

# Physical Fitness Test for the Community 2005



## A Report for the Study of The Physical Fitness Test for the Community

Steered by

**Community Sports Committee**

Organized by



**Leisure and Cultural  
Services Department**

Supported by



The Chinese University of Hong Kong  
Department of Sports Science & Physical Education



Physical Fitness Association of Hong Kong, China Ltd.

## **Executive Summary**

With the aims to enable more individuals to have a general understanding of one's own fitness condition, to set up a database on the physical fitness of people of Hong Kong, to identify the relationship between physical exercise pattern and physical fitness of the Hong Kong citizens, and to identify priority areas for improvement to enhance the overall physical fitness of the community, the Leisure and Cultural Services Department commissioned the Department of Sports Science and Physical Education of the Chinese University of Hong Kong, and the Physical Fitness Association of Hong Kong, China, to conduct a "Physical Fitness Test for the Community Project" (the Project) in the year 2005-2006. The project was steered by the Community Sports Committee of the Sports Commission and organized by the Leisure and Cultural Services Department (LCSD).

2. The community physical fitness and activity study, which included a series of standardized physical fitness tests and questionnaire survey, in line with the China National Fitness Survey, was conducted in all 18 districts of Hong Kong from 26 Nov 2005 to 29 March 2006. Targeted participants were Hong Kong citizens age 3-69 year-old. More than 8,000 participants took part in the project. As a result, 6,543 participants completed the fitness tests, 6,922 participants completed the questionnaires, and amongst which 6,169 participants completed both the physical fitness tests and questionnaire surveys.

3. Data on the Hong Kong citizens' physical fitness, activity pattern, and lifestyle profiles were collected. Results indicate that physical fitness of Hong Kong people declines with age. Close to 20% and 30% of children and young adults were overweight, with more than half of the male sample aged 30 and above overweight. 33.8% of children and youth and 26% of adult sample were active enough to achieve health benefits, whereas 13.5% children and youth and 21% of adults remained sedentary. Findings also suggested significant association between the level of participation in physical activities and fitness level in general. The higher the activity level, the higher the fitness level. Family income, smoking habits,

TV/Computer watching, and parents' exercise habit are all associated with physical activity participation and health.

4. Popular activities in young children were cycling and ball games, and for children and adolescents were ball games and swimming, whereas for adults were walking and running. The most frequently cited reasons for being inactive were 'feeling tired' and 'lazy'. Parents have a significant influence on their children's lifestyle. Therefore parent-children exercise promotion programme should be emphasized.

5. According to these results, it is suggested that periodical fitness and activity survey should be conducted in future, in both cross-sectional and longitudinal manner. It is worthwhile to explore the possibility of establishing long-term fitness testing center with the collaboration of fitness professional bodies which offered qualified fitness testers. Physical activity and fitness promotion campaign should be strongly encouraged and supported because of its strong association with health maintenance, disease prevention, enhancement of the quality of life, and healthcare cost reduction. Education programmes which incorporate health messages such as quitting smoking, proper diet, parental influence, and TV/Computer watching time should be considered together when promoting physical fitness and activity program. Other countries have developed nationwide health objectives which target to improving the level of physical fitness and activity, and it is of value to make reference to such initiatives in future.

## **Conclusions**

1. According to a World prestigious health report, the US Surgeon Generals' report on Physical Activity on Health (U.S. Department of Health and Human Services, 1996), regular physical activity that is able to achieve health benefits is defined as "accumulating at least 30 minutes of any kind of moderate physical activity in most days of the week (i.e. 3-5 days)". Moderate exercise intensity refers to the

physical activity level that is hard enough to raise significant heart beats and breathing, and may accompany with mild sweating, yet still be able to talk fluently. There is a wealth of evidence about the benefits of regular physical activity on health enhancement and maintenance, improvement of physical fitness, as well as prevention of chronic diseases such as cardiovascular disease, type II diabetes, hypertension, stroke, obesity, and some kind of cancer. It has been suggested that children and adolescent should build regular activity habit to improve physical fitness and overall health. Regular physical activity is also important to maintain ideal body weight beginning from early childhood through the entire adulthood years. Young adults need regular exercise to achieve and maintain peak bone mass, while older adults can improve and maintain muscle strength and agility with regular physical activity (U.K. Chief Medical Officer Annual Report, 2004; U.S. Department of Health and Human Services, 1996, 2000). It is also proved that the positive influences of physical activity go beyond that of improving health (WHO, 2002), but also the overall quality of life. Interventions that increase physical activity and improve health awareness and behaviors among Hong Kong people could have positive effect on preventing serious acute and chronic health problems (U.K. Chief Medical Officer Annual Report, 2004; U.S. Department of Health and Human Services, 2000), and thus a significant reduction in health care cost as ultimate benefits of the society. Regular physical activity has been found to be one of the most important strategies in preventive medicine (U. S. Department of Health and Human Services, 1996). To educate and improve the health and well-being of Hong Kong citizens, government involvement in community-wide intervention or programme is necessary.

To strategically implement exercise and fitness promotion programs, baseline data on the level of physical fitness and activity of Hong Kong citizens is necessary so that effective evaluation and monitoring of these programs can be made. The present project is the first project in Hong Kong's history that establish a baseline data on physical fitness and activity level of Hong Kong people, which covers all 18 districts and wide age range of 3 -69 years-old. The

present study not only provides a large database for establishing norms and profiles of physical fitness, activity and lifestyle of Hong Kong people, but also serves as an important milestone for future study about the status and changes of physical fitness and activity.

2. Results from the present study indicate that physical fitness of Hong Kong people decline with age. Overweight and obesity is a serious health problem in Hong Kong. As many as 20% of adolescent boys, 27% of young adult men, and more than 50% of adult men age 30 years and above are overweight. Female citizens possess a similar trend as male citizens, although slightly lower than male. The prevalence in overweight and obesity increase significantly as age increase. The present study also provides strong evidence that level of physical activity participation did make significant association to personal health and physical fitness. More active people would have more desirable body composition, smaller waist circumference, better musculoskeletal flexibility, strength and endurance, and higher cardiovascular fitness. However, in adults sample, no association between agility (test of reaction time) and physical activity participation. These results provide strong supports for establishing long term policies, health objectives, and promotional campaigns in enhancing physical fitness of Hong Kong citizens.
3. It should be noted that there are some limitations in the sampling of this study. Although the sample is drawn from all 18 districts of Hong Kong and the sampling distribution is fairly similar to the population, the data is drawn from a community fitness test setting and participations were walk-in volunteers, the data may reflect a healthier group of the community. By looking at the physical activity participation pattern, as many as 33.8% of children and youth, and as many as 26% of adult sample, were active enough to reach the minimal health criterion. Previous study revealed that only 23.7% of Hong Kong adults were classified as active using the same criterion (Hui and Morrow, 2001). Moreover, only 4.3% of the adult samples were smokers.
4. For activity preference, many children or their parents chose sedentary activities

such as painting, calligraphy, musical instrument playing, as their leisure time activities instead of physical activity participation. For physical activity, the most popular activities are ball games and swimming in children and youth age 3-19 years-old, whereas walking and running are the most popular physical activities in adults. However, the top priority of leisure time activity in adults was AV entertainment (26%), followed by physical fitness training (19.7%). It is also alarming that as many as one-third adult sample slept 6 hours or less a day. More than two-third of adult sample walk 60 minutes or less per day. The most reason being claimed by adult sample as barrier of exercise participation is “being lazy”, whereas children and adolescents reflected that the most important reason for not participating in long distance running (60%) and strength training (56%) were “too tired”.

5. The present study also found that family income affects the physical activity participation in children and youth, but not in adults. Smokers demonstrated poorer profile of body composition. More than 1 hour of TV / Computer watching also marks a significant increase in body mass index in children and adolescents and a decline in physical activity of girls. Parental influence also plays a significant role, especially father in a family, in affecting the physical activity participation of their children. The more active the parents, the higher the activity level of their children. These results reveal that demographic information plays an important role associate with physical fitness, health, and activity. Tailor-made educational programs that disseminate strong health messages, such as reducing TV watching time, smoking cessation, and parent-children relationship, which target different demographic groups, are important when planning effective exercise promotion programs.

## **Recommendations**

1. This is the first large-scale citywide physical fitness survey which covered all 18 districts of Hong Kong with a wide age range of 3-69 years-old. Age and

gender specific normative data is established. However, evaluation of the fitness and activity profiles is still limited due to no prior data of similar scale of fitness and activity surveys are available for comparison. Therefore it is recommended to conduct similar scale of fitness and activity survey periodically, preferably around every 3-5 years interval. Moreover, the survey should not only cross-sectional but also longitudinal so that tracking of individual changes in fitness, health, activity level, and lifestyle can be made. Longitudinal data plays a more important role than cross-sectional data for reflecting the real impact of activity and lifestyle on fitness and health. To achieve this goal, fitness testing sites can be developed in several major districts of Hong Kong, or under the LCSD facilities which are easily accessible by citizens, for conducting periodical fitness assessment. These testing sites can also be set-up as educational center for promoting and disseminating the correct concepts of physical fitness, activity, and body weight image. Possibility of involving professional fitness organizations, such as the Hong Kong Physical Fitness Association, can also be invited to collaborate in implementing the fitness test and educational programs.

2. Level of physical fitness and activity plays important role in health maintenance, weight control, disease prevention, improvement in the quality of life, and reduction of healthcare cost. It is strongly suggested that continuous effort be made to promote regular exercise participation and thus improving physical fitness. Large scale exercise promotion such as the “Exercise for All” campaign (普及健體運動) should be promote in a long term basis. Since 1995, the Peoples of Republic China has determined “Fitness for All” as their national health objective. Since then significant resource, education, and research are implemented throughout the country. The United State has established a government funded and independent agency called the “National Coalition for Promoting Physical Activity” (NCPA) as a result of the release of the Surgeon General Report on Physical Activity and Health (1996). Increasing the level of physical activity becomes the top priority of their national health goal, follow by obesity reduction and smoking cessation. Professional bodies like the American

College of Sports Medicine, American Heart Association, President Challenge for Physical Fitness Council ...etc jointed the NCPPA for implementing nationwide physical activity promotion such as the production and broadcasting TV short episodes about the importance of regular physical activity. To learn from these experiences, we may set up citywide health objectives in Hong Kong and put increasing the level of physical activity as one of our top priority. Once objectives are established, evaluation can be easily made in future to see if our existing resources are effective to achieve the health objectives.

3. In young kids, the top five exercise training events are cycling, ball games, swimming, dancing, and running. In children and adolescents, the top five exercise training events are ball games, swimming, athletics, rope skipping and cycling. All these activities are provided by the LCSD venues, and should be continued to support and promote. These activities are also age-appropriate and well-matched to facilitate the physical growth and development of children and adolescents. For adults population, personal fitness training activities such as walking, running become the most popular exercise, follow by ball games, hiking, swimming. Therefore, we should encourage more lifestyle activities to the adults population because these activities are more feasible for them to be implemented from their busy life. Large scale exercise promotion programs such as walking carnivals, family ball games carnivals (such as basketball, soccer, badminton, table-tennis, squash ...etc) and others (such as jogging, Tai-chi, Yoga ...etc). can be organized by the Government and community organizations for promoting the active lifestyle.
4. In related to pt. 3 above, no matter which type of activities that we recommended for different age groups, it is also important to observe a general rule of exercise prescription, that is:
  - for elementary school-aged children, to *accumulate* at least 30-60 minutes of age-appropriate and developmental appropriate physical activity on all, or most, days of the week;
  - for adolescents, to engage in 3 or more sessions per week of physical



activities that *last at least* 20 minutes at a time that require moderate to vigorous intensity of exertion;

- for adults, to *accumulate* at least 30 minutes of moderate activities for adults on most days, if not all, of the week. Such volume of exercise is minimal to achieve health benefits.

For improvement of physical fitness, higher volume is necessary, however, consultation from certified fitness trainers is important in order to ensure scientific and safe exercise training program, which should be individualized. Older adults and high risk group should consult physicians and participate in medical examination before enrolling in exercise training. According to the WHO document entitled “Global Strategy on Diet, Physical Activity and Health”, it is recommended that individuals should engage in adequate levels of physical activity throughout their lives. Different types and amount of physical activity are required for different health outcomes. For examples, it is well-documented that at least 30 minutes of regular moderate intensity physical activity on most days for reducing the risk of cardiovascular disease and diabetes, colon cancer and breast cancer; muscle strengthening and balance training can reduce falls and increase functional status among older adults; people with chronic diseases and those who are at high risk for these problem, or those who have not been doing exercise for some time should consult their doctors before embarking on an exercise training programme.