    | <input type="text"/> |  |
| 3. Weight (kg)                         |                                | <input type="text"/> | <input type="text"/> | <input type="text"/> | .                    | <input type="text"/> |  |
| 4. Chest circumference (cm)            |                                | <input type="text"/> | <input type="text"/> | <input type="text"/> | .                    | <input type="text"/> |  |
| 5. Waist circumference (cm)            |                                | <input type="text"/> | <input type="text"/> | <input type="text"/> | .                    | <input type="text"/> |  |
| 6. Hip circumference (cm)              |                                | <input type="text"/> | <input type="text"/> | <input type="text"/> | .                    | <input type="text"/> |  |
| 7. Upper arm skinfold thickness (mm)   |                                | <input type="text"/> | <input type="text"/> |                      | .                    | <input type="text"/> |  |
| 8. Subscapular skinfold thickness (mm) |                                | <input type="text"/> | <input type="text"/> |                      | .                    | <input type="text"/> |  |
| 9. Abdominal skinfold thickness (mm)   |                                | <input type="text"/> | <input type="text"/> |                      | .                    | <input type="text"/> |  |
| 10. Shoulder width (cm)                |                                | <input type="text"/> | <input type="text"/> |                      | .                    | <input type="text"/> |  |
| 11. Pelvis width (cm)                  |                                | <input type="text"/> | <input type="text"/> |                      | .                    | <input type="text"/> |  |
| 12. Foot length (cm)                   |                                | <input type="text"/> | <input type="text"/> |                      | .                    | <input type="text"/> |  |
| 13. Resting pulse (times/min)          |                                | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |                      |  |
| 14. Systolic pressure (mmHg)           |                                | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |                      |  |
| 15. Diastolic pressure (mmHg)          |                                | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |                      |  |
| 16. Vital capacity (ml)                |                                | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |  |
| 17. Step test                          | Time (sec)                     | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |                      |  |
|                                        | Heart rate after 1 min (times) | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |                      |  |
|                                        | Heart rate after 2 min (times) | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |                      |  |
|                                        | Heart rate after 3 min (times) | <input type="text"/> | <input type="text"/> | <input type="text"/> |                      |                      |  |

## 2005 Physical Fitness Report of Macao SAR Citizens

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18. Grip strength (kg) .

19. Sit and reach (cm) .

20. OFSEC (sec)

21. Respond time (sec) .

22. Hearing left ear

right ear

(1) Normal

(2) Abnormal

**Examiner:** \_\_\_\_\_

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## 4. Seniors

### **Data Register Manual for 2005 Physical Fitness Report of Macao SAR Citizens Seniors (aged 60~69)**

Name : \_\_\_\_\_

Gender : \_\_\_\_\_

Age : \_\_\_\_\_ (years)

Senior Center : \_\_\_\_\_

Telephone Number : \_\_\_\_\_

Address : \_\_\_\_\_

**Macao Sport Development Board, Macao SAR**

**Thank you for participating in our Physical Fitness Study! This study is organized by the Macao SAR Government to promote sports for all. Please be honest and serious when filling the questionnaire and undergoing the physical examination. We promise to keep your personal information confidential and that we will not publish or use it on its own. It will only be used as part of the whole study for analyzing. Thank you for your sincere participation.**

**For any questions on the questionnaire or testing, please contact Sports Medicine Center, Macao Sport Development Board!**

**Telephone: 810896, 8934566 or 8934540**

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### Methods for filling in questionnaire:

Please fill in the blanks with the corresponding numbers. For example, if you select Choice 1, please fill in blank with “1”. If the number happens to be two-digits, please put both digits in the same blank. For instance, if you select Choice 11, fill in the blank with [1][1]. For multiple choice questions, if you only select one or two choice(s), please write 0 for the rest of the blank(s).

## 1. General Information

1. Macao ID card number
2. Medical care card number of Macao Department of Health
3. Gender (1) Male (2) Female
4. Date of birth  Y  M  D
5. Date of examination  Y  M  D
6. Senior center code number (to be filled by examiner)
7. Serial number (to be filled by examiner)
8. Years of residence in Macao

## 2. Questionnaire

1. Birth place   
(1) Mainland (2) Macao (3) Hong Kong (4) Portugal (5) Others
2. Community of residence   
(1) S. Francisco (2) Na. Sra. do Carmo (3) S. Lourenço  
(4) Sé Catedral (5) S. António (6) S. Lázaro  
(7) Na. Sra. de Fátima

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3. Education level
- (1) Below primary school                      (2) Primary school                      (3) Secondary school  
(4) University or professional college                      (5) Masters                      (6) Doctoral
4. Occupation before retirement
- (1) Legislative officer, high rank officer of public administration,  
    head of organization or manager  
(2) Professional                                              (3) Technician or assistant professional  
(4) Office clerk                                              (5) Customer service or sales  
(6) Workers in the fishery or agricultural field                      (7) Artisan or craftsman  
(8) Machine operator, driver or assembler                      (9) Non-technician  
(10) Others
5. Category of occupation before retirement
- (1) Labor work                      (2) Non-labor work
6. Working environment before retirement
- (1) Outdoor                      (2) Indoor (naturally ventilated)                      (3) Indoor (air conditioned)
7. Does the subject have any disease diagnosed by doctors within the past 5 years?
- (If the answer is negative, skip to question 9.)  
(1) Yes                      (2) No
8. Diseases experienced by the subject
- (in order of precedence, at most three diseases)
- (1) Cancer                      (2) Cardiovascular diseases                      (3) Respiratory diseases  
(4) Accidental injury                      (5) Diseases of digestive system                      (6) Hypertension  
(7) Endocrine diseases                      (8) Urinary or reproductive diseases                      (9) Diabetes  
(10) Others

---

Please answer the following questions according to your status within past half year

9. Average working hours per week
- (1) Unemployed            (2) Less than 20 hrs            (3) 20~35 hrs  
(4) 35~40 hrs            (5) 40~50 hrs            (6) 50 hrs or more
10. Average sleeping hours per day (including nap)
- (1) Less than 6 hrs            (2) 6~9 hrs            (3) 9 hrs or more
11. Quality of sleep
- (1) Poor            (2) Reasonable            (3) Good
12. Average walking time per day (only count walks that last longer than 10 mins or above and not including walks during physical activity)
- (1) Less than 30 mins            (2) 30~60 mins  
(3) 1~2 hrs            (4) 2 hrs or more
13. Average sitting time per day (during work, watching TV, commuting, using computer, dining or chatting etc.)
- (1) Less than 3 hrs            (2) 3~6 hrs            (3) 6~9 hrs  
(4) 9~12 hrs            (5) 12 hrs or more
14. Cigarettes consumed
- (1) None            (2) Less than 10 cigarettes per day  
(3) 10~20 cigarettes per day            (4) 20 cigarettes or more per day  
(5) Stopped smoking for less than 2 years            (6) Stopped smoking for 2 years or more

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15. Smoking years (smokers only)   
(1) Less than 5 years                      (2) 5~10 years  
(3) 10~15 years                              (4) 15 years or more
16. Does the subject drink? (If choose choice (2), skip to question 19)   
(1) Yes                                              (2) No
17. Frequency of drinking   
(1) Once per month                              (2) 1~2 times per week  
(3) 3~4 times per week                              (4) 5~7 times per week
18. Type of alcohol frequently drink   
(1) Liquor                      (2) Beer                              (3) Yellow wine  
(4) Rice wine                      (5) Wine or fruit wine                      (6) Mixed
19. Entertainment activities that the subject participate most during leisure time   
(at most 3 items)  
(1) Physical exercise      (2) Chess or poker      (3) Traveling      (4) Gathering  
(5) AV entertainment      (6) House chores      (7) Sleep      (8) Others
20. Sports events subject watches frequently   
(in order of precedence, at most three items)  
(1) Basketball                      (2) Volleyball                      (3) Football                      (4) Gymnastics  
(5) Swimming                      (6) Martial arts                      (7) Boxing                      (8) Table tennis  
(9) Billiards                      (10) Golf                      (11) Badminton                      (12) Water polo  
(13) Baseball                      (14) Softball                      (15) Weight-lifting                      (16) Fencing  
(17) Wrestling or judo      (18) Others
21. Average frequency of sports activities per week   
(If choose choice (1), skip to question 28)  
(1) Never                      (2) At most once                      (3) 1~2 times  
(4) 3~4 times                      (5) 5 times or more

22. Average duration for sports activities each time   
(1) Less than 30 mins      (2) 30~60 mins      (3) 60 mins or more

23. How long has the subject persisted to continue exercising?   
(1) Less than 6 months      (2) 6~12 months      (3) 1~3 years  
(4) 3~5 years      (5) 5 years or more

24. Purposes of doing exercise (at most select 3 items)   
(1) Disease prevention or cure      (2) Improving physical fitness  
(3) Losing weight and keeping fit      (4) Relieving stress and regulating mood  
(5) Socializing      (6) Others

25. Main types of sports participate (at most three items)   
(1) Jogging      (2) Swimming      (3) Walking      (4) Ball games  
(5) Climbing      (6) Cycling      (7) Working out      (8) Aerobics and yangko  
(9) Martial arts and qigong      (10) Others

26. Location for doing exercise (at most three items)   
(1) Stadium/arena      (2) Park      (3) Office or home  
(4) Open ground      (5) Road or street      (6) Recreation Club  
(7) Others

27. How does the subject feel each time during physical exercise?   
(1) Breathing & heart rate remain almost the same  
(2) Slight increase in breathing & heart rate and perspiring slightly  
(3) Rapid breathing, increase heart rate and perspiring greatly

28. Main obstacles for participating in physical exercise (at most three items)   
(1) No interest      (2) Laziness  
(3) No need for doing sports      (4) Too weak  
(5) Too labor intensive      (6) No time  
(7) Lack of location and facilities      (8) Lack of guidance  
(9) Lack of organization      (10) Lack of money  
(11) Embarrassment      (12) Others

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29. Has the subject ever heard of the “Physical Fitness Study” before?

(1) Yes

(2) No

30. Has the subject ever participated in the “Physical Fitness Study” before?

(1) Yes

(2) No

31. What does the subject think of “Physical Fitness Study”?

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

(at most three items)

(1) Meaningless

(2) To understand the physical fitness status of oneself

(3) To recognize the importance of physical exercising

(4) To improve scientific knowledge of doing exercises

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### 3. Testing indexes (to be filled by examiners at location)

1. Height (cm) .
2. Sitting height (cm) .
3. Weight (kg) .
4. Chest circumference (cm) .
5. Waist circumference (cm) .
6. Hip circumference (cm) .
7. Upper arm skinfold thickness (mm) .
8. Subscapular skinfold thickness (mm) .
9. Abdominal skinfold thickness (mm) .
10. Shoulder width (cm) .
11. Pelvis width (cm) .
12. Foot length (cm) .
13. Resting pulse (times/min)
14. Systolic pressure (mmHg)
15. Diastolic pressure (mmHg)
16. Vital capacity (ml)
17. Grip strength (kg) .
18. Sit and reach (cm) .
19. OFSEC (sec)
20. Respond time (sec) .

**Examiner:** \_\_\_\_\_

### **Appendix 4: Method for Filling out Data Register Manual**

#### **1. Basic information**

Name, gender and age were important information used to classify subjects into different categories and to file data manuals. Therefore, they should be honest. They could be filled out either by subjects themselves or by examiners after examination. When filling, examiners needed to pay attention to the accuracy and integrity of information. If any uncertainty occurred, they should consult the subjects face to face. All questions must be filled. After testing, these manuals should be filed and saved according to gender and age group in time. Requirements for filling out the cover of the manual were as follows:

##### **1.1. Name and gender**

Honest information was to be filled.

##### **1.2. Age**

Age was to be filled in after making calculation by methods mentioned in Sampling, **Part Two**.

##### **1.3. Names, addresses and telephone numbers of kindergartens, schools, working units and senior centers**

Names of these institutes were to be filled on the lines. For young children who had not attended kindergartens, “Have not attended kindergarten” should be written down.

Telephone numbers of which the subjects could be easily contacted should be written down.

Address needed to be home address.

##### **1.4. Explanations**

Before examination, examiners needed to remind the subjects to read the explanations in the manuals, in order to have a sound understanding of the study.

#### **2. Category by code:**

##### **2.1. Macao ID Card number and Medical Care Card Number of Macao Department of Health**

Subjects should provide honest information. For students, they also needed to provide their student card number issued by Education and Youth Bureau.

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## 2.2. Gender

The national gender code system was adopted. 1 represented male and 2 represented female.

## 2.3. Birth date and examination date

These two dates were to be filled according to the calendar. Examination date to be filled by examiners, referred to the day subjects started to participate in examination. Methods for filling were as follows: the first four blanks were for year; the fifth and sixth blanks for month (If subjects were born in the months from January to September, the fifth blank should be “0”); the seventh and eighth blanks for day (If subjects were born on dates ranging from 1st to 9th, the seventh blank should be “0”)

e.g.: a subject was born on 12<sup>th</sup> April, 1964 and the examination date was 12<sup>th</sup> April, 2005, the manual should be filled in as follows:

Birth date:                    

|   |   |   |   |
|---|---|---|---|
| 1 | 9 | 6 | 4 |
|---|---|---|---|

 Y 

|   |   |
|---|---|
| 0 | 4 |
|---|---|

 M 

|   |   |
|---|---|
| 1 | 2 |
|---|---|

 D

Examination date:           

|   |   |   |   |
|---|---|---|---|
| 2 | 0 | 0 | 5 |
|---|---|---|---|

 Y 

|   |   |
|---|---|
| 0 | 4 |
|---|---|

 M 

|   |   |
|---|---|
| 1 | 2 |
|---|---|

 D

## 2.4. Code numbers of kindergartens, schools, working units and senior centers

Before examination, participating institutes were coded by the Physical Fitness Monitor Center for Macao Citizens with Arabic numbers. Participating institutes were registered and saved according to these code numbers.

Kindergarten code numbers: 01-20. School code numbers: 21-40. Working units code numbers: 41-70. Senior center code numbers: 71-100.

When filling, each digit should occupy one blank

e.g.: the code number for Macao Polytechnic University was “28”, then students from this university need to fill in the blanks this way: 

|   |   |
|---|---|
| 2 | 8 |
|---|---|

## 2.5. Serial number

Serial number referred to subject’s code number. Supervised by the Monitor Center, subjects were coded according to different categories: young children, students, adults and seniors, different age groups and different gender. Examiners filled in the serial numbers and kept them for reference. Serial number ranged from 0001-9999.

## 2.6. Years of residence in Macao

This question asked how long the subject had lived in Macao continuously and was recorded in years.

e.g. If a subject had lived in Macao for 8 years, it would be filled as: 

|   |   |
|---|---|
| 0 | 8 |
|---|---|

### 2.7 Codes for occupation

This item was for adults only. Labor work referred to labor-intensive work, such as sales, customer service, workers of the fishery and agricultural field, artisan, craftsman, machine operator, driver or assembler. Non-labor intensive work referred to brainwork jobs, such as organization head, professional, technician, office clerk, etc. Code 1 stood for labor intensive work; code 2 for non-labor intensive work.

e.g.: If a subject was an office clerk, it would be filled as:

### 3. Questionnaire

Questionnaire was composed of both single-choice questions and multiple choice questions.

#### Single-choice questions

Subjects selected the choice which was closest to their situation and put the corresponding number in the blank.

e.g. If the guardian for young child was an elderly person, the corresponding number for Question 14 would be 2. The blank was to be filled as:

If the corresponding number was two-digits, both digits should be filled in the same blank. For instance, if the answer was (11), the blank should be filled in as:

#### Multiple choice questions

Subjects selected choices (at most 3 choices) which were closest to their situation and put the corresponding numbers in the blanks according to their precedence.

If a subject only selected one or two choice(s), the last one or two blank(s) needed to be filled in with a "0". As a reminder, subject needed to select at least one choice for multiple choice questions.

For example: A young child had three hobby (interest) classes during his spare time: sports activities, tutoring and, dancing and music, then the blanks were to be filled in as:

Another example: A subject had only selected "sports activities", the blank then were to be filled in as:

Before filling out the questionnaire, examiners should remind subjects to read questions and answered carefully in order to avoid errors.

#### 3.1. Questionnaire for young children

The questionnaire for young children included three parts: information about the young children, paternal personal information and maternal personal information. Information of the young children could be completed by their parents.

##### Information of young children

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### 3.1.1. Birth place

This referred to the place the birth certificate of the child was issued by hospitals.

e.g. If the child was born in Macao, the blank should be filled in as:

### 3.1.2 Community of residence

This referred to the community the subject lived in

e.g. If a subject lived in S. Francisco, the blank should be filled in as:

### 3.1.3. Birth weight and birth length

These should be according to the birth certificate issued by the hospital. If it was not clear, the blank should be filled in with 99.9.

### 3.1.4 Gestational age

This should be identified by the doctor. Usually, a gestational age of 40 weeks was medically considered as term (standard). Premature birth referred to birth at least two weeks before term. Post-term was birth at least two weeks after term. Term birth was birth within two weeks before or after standard.

### 3.1.5. Type of feeding within 4 months after birth

Formula feeding referred to any feedings other than breast milk (e.g. milk or milk powder). Mixed feeding referred to the combination of breast feeding and formula feeding.

### 3.1.6. Numbers of siblings and birth order

If the subject was an only child, the blank was filled in with 0.

### 3.1.7. Frequency of flu and fever within the past year

Referred to the past year from the examination date. Flu symptoms included stuffy nose, runny nose, sneezing, sore throat, fever, muscle pain and sometimes with gastrointestinal problems, such as stomach ache, vomiting or diarrhea.

### 3.1.8 Diseases experienced

This referred to whether the young children had been diagnosed with any diseases since birth. The disease needed to be diagnosed by doctors in a hospital. This was a multiple choice question. The information filled should be honest and was according to the diagnosis from a hospital with at most three diseases. If the disease diagnosed could not be found from the choices, the selected “others”. If no diseases had been experienced, “no” was selected and skipped to question 11.

### 3.1.9. Sleeping time

This referred to the average sleeping hours (nap time included) in a day in the past half year.

### 3.1.10. Kindergarten attendance

Half day meant the young children only spent half a day at kindergarten. Full day meant the young children spent a full day at kindergarten and night time at home. Boarding referred to the young children living at the kindergarten and returned home only during weekends or holidays.

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### 3.1.11. Guardian

This referred to the person who took care of the child most of the time at home and who was most often with the child. The goal was to investigate who had the most influence on the child's daily habits and behavior.

### 3.1.12. Hobby (interest) classes

A multiple choice question, referring to the type of hobby classes the young children participated.

e.g.: A subject took sports activities, tutoring and chess as hobby classes, then the blanks were to be filled as: 

|   |   |   |
|---|---|---|
| 2 | 3 | 4 |
|---|---|---|

If the subject did not attend any hobby classes, the blanks should be filled in with 1, 0, 0.

### 3.1.13. Average time spent on outdoor activities per day

This referred to the average outdoor time spent on playing, games, morning exercises and sports activities per day within the past half year.

### 3.1.14. Time spent on watching TV, video and playing video games per day

This referred to the average time spent on watching TV, video and playing video games per day within the past half year.

### 3.1.15. Types of sports activities most often participated in

This was a multiple choice question. Mainly referred to the sports activities played outside of kindergarten, which could include hobby classes or activities at recreation clubs.

### Information of children's parents

#### 3.1.16. Birth date

Honest information was required.

#### 3.1.17. Birth place

Refer to 3.1.1.

#### 3.1.18. Years of residence in Macao

This referred to the number of years the subject's parents had lived in Macao continuously.

#### 3.1.19. Height and weight

If possible, the kindergarten or examiners were to ask to measure the parents' weight and height before filling these two blanks, in order to obtain accurate data.

#### 3.1.20. Education level

This referred to the highest education level the subjects' parents had received and could be proved by diplomas or certificates.

#### 3.1.21. Occupation

This referred to the subjects' parents' current occupation (for the category of professions,

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please refer to the “Working Manual for 2005 Physical Fitness Study of Macao Citizens”).

#### 3.1.22. Sports activity

Sports activities referred to all kinds of exercises, either with or without the help of equipments, to increase fitness, stress management or life enrichment.

Please be honest when filling. If the subjects’ parents never participated in any sports activities, they could skip question 9 and 10, while for those who played sports could select at most three sports.

### **3.2 Questionnaires for children and adolescents (students)**

Primary school students could fill out this questionnaire with the help of their parents. Secondary school students and university students were needed to complete it by themselves.

#### 3.2.1. Birth place and community of residence

Refer to 3.1.1. and 3.1.2.

#### 3.2.2. Disease experienced

This referred to any disease experienced within the past five years. The type of diseases should be diagnosed by doctors and the maximum amount of diseases written down should not be more than three. If disease experienced could not be found from the choices, select “others”. If no disease had been experienced, “no” was selected and then skipped to question 5.

#### 3.2.3. Numbers of siblings and birth order

Refer to 3.1.6.

#### 3.2.4. School attendance

Half day referred to the subject only spending half a day at school. Full day referred to the subject spending day time at school and night time at home. Boarding referred to the subject living in school and returned home only during weekends or holidays.

#### 3.2.5. Transportation means and commuting time

This referred to the transportation means to and from school and the total commuting time to and from school of students within the past half year. Please fill accurately.

#### 3.2.6. Sports activities classes

This referred to how students felt after PE classes within the past half year. The change in breathing and heart rates were two important indexes in making judgments.

#### 3.2.7. Time spent on outdoor activities during leisure time per day

This referred to the average time spent on outdoor per day within the past half year. It included time spent on playing, games or sports activities.

#### 3.2.8. Time spent on watching TV, video or playing video games

Refer to 3.1.14.

### 3.2.9. Hobby classes

Refer to 3.1.12.

### 3.2.10. Sports activities

A multiple choice question which referred to the students' participation in sports activities within the past half year. If subject selected ball games, the type of ball game students participated most should be chosen. In addition, subjects also needed to answer the duration the student spent on each time and how he/she felt after.

### 3.2.11. Time for homework

This referred to the average time spent on doing homework and revision at home every day.

### 3.2.12. Sleeping hours

Refer to 3.1.9.

## 3.3 Questionnaires for adults and seniors

Questionnaires for adults and seniors should be completed by subjects themselves on the spot. When questions arose while filling out the questionnaires, the subjects would be asked the examiners immediately.

### 3.3.1. Birth place

Refer to 3.1.1.

### 3.3.2. Community of residence

Refer to 3.1.2.

### 3.3.3. Education level and occupation

Refer to 3.1.20 and 3.1.21.

### 3.3.4. Working environment

Adults should answer according to their current occupations. "Indoor jobs" referred to an indoor working environment and was further classified into naturally ventilated and air-conditioned.

Seniors should answer this question according to their occupation before retirement. According to their level of intensity of labour work, labour intensive or non-labour intensive should be chosen.

### 3.3.5. Disease experienced

Refer to 3.1.8 and 3.2.2.

### 3.3.6. Average working hours and sleeping hours per week

Average working hours per week was the sum of the average working hours per day. Average sleeping hours was calculated the same way (naps included). As a reminder, when choices were related to a range of time and the upper limit of the first choice was the lower limit

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of the second choice, for instance, (1) 20-35 hours (2) 35- 40 hours, subject should select the second choice when he/she reached the amount of 35 hours. The same applied to questions 9, 11, 12, 14, 16, 20, 21, and 22.

### 3.3.7. Quality of sleep

“Poor” should be selected if the subject felt asleep slowly, dreamt a lot and suffered from insomnia frequently. “Good” was selected when subject felt asleep quickly, slept soundly and did not have insomnia. “Reasonable” was selected when the quality of sleep was between “good” and “poor”.

### 3.3.8. Average walking time per day

It included walking time to and from work, shopping and during work. Walking less than 10 minutes each time or walking during sports activities did not count.

### 3.3.9. Average sitting time per day

This included sitting time during work, reading, watching TV or entertainment and other activities that was mainly done by sitting but excluded activities like cycling.

### 3.3.10. Smoking and drinking

Honest information was required.

### 3.3.11. Entertainment activity during leisure time

A multiple choice question, in which choices like “chess and poker”, referred to all kinds of chess, mahjong or poker. “Gathering” referred to various types of gathering, dining or chatting. “Traveling” referred to shopping, going to park or traveling. “AV entertainment” referred to watching TV, surfing the internet, listening to radio or going to concert.

### 3.3.12. Sports events most frequently watched

A multiple choice question in which subject filled in the corresponding numbers in the blanks according to their most frequently watched sports events.

### 3.3.13. Sports activity

Refer to 3.1.22. If subject selected “never”, then questions 22-27 could be skipped. If subject selected “ball games”, specification of ball games was needed.

Feelings after sports activities were described by the change in breathing and heart rate and the amount of perspiration.

### 3.3.14. Understanding of “Physical Fitness Study”

The Physical Fitness Study was a process that included testing, evaluating and giving advice with the goal of improving the physical fitness of the Macao citizens. Subjects could answer the question according to his/her understanding of this study.

## 4. Examined indexes

4.1. When recording examination data, examiners should remember that each blank was

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only for one Arabic number. If examination and recording were conducted by two different people, the examiner needed to loudly report the result and the recorder should loudly repeat the number in order to check the accuracy.

4.2. When recording the results, all blanks before and after the decimal should be filled. If the result was a whole number, the blank after the decimal should be filled with a “0”. If there were three blanks before the decimal and the result was only two-digits, the first blank should be filled with “0”.

For instance: a subject’s height was 168.5 cm and weight was 59.0 kg, the blanks should be filled in like this:

height    

|   |   |   |
|---|---|---|
| 1 | 6 | 8 |
|---|---|---|

 . 

|   |
|---|
| 5 |
|---|

 (cm)

weight    

|   |   |   |
|---|---|---|
| 0 | 5 | 9 |
|---|---|---|

 . 

|   |
|---|
| 0 |
|---|

 (kg)

4.3. For sit and reach, the first blank should be “+” or “-”, representing a positive or negative result. Results should be filled from the second blank.

4.4. For walking on the balance beam, if the young child succeeded in moving forward on the beam, “1” was filled in the blank. If the young child managed to move sideways on the beam, “2” was filled in the blank. If the young child failed to complete either, “3” was filled in the blank.

4.5. For successive jumps with both feet, if the young child failed to do it, “99.9” was filled in the blank.

4.6. For 50 m x 8 shuttle run, 800 m run or 1000 m run, results should be recorded in seconds.

**Appendix 5: Participating Institutes for the 2005 Physical Fitness Report of Macao SAR Citizens**

| Subjects       | Kindergarten code number | Name of kindergarten                                               | Community                                   |         |
|----------------|--------------------------|--------------------------------------------------------------------|---------------------------------------------|---------|
| Young children | 01                       | Keang Peng School (kindergarten)                                   | Paróquia de Nossa Senhora de Fátima (north) |         |
|                | 02                       | Hou Kong Middle School (attached kindergarten)                     |                                             |         |
|                | 03                       | Pui Ching Middle School (kindergarten)                             | Paróquia de S. Lázaro (central)             |         |
|                | 04                       | Chan Sui Ki Perpetual Help College (branch school- kindergarten)   |                                             |         |
|                | 05                       | Pooi To Middle School (branch school of Praia Grande-kindergarten) | Paróquia da Sé Catedral                     | (south) |
|                | 06                       | Estrela do Mar School (kindergarten)                               | Paróquia de S.Lourenço                      |         |

| Subjects                            | School /university Code number | Name of school/ university                                                                 | Community                                   |         |
|-------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------|---------|
| Children and Adolescents (Students) | 21                             | Keang Peng School (including primary school and secondary school)                          | Paróquia de Nossa Senhora de Fátima (north) |         |
|                                     | 22                             | Hou Kong Middle School (including primary school and branch school in Taipa)               |                                             |         |
|                                     | 23                             | Pui Ching Middle School                                                                    | Paróquia de S. Lázaro (central)             |         |
|                                     | 24                             | Chan Sui Ki Perpetual Help College                                                         |                                             |         |
|                                     | 25                             | Pooi To Middle School (including branch school of Praia Grande and primary school section) | Paróquia da Sé Catedral                     | (south) |
|                                     | 26                             | Estrela do Mar School (including branch school)                                            | Paróquia de S.Lourenço                      |         |
|                                     | 27                             | University of Macau                                                                        | Paróquia de Nossa Senhora do Carmo (Taipa)  |         |
|                                     | 28                             | Macao University of Science and Technology                                                 |                                             |         |
|                                     | 29                             | Macao Polytechnic Institute                                                                | Paróquia da Sé Catedral                     |         |
|                                     | 30                             | Kiang Wu Nursing College of Macao                                                          | Paróquia de Santo António                   |         |
|                                     | 31                             | Institute for Tourism Studies                                                              | Paróquia de Nossa Senhora de Fátima         |         |

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| Subject       | Working unit<br>code number | Name of working organization                       |
|---------------|-----------------------------|----------------------------------------------------|
| <b>Adults</b> | 41                          | Department of Health                               |
|               | 42                          | Education and Youth Affairs Bureau                 |
|               | 43                          | Macao Government Tourist Office                    |
|               | 44                          | Statistics and Census Bureau                       |
|               | 45                          | Macao Sport Development Board                      |
|               | 46                          | Civic and Municipal Affairs Bureau                 |
|               | 47                          | Naval Office                                       |
|               | 48                          | Port Authority                                     |
|               | 49                          | Social Welfare Institute                           |
|               | 50                          | Land, Public Works and Transport Bureau            |
|               | 51                          | Escola Estrela do Mar                              |
|               | 52                          | Tai Fung Bank Limited                              |
|               | 53                          | Future Bright Group                                |
|               | 54                          | Menzies Macau Airport Services Ltd.                |
|               | 55                          | Caltex Oil (Macao) Ltd.                            |
|               | 56                          | Labour Affairs Bureau                              |
|               | 57                          | CEM-Macao Electricity Company, Ltd.                |
|               | 58                          | Xin Kang Heng Holdings Ltd.                        |
|               | 59                          | MPI-Career Development Centre                      |
|               | 60                          | The Women's Association of Macau                   |
|               | 61                          | Macao New Chinese Youth Association                |
|               | 62                          | Galaxy Casino, S.A.                                |
|               | 63                          | Kiang Wu Nursing College of Macao                  |
|               | 64                          | Others (individual)                                |
|               | 65                          | Venetian Macau, S.A.                               |
|               | 66                          | Volunteers Association                             |
|               | 67                          | Beneficência Sun Tou Tong de Macau, Sociedade de   |
|               | 68                          | União Geral das Associações dos Moradores de Macau |
|               | 69                          | Fishermen Association                              |
|               | 70                          | Macao Federation of Trade Unions                   |

| <b>Subject</b>                                                                                                            | <b>Senior center code number</b> | <b>Name of senior center</b>                                                                 | <b>Community</b>                                              |                                             |  |
|---------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------|--|
| <b>Seniors</b>                                                                                                            | 71                               | Centro de Convívio do Bairro do Hipódromo, Bairro da Areia Preta e Iao Hon                   | Paróquia de Nossa Senhora de Fátima (north)                   |                                             |  |
|                                                                                                                           | 72                               | Centro de Convívio do C.H.T. Patane da UGAM                                                  |                                                               |                                             |  |
|                                                                                                                           | 73                               | Centro de Dia da Ilha Verde                                                                  |                                                               |                                             |  |
|                                                                                                                           | 74                               | Asilo de Betânia                                                                             |                                                               |                                             |  |
|                                                                                                                           | 75                               | Casa para Anciãos da Paróquia de Santo António                                               | Paróquia de Santo António and Paróquia de S. Lázaro (central) |                                             |  |
|                                                                                                                           | 76                               | Centro de Convívio da Associação de Mútuo Auxílio dos Moradores do Bairro de San Kio         |                                                               |                                             |  |
|                                                                                                                           | 77                               | Centro de Convívio da Associação de Mútuo Auxílio dos Moradores do Sam Pá Mun                |                                                               |                                             |  |
|                                                                                                                           | 78                               | Centro de Dia do Porto Interior                                                              | Paróquia da Sé Catedral                                       | south and off-shore island                  |  |
|                                                                                                                           | 79                               | Centro para Idosos da Casa Ricci                                                             | Paróquia de S.Lourenço                                        |                                             |  |
|                                                                                                                           | 80                               | Centro de Convívio “Missão Luterana de Hong Kong e Macau / Centro de Terceira Idade Yan Kei” | Paróquia de São Francisco Xavier, (Coloane)                   |                                             |  |
|                                                                                                                           | 81                               | Centro de Cuidados Especiais Longevidade (Serviço de Apoio Domiciliário)                     | Paróquia de Nossa Senhora do Carmo (Taipa)                    |                                             |  |
|                                                                                                                           | 82                               | Centro de Convívio “Hong Nin Chi Ka” da Associação de Agricultores de Macau                  |                                                               | Paróquia de Nossa Senhora de Fátima (north) |  |
|                                                                                                                           |                                  | Centro de Dia de Mong - Há                                                                   |                                                               |                                             |  |
|                                                                                                                           |                                  | Centro de Cuidados Especiais Rejuvenescer                                                    |                                                               |                                             |  |
| Centro de Lazer e Recreação dos Anciãos da Associação de Beneficência e Assistência Mútua dos Moradores do Bairro “Tai O” |                                  | Paróquia de Santo António and Paróquia de S. Lázaro (central)                                |                                                               |                                             |  |
| Centro de Convívio Casa dos “Pinheiros”                                                                                   |                                  |                                                                                              |                                                               |                                             |  |

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| Subject        | Senior center code number | Name of senior center                                                                              | Community                                                                                    |                            |
|----------------|---------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------|
| <b>Seniors</b> | 82                        | Centro de Lazer e Recreação das Associações dos Moradores da Zona Sul de Macau                     | Paróquia da Sé Catedral and Paróquia de S.Lourenço                                           | south and off-shore island |
|                |                           | Centro de Lazer e Recreação dos Anciãos da Associação dos Residentes do Bairro da Praia do Manduco |                                                                                              |                            |
|                |                           | Associação dos Residentes da Rua 5 de Outubro                                                      |                                                                                              |                            |
|                |                           | Centro de Lazer e Recreação dos Anciãos da União Geral das Associações dos Moradores de Macau      |                                                                                              |                            |
|                |                           | Centro de Convívio da Associação dos Habitantes das Ilhas Kuan Iek                                 | Paróquia de São Francisco Xavier, and Paróquia de Nossa Senhora do Carmo (Coloane and Taipa) |                            |
|                |                           | Centro de Simiao                                                                                   |                                                                                              |                            |
|                |                           | Centro do Bairro de Taipa                                                                          |                                                                                              |                            |

Note: Participating institutes were listed not only according to the four age category, but also according to the test date.

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