

**For discussion on  
12 June 2023**

**Legislative Council Panel on Home Affairs, Culture and Sports**

**Sports Policy and Promoting Development of Sports  
in Hong Kong**

**Purpose**

This paper briefs Members on the policies and the latest situation of the Government's efforts in promoting sports development in Hong Kong.

**Background**

2. The Government makes every effort to promote sports development in Hong Kong, and is committed to promoting sports in the community, supporting elite sports and developing Hong Kong into a centre for major international sports events. In addition to the three policy objectives above, the Government is exploring ways to further the development of sports in Hong Kong through enhanced professionalism in the sports sector and the development of sports as an industry. The Sports Commission (SC) and its three committees (namely the Community Sports Committee, Elite Sports Committee and Major Sports Events Committee), established by the Government, with Members from different walks of life, provide advice on sports policies and related measures. The Culture, Sports and Tourism Bureau (CSTB) and the Leisure and Cultural Services Department (LCSD) likewise maintain close liaison with the sports sector, including the Sports Federation and Olympic Committee of Hong Kong, China (SF&OC), the Hong Kong Sports Institute (HKSI), the Hong Kong Paralympic Committee (HKPC), "national sports associations" (NSAs), as well as related sports organisations, coaches and athletes, to gauge the latest views of the sector on sports development in Hong Kong.

3. To promote sports development in Hong Kong, the Government has

considerably increased the recurrent resources dedicated to sports development in recent years. The Government's estimated expenditure on sports development in 2023-24 is around \$7.4 billion<sup>1</sup>, representing an increase of about 42% as compared to around \$5.2 billion five years ago (2018-19). The bulk of the expenditure goes to the promotion of sports in the community, which accounts for over 80% of overall expenditure.

## **Promoting Sports in the Community**

4. To promote "Sport for All" for members of the public, the LCSD organises diversified recreation and sports programmes through its 18 District Leisure Services Offices and various Sports Sections to let people of different ages and abilities to develop a habit of regular exercise. These programmes include training courses, competitions and recreation activities, including the annual Sport For All Day, as well as biennial events such as the Hong Kong Games, Corporate Games and Masters Games. In 2023-24, the LCSD plans to organise about 37 000 activities with an attendance capacity of 2.3 million.

5. The LCSD also provides subvention to eligible NSAs to support the promotion and development of sports, including participation in international events and squad training, organising school sports programmes, training schemes, community sports clubs projects and local competitions, as well as training of officials and attendance at overseas sports meetings. In 2023-24, the LCSD provided funding support of around \$610 million for 62 NSAs and 43 sports organisations. We are committed to promoting sports in schools and encouraging students to develop a healthy and active lifestyle. To nurture students' interests in sports since childhood, the LCSD has implemented the School Sports Programme (SSP) from 2001. The SSP is conducted in line with the daily schedules of schools to enable students of primary, secondary and special schools across Hong Kong to participate regularly in diverse sports activities, with the objectives of encouraging students to participate in sports on a regular basis and identifying students with sporting talent for further training.

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<sup>1</sup> The figures include the expenditures of the CSTB (Head 132) and the LCSD (Head 95), as well as the funding provided under the Elite Athletes Development Fund, the Sir David Trench Fund for Recreation and its sub-funds (including the Arts and Sport Development Fund (Sports Portion) and the Hong Kong Athletes Fund). The expenditures relating to promoting sports in the community, supporting elite sports and promoting Hong Kong as a centre for major international sports events would be around \$6 billion, around \$1.18 billion and around \$220 million respectively.

Since its launch, the SSP has been well-received by the schools, and it is estimated that 610 000 students will participate in it in 2023-24.

### Promoting Urban Sports

6. To further promote sports in the community, the Government will work with the sports sector, schools and other sectors to promote urban sports that are popular among young people in recent years, including 3-on-3 basketball, futsal, sport climbing, skateboarding and breaking. The Government will provide subsidy to schools and organisations which are interested in participating in the promotion programme and organising training courses, as well as activities on urban sports. In the first phase, the Government plans to work with schools and aims to provide 8 000 students with the opportunity to take part in urban sports every year starting from the 2023/24 academic year.

### Territory-wide Physical Fitness Survey for the Community

7. In order to understand the latest physical fitness condition of the public and to establish benchmarking data, the Government proposed in 2018 to carry out the Territory-wide Physical Fitness Survey for the Community (the Survey) again, aiming to facilitate the formulation of measures for promoting sports in the community through regular standardised surveys. The preparatory work started in 2019, and the data collection and related work of the Survey were conducted between July 2021 and December 2022. Data from 9 326 Hong Kong residents aged between 7 and 79 were successfully collected, and the sample size for analysis was 8 419. The data show that the higher one's physical activity participation level, the better one's physical fitness condition becomes. A brief summary of the findings is as follows (see Annex for details):

- (a) more than half (53.8%) of Hong Kong people aged 17-79 did not meet the World Health Organization (WHO) recommended physical activity level<sup>2</sup>, and a higher percentage of children aged 7-11 (66.3%) and adolescents aged 12-16 (50.7%) did not meet the WHO recommended physical activity level. There was a

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<sup>2</sup> World Health Organisation recommended level of physical activity (namely average of 60 minutes of moderate-to-vigorous physical activity (MVPA) per day across the week) for children and adolescents, and 150 minutes or more of MVPA or 75 minutes of vigorous physical activity per week for adults).

significant discrepancy between the perception of physical activity participation and their actual physical activity behaviour among children and adolescents;

- (b) when compared with the data collected in 2012 for similar physical tests (including body composition, cardiorespiratory endurance, muscle strength/muscular endurance, flexibility and neuromuscular function), although some physical fitness parameters regressed slightly, more parameters improved across all age groups, especially cardiorespiratory endurance and muscle strength/muscular endurance in adults. However, muscle strength/muscular endurance in children and adolescents as well as balance in adults were worse than the data collected in 2012;
- (c) 33.0% of children and 27.7% of adolescents were identified as overweight or obese by the WHO Child Growth Standards<sup>3</sup>, and 34.2% of adult males and 23.7% of adult females were identified as having overall obesity (namely body mass index (BMI) >25); and
- (d) for children, the main barriers to participation in physical activity were bad weather, busy with homework and feeling tired. For adolescents, the main barriers were muscle soreness caused by physical activity, lack of time, bad weather and being too tired. For adults aged 17-59, the main barriers to participation in physical activity were lack of time, tiredness and laziness. For the elderly aged 60-79, the main barrier was bad weather.

8. The study provides Government departments and stakeholders in sports promotion with up-to-date data on the physical fitness condition of the Hong Kong population, which can be used as an important reference when formulating targeted strategies. Following the release of the study report, we will develop a concrete follow-up work plan with relevant Government departments (such as the Department of Health and the Education Bureau) in the following directions:

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<sup>3</sup> World Health Organisation Child Growth Standards: Overweight: >+1 Standard Derivation (SD); Obesity: >+2 SD.

- (a) formulate targeted strategies to improve the physical fitness condition of residents, such as providing an appropriate mix of recreational and sports facilities and activities for the public to increase their opportunities to participate in their favourite sports; as well as encouraging parents to do more family-oriented physical activities to increase children's motivation for participating in physical activities;
- (b) educate the public on the WHO's physical activity guidelines through various publicity channels, such as thematic websites, video productions, and roving exhibitions, to call for a sufficient and appropriate level of physical activity. Those who already meet these guidelines can gradually increase their physical activity levels and establish regular exercise habits;
- (c) use big data to develop simple self-assessment methods for physical fitness levels based on different age groups, allowing people to monitor their physical fitness levels at any time; and design mobile applications to record their daily physical activity levels, thereby increasing the amount of data in the database; and
- (d) continue to collect data on the physical fitness of the public every five years in order to continuously assess changes in the physical fitness of Hong Kong people.

9. We also plan to hold a press conference and disseminate the results of the study and initial recommendations through various channels, such as press releases, social media, and related webpages, to enable the general public to understand the current physical fitness level and the importance of regular participation in sports and physical activities.

### **Supporting Elite Sports**

10. The Government strongly supports the development of elite sports in Hong Kong. Hong Kong athletes have attained remarkable achievements at various international sports events in recent years. The Tokyo Olympic Games (OG) and Paralympic Games (PG) were held in 2021, and the Hong

Kong, China Delegation achieved the best ever results of winning one gold, two silver and three bronze medals at the Tokyo OG, as well as outstanding results of two silver and three bronze medals at the Tokyo PG. A number of athletes also broke Hong Kong records or attained personal best results at these two Games. The spirit of the entire community was lifted by the excellent performance of our athletes.

11. As the agent for executing the Government's elite sports training system, the HKSI is responsible for providing elite athletes with a world-class training environment and support services, nurturing high-calibre athletes who deliver excellent performances in international sporting events to bring honours to Hong Kong. We will continue to expedite the new facilities building project of the HKSI to provide athletes with world-class training and support facilities and enhance support services in areas such as physical fitness, sports science, and sports medicine. The HKSI will strive to complete its new facilities building by mid-2024 and commission the building before the opening of the Paris OG, and the entire project is expected to be completed in mid-2025.

#### Comprehensive Support Services

12. The Government provides annual funding to the HKSI through the Elite Athletes Development Fund (EADF) to nurture around 1 300 local elite athletes (of which around 550 are full-time athletes), providing them with direct financial grants and comprehensive support services, including strength and conditioning, sports science, sports medicine, dual career development in sports and education, insurance, as well as meals and accommodation. In 2023-24, the Government will allocate around \$863.0 million to the HKSI, while an additional \$33.0 million will be deployed from the HKSI's reserves which are accumulated from EADF allocations over the years.

13. Both able-bodied and disabled elite athletes may receive direct financial support from the HKSI, the levels of which depend on their achievements. At the same time, the HKSI provides support for eligible elite able-bodied and Para sports under the Elite Vote Support System (EVSS). For elite able-bodied sports, there are currently 20 Tier A sports and 13 Tier B sports<sup>4</sup> at the HKSI;

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<sup>4</sup> The 20 Tier A able-bodied elite sports are athletics, badminton (Tier A\*), billiard sports, cycling (Tier A\*), equestrian, fencing (Tier A\*), gymnastics, karatedo, rowing, rugby sevens, sailing, skating, squash, swimming (Tier A\*), table tennis (Tier A\*), tennis, tenpin bowling, triathlon, windsurfing (Tier A\*) and

for elite Para sports, there are six Tier A and three Tier B elite Para sports<sup>5</sup>.

14. The Government, with the support of the SC, has been improving the support for full-time elite athletes under the EVSS and has reviewed the EVSS after the Tokyo OG and PG, including the direct financial support provided to full-time elite athletes. The revised assessment criteria for the EVSS have been implemented in 2022-23.

### Dual Career Support of Athletes

15. The Government attaches great importance to the all-round development of elite athletes and strive to provide support for their dual-career development in education and sports training. With Government funding, the HKSI has been implementing the Athlete Education and Personal Development Support Programmes to provide educational support (including education consultation, academic guidance, tutorial support and education subsidy) to serving athletes. The HKSI has signed memoranda of understanding with eight University-Grants-Committee-funded universities and four self-financing tertiary institutions to provide flexible study arrangements, such as the extension of study periods as needed, for full-time athletes studying in these universities. The HKSI may also nominate full-time athletes for admission into programmes offered by these universities. Moreover, the HKSI has partnered with 32 local secondary schools to provide flexible secondary curricula for student athletes. Through the Partnership School Programme, three of these secondary schools offer full-time student athletes new and highly flexible secondary school curricula that accommodate their full-time training schedules.

16. The Government has injected \$250 million into the Hong Kong Athletes Fund (HKAF) in 2020 to increase scholarship awards in support of the dual career development of athletes, including stepping up support for athletes to study bachelor's degrees or above and short-term sports certificate programmes to attract more sports talents and nurture more knowledge-based athletes. Since the injection, 154 athletes have benefited from the relevant education grants.

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wushu; the 13 Tier B able-bodied elite sports are contract bridge, dance sports, dragon boat, golf, judo, kart, lawn bowls, lifesaving, mountaineering, orienteering, roller sports, shuttlecock, and taekwondo.

<sup>5</sup> The six Tier A elite Para sports are Boccia (Physical Disability) (PD), Para Table Tennis (PD), Wheelchair Fencing (PD), Para Table Tennis (Intellectual Disability) (ID), Para Swimming (ID), Para Badminton (PD); the three Tier B elite Para sports are Para Lawn Bowls (PD), Para Tenpin Bowling (PD) and Para Athletics (ID).

## Retirement Support

17. The Government has been providing resources for the HKSI, the SF&OC, schools and sports organisations to support retired athletes in their education and career transformation.

18. With Government funding, the SF&OC has been supporting retired athletes through its Hong Kong Athletes Career and Education Department by providing diversified services on job placement, education, life skills and counselling to support athletes' post-retirement development. Around 1 600 athletes have benefited thus far. Meanwhile, with Government funding, the HKSI has implemented its Athlete Education and Personal Development Support Programmes to provide serving athletes with career development support, including life skills/vocational training and coaching apprenticeship programmes.

19. Since 2016, the Government has launched the Retired Athletes Transformation Programme (RATP), which has provided subsidies to more than 130 retired athletes so far. The RATP encourages and subsidises schools and sports organisations to employ retired athletes, provides on-job training and education subsidies to enhance their qualifications and skills, with the aim of helping retired athletes build a foundation for their long-term career development. The RATP also assists schools and sports organisations in promoting sports and nurturing sports talents.

20. Moreover, to further enhance support for athletes with disabilities (AWDs), the Government will launch, in collaboration with the HKPC, a five-year pilot programme on career and education for AWDs in the first half of 2023 to equip them with knowledge, skill sets and career planning skills, so as to facilitate their integration into society and post-athletic transformation for their second-career development. We plan to provide career and education support and life skills training for at least 100 AWDs every year.

21. Since 2015, the HKSI has been providing one-off cash grants through the Elite Athletes Performance Recognition Scheme (EAPRS) under the HKAF to eligible full-time athletes upon their retirement from sports training and competitions to help them transform and develop a second career. Since its



implementation, 75 retired athletes have benefited from the EAPRS.

### **Making Hong Kong a Centre for Major International Sports Events**

22. The Government is committed to promoting Hong Kong as a centre for major international sports events. The “M” Mark System was launched to support local NSAs in organising major sports events in Hong Kong through the provision of matching fund and direct grant.

23. In April 2023, the Government launched various measures to strengthen the “M” Mark System in order to attract and support the staging of more major international sports events in Hong Kong. Measures include increasing the funding ceiling for each event to \$15 million, lifting the quota of “M” Mark events to be organised by the same applicant each year, and relaxing the eligibility of the applicants for “M” Mark events to cover events organised by NSAs as well as other non-government organisations.

24. The Government expects that more than ten major international sports events will be held in Hong Kong in 2023-24 with funding support of around \$105 million, including some recurring events, namely rugby sevens (April 2023), volleyball and dragon boat (both in June 2023), badminton (September 2023), tennis (October 2023), swimming, golf, squash, 3-on-3 basketball (all in November 2023) and marathon (January 2024); and some new “M” Mark events to be staged for the first time such as the 2023 FIA World Rallycross Championship of Hong Kong, China – Season Finale (November 2023).

### **Sports Professionalism and Development of Sports as an Industry**

25. The sports industry in Hong Kong had been growing before the pandemic, which demonstrates that residents had a strong demand for sports and that the sports industry market had been expanding. Before the COVID-19 pandemic, according to the statistics released by the Census and Statistics Department, the size of the sports industry was \$39 billion in 2019, making up 1.4% of Hong Kong’s gross domestic product and employing 83 000 persons, which was 2.2% of Hong Kong’s workforce. It is inevitable that the pandemic had a negative impact on the development of the sports industry, but as people’s

lives return to normal, we are confident that the market of the sports industry would thrive again.

26. The Government believes that professional leagues are an integral part of the professionalisation of sports and the development of sports industry. Professional leagues and clubs can improve the level of sports specialisation, provide career pathways and employment opportunities for athletes and other sports professionals, attract more youngsters with potential to join the sports industry, and encourage more sponsorships from the business sector, all of which will contribute greatly to the development of the sports industry in Hong Kong. The Chief Executive has proposed in the 2022 Policy Address to support the development of professional leagues and sports clubs, including their participation in major sports competitions on the Mainland and in the region.

27. In terms of talents, the Government has been supporting the efforts of the Hong Kong Coaching Committee, subsidising coaches to pursue continuing education and improve the quality of sports training. As talents in sports science and sports medicine are also essential in enhancing the performance of elite athletes, the Government has allocated additional resources to promote the development in these areas. As more Hong Kong athletes have gained a place amongst the world's best, the relevant sports science and sports medicine support services have become crucial. The Government and the Hong Kong Jockey Club Charities Trust jointly funded a total of \$300 million to set up the Sports Science and Research Funding Scheme to enhance, through research in sports science and sports medicine, the competitiveness of athletes in international sports events. The CSTB officially launched the Scheme in January 2022. Five batches of applications have been approved so far, involving 17 sports science and research projects, amounting to a total of HK\$127 million.

28. On growing the sports economy, the Government has been capitalising on the cultural and sports resources of Hong Kong to promote tourism, with the aim of enhancing the synergy among them. The establishment of the CSTB will enable the teams responsible for cultural, sports and tourism matters within the Government to have closer liaison with one another, set common goals, and bring forth organic collaboration. In addition, the Government has strengthened the "M" Mark System to encourage participation from commercial

organisations in order to support the development of the major international sports events industry, with a view to further promoting Hong Kong as a centre for major international sports events.

29. With further development in sports and the commissioning of the Kai Tak Sports Park, there will be increasing demand for manpower in the sports-related industry, in areas such as coaching, refereeing, corporate governance, professional management, sports science, sports medicine, organisation of major sports events, facilities management and media. The Government will continue to introduce appropriate policy initiatives to promote sports professionalism and the development of sports as an industry.

30. To enhance the professionalism in the sports sector and encourage the development of sports as an industry, the Government has engaged a consultant to study the relevant issues as well as consulted the business and sports sectors. The consultant has submitted a report to the Government last month to identify the opportunities and challenges in the development of sports professionalism and sports as an industry, and put forward recommendations across four key realms, including sports administration and strategy, grassroots sports and sports culture, growing the sports economy, and professionalisation of the sports workforce. The Government will study the recommendations in detail and make an announcement in due course.

## **Sports Facilities**

31. The Kai Tak Sports Park (KTSP), being the most important sports infrastructure of the Government in recent decades, is in the pipeline of construction. Occupying an area of about 28 hectares and with a project cost of \$31.9 billion, the KTSP will provide modern and multi-purpose sports and recreation facilities, including a 50 000-seat Main Stadium, a 10 000-seat Indoor Sports Centre, a 5 000-seat Public Sports Ground and about 14-hectare landscaped open space upon completion. The KTSP will not only allow the staging of more large-scale international sports events, but also provide the general public with leisure and sports facilities for community use, thereby facilitating the sports development in Hong Kong. Taking into account the current construction progress, the major facilities of the KTSP will be completed by the end of 2024 by phases to allow the hosting of some of the

events of the 15<sup>th</sup> National Games in Hong Kong in 2025.

32. The Government endeavours to develop new or improve existing sports and recreation facilities. In order to expedite the provision of such facilities, the 2022 Policy Address announced the “10-Year Development Blueprint for Sports and Recreation Facilities”, providing about 30 diversified facilities by phases, such as sports centres, swimming pools, sports grounds and parks. The planned facilities include Hong Kong’s second sports park to be developed in Whitehead, and large-scale sports and recreation facilities in the Northern Metropolis. The Government is also actively implementing the Five-Year Plan for Sports and Recreation Facilities (Five-Year Plan) as announced in the January 2017 Policy Address. As of now, the Finance Committee of the Legislative Council has approved 21 projects for sports and recreation facilities, involving a total of around \$10.6 billion. The Government will continue to implement the remaining projects under the Five-Year Plan. As regards the Five-Year Plan for Upgrading Football Pitches to upgrade over 70 football pitches as announced in the 2021-22 Budget, the improvement works of 21 venues have been completed among the about 40 projects already commenced. The Government has also identified the 16 improvement projects already commenced or to be commenced this year, and the remaining projects are expected to commence gradually in or before 2025.

## **Conclusion**

33. The Government will continue to make every effort to promote sports development in Hong Kong. In addition to the policy objectives of supporting elite sports, maintaining Hong Kong as a centre for major international sports events and promoting sports in the community, we will explore ways to further promote sports development in Hong Kong through enhanced professionalism in the sports sector and development of sports as an industry. The CSTB will also actively promote the integration of culture, sports and tourism to enhance the synergy among these three policy areas, thereby accelerating the development of sports. We will continue to listen to the views of the sports sector and the public on sports development, enhance existing measures and introduce suitable new measures to boost the sports culture in the community and raise the performance level of sports.

34. Members are invited to note and comment on the contents of this paper.

**Culture, Sports and Tourism Bureau**  
**June 2023**

# **Territory-wide Physical Fitness Survey for the Community**

## **Executive Summary**

**Commissioned by**

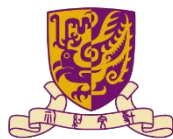
**Community Sports Committee  
of the Sports Commission**

**Co-ordinated by**



**Leisure and Cultural  
Services Department**

**Submitted by**



**Department of Sports Science and Physical Education  
The Chinese University of Hong Kong  
(Survey Consultant)**

# Executive Summary

## 1. Background

- 1.1. The present survey is the third citywide community fitness survey in Hong Kong, commissioned by Community Sports Committee (CSC) and coordinated by the Leisure and Culture Service Department (LCSD). The data collection was conducted between July 2021 to December 2022.
- 1.2. Similar to the second survey in 2012, the data of this survey was collected by random sampling method. The sample size calculation was based on the age and gender distribution reported by the Hong Kong Government's 2021 Population Census.
- 1.3. The age covered from 7-79 years old in 3 major batches: 1) 7-11, 2) 12-16, and 3) 17-79 years old.
- 1.4. The data collection was divided into two parts: 1) physical fitness assessments, and 2) questionnaire survey on physical activity (PA) and lifestyle.
- 1.5. Overall, 9,326 participants were collected in the present survey, which exceeded the targeted sample size (i.e., 8500). After filtering and excluding incomplete and invalid data, a total of 8,419 data entered the final analysis.

## 2. Objectives

- 2.1. The objectives of the present survey:
  - (1) To enable the people of Hong Kong participating in the Survey to have a general understanding of his/her own fitness condition;
  - (2) To set up a database on the physical fitness of people of Hong Kong;
  - (3) To identify the relationship between physical exercise pattern and physical fitness of people of Hong Kong; and
  - (4) To assist the Government in identifying priority areas for improvement to enhance the overall physical fitness of the community.

## 3. Data Analysis

- 3.1. After collected the physical fitness and questionnaire data, the data analysis was conducted to reveal the sample distribution, descriptive statistics, association between testing

parameters, such as the correlation between the physical activity participation and physical fitness performance.

- 3.2. The present survey report categorizes the body mass index (BMI) into four groups: 1) obese, 2) overweight, 3) underweight and 4) normal. The adult groups are classified according to the Asia-Pacific body mass index classifications, while the children and adolescent groups are classified by 2 criteria: 1) WHO Child Growth Standard and (2) Hong Kong weight-to-height growth chart.
- 3.3. The present survey report also analyzes the physical activity sufficiency for each age group according to the WHO recommended PA level.

## **4. Children (Age: 7-11)**

### **4.1. Participants**

The sample was selected on a school basis. A total of 9 primary schools were recruited from six districts, i.e., Hong Kong East, Hong Kong West & Islands, Kowloon East, Kowloon West, New Territory West, and New Territory East, according to the district sampling distribution. Four boys and four girls from each grade of each school were randomly selected (i.e. total 48 students per school). The survey took place at schools from June to November 2022.

### **4.2. Physical Fitness Performance**

Overall, there were 225 boys and 201 girls included in the analysis. The average physical fitness performance among children were: 1) PACER =  $19.7 \pm 11.1$  laps, 2) sit-and-reach =  $25.7 \pm 7.5$  cm, 3) handgrip strength (both hands total) =  $27.1 \pm 9.3$  kg, 4) 1-min sit-up =  $15.8 \pm 9.3$  repetitions, 5) standing long jump =  $114.2 \pm 27.1$  cm, and 6) body fat =  $18.7 \pm 9.0$  %.



	Mean		
	Boy	Girl	Total
<b>Body composition</b>			
Height (cm)	137.2	137.0	137.1
Weight (kg)	34.8	32.1	33.6
BMI (kg/m <sup>2</sup> )	18.1	16.9	17.5
Body Fat (%)	18.7	18.8	18.7
Skinfold - Triceps (mm)	11.7	11.2	11.5
Skinfold - Calf (mm)	11.4	11.2	11.3
Skinfold – Total (mm)	23.1	22.4	22.8
<b>Cardiovascular Endurance</b>			
15m PACER (laps)	21.1	18.1	19.7
VO <sub>2</sub> max (ml/kg/min)	34.2	34.2	34.2
<b>Flexibility</b>			
Sit-and-reach (cm)	24.7	27.8	25.7
<b>Muscular Fitness</b>			
Handgrip – both hands (kg)	32.1	26.5	27.1
1-min Sit-up (reps)	16.4	15.2	15.8
Standing Long Jump (cm)	117.0	111.1	114.2

#### 4.3. Prevalence of Overweight and Obesity

33.0% of children were recognized as overweight and obese by the body mass index (BMI) for age-gender reference criteria from the World Health Organization (WHO). 18.2% of children were overweight or obese according to the Hong Kong Weight-for-Height Growth Chart.

	Boys (%)	Girls (%)	Total (%)
<b>The WHO BMI for Age-Gender Growth Standard</b>			
Severe Thinness	0	0	0
Thinness	2.8	2.1	2.4

Normal	58.4	71.2	64.5
Overweight	19.6	20.0	19.8
Obesity	19.2	6.7	13.2

**Hong Kong Weight-for-Height Growth Chart**

Non-overweight	75.4	89.0	81.8
Overweight (including obesity)	24.6	11.0	18.2

**4.4. Physical Activity Level**

66.3% of children met the WHO recommended PA level (i.e., an average of 60 minutes per day of MVPA across the week). However, 84.4% of children perceived that they had sufficient PA levels. The results suggest a discrepancy between the actual and perceived PA sufficiency among the children. The situation is even worse for girls. 80.7% of girls did not meet the WHO PA recommendation, but 85.1% of girls perceived that they had sufficient PA.

	Boys (%)	Girls (%)	Total (%)
<b>Met the WHO-recommended PA level</b>			
Yes	46.9	19.3	33.7
No	53.1	80.7	66.3
<b>Self-perceived sufficiency on PA</b>			
Definitely sufficient	30.8	21.0	26.2
Sufficient	52.8	64.1	58.2
Insufficient	14.0	13.3	13.7
Definitely insufficient	2.3	1.5	2.0

**4.5. Favorite Sports and Major Barrier to Physical Activity**

The top 5 favorite sports for boys were 1) ball games (67.8%), 2) swimming (49.5%), 3) cycling (48.1%), 4) distance running (36.0%), and 5) track and field (29.9%). For girls, the top 5 favorite sports were: 1) swimming (53.8%), 2) rope skipping (46.2%), 3) cycling (43.1%), 4) dance (42.1%), and 5) ball games (32.8%). The top three barriers to

participation in physical activity were: 1) bad weather (60.4%), 2) busy with homework (40.8%), and 3) feeling tired (34.7%).

#### **4.6. Further Analysis**

- 4.6.1. Compared to the 2012 survey, both boys and girls in current survey demonstrated better cardiovascular fitness (boys ran 4.5 more laps in 15m PACER, whereas girls ran 3.2 more laps). Handgrip strength of boys also improved (increase 5.1 kg), in contrary, the 1-min sit-up for both boys and girls declined (3 reps less), all other fitness parameters are similar.
- 4.6.2. Boy who met the WHO PA recommendation have better cardiovascular and muscular fitness compared to those who did not meet the WHO PA recommendation. Furthermore, we found that parent involvement in exercise could significantly improve the weekly PA level of children.
- 4.6.3. Boys perform significantly better in 15 meters PACER test and standing long jump than girls. Girls have significantly greater sit-and-reach performance compared with boys. Furthermore, body fatness parameters (i.e., total body fat and total skinfold) were negatively correlated with the performance of 1) 15m PACER and 2) handgrip strength, and 15-meter PACER performance was positively correlated with the muscular fitness (i.e., handgrip, 1-min sit-up, and standing long jump) for both genders. For boys, body fatness parameters (i.e., total body fat and total skinfold) were negatively correlated with the performance of 1-min sit-up and standing long jump.

#### **4.7. Recommendation**

- 4.7.1. Cardiovascular fitness of children was better compared to 10 years ago, however, muscular endurance declined. It is suggested that children should engaged in more aerobic exercise to maintain and improve cardiovascular fitness and control weight, so as to improve overall health. Muscular endurance training should also strengthen.

- 4.7.2. It is important to continuously monitor the children's physical fitness (i.e., cardiovascular fitness, muscular strength, muscular endurance, flexibility, and body composition). We recommended that the norm of physical fitness should be shared via designated websites and mobile applications.
- 4.7.3. A large discrepancy was observed between the actual physical activity level and the perceived sufficiency of physical activity among children. We recommended that stakeholders work together to 1) promote the WHO physical activity recommendations to children and parents and 2) educate the children, parents, and teachers on the strategies of skills to evaluate and monitor the daily PA level of children.
- 4.7.4. Additional after-school sports or exercise activities are needed for children. We suggested that stakeholders organize more sports activities based on their favorite sports.
- 4.7.5. We suggested several strategies for overcoming obstacles to PA: 1) provide parents and children with information on home-based exercise; 2) emphasize the quality of homework (優質課業) to schools rather than its quantity; and 3) continuously promote sufficient sleep time (i.e.,  $\geq 9$  hours).
- 4.7.6. Parent involvement was an important factor influencing the PA participation of children. More family-based exercise events should be organized after school, over the weekends, and on holidays. Promoting PA, sports, and physical fitness reward programs among children could be a feasible approach to encourage their participation in sports.

## **5. Adolescents (Age: 12-16)**

### **5.1. Participants**

Both the fitness test and questionnaire data for the young adolescents were collected by the Education Bureau (EDB) during two periods, from September 2019 to January 2020 and from February to June 2021. The research team randomly extracted 350 data from the data pool provided by EDB, including 36 males and 34 females from each age, to serve as partial data for this survey.

## 5.2. Physical Fitness Performance

Overall, there were 180 boys and 170 girls included in the analysis. The average physical fitness performances among adolescents were: 1) PACER =  $37.2 \pm 20.1$  ml/kg/min, 2) sit-and-reach =  $26.9 \pm 10.1$  cm, 3) standing long jump =  $150.3 \pm 35.4$  cm, 4) 1-min sit-up =  $24.2 \pm 11.7$  repetitions, 5) push-up =  $10.3 \pm 10.3$  repetitions, and 6) body fat =  $21.8 \pm 9.7\%$ .

	Mean		
	Boys	Girls	Total
<b>Body composition</b>			
Height (cm)	165.9	158.4	162.3
Weight (kg)	57.8	51.1	54.5
BMI (kg/m <sup>2</sup> )	20.8	20.3	20.6
Body Fat (%)	17.3	26.6	21.8
Skinfold - Triceps (mm)	13.8	17.0	15.4
Skinfold - Calf (mm)	13.5	16.4	14.9
Skinfold - Total (mm)	27.3	33.4	30.2
<b>Cardiovascular Endurance</b>			
15m PACER (lap)	46.7	27.1	37.2
VO <sub>2max</sub> (ml/min/kg)	41.5	37.1	39.4
9-min Run / Walk (m)	1392.2	1235.8	1316.3
<b>Flexibility</b>			
Sit-and-reach (cm)	23.1	31.1	26.9
<b>Muscular Fitness</b>			
Standing Long Jump (cm)	167.7	131.9	150.3
1-min Sit-up (rep)	28.4	19.9	24.3
Push-up (rep)	11.2	9.5	10.3

## 5.3. Prevalence of Overweight and Obesity

27.7% of adolescents were identified as overweight and obese by the WHO BMI for age-gender growth chart, and 23.2% were recognized as overweight and obese by the Hong Kong weight-to-height growth chart standard.

	Boys (%)	Girls (%)	Total (%)
<b>The WHO BMI for Age-Gender Growth Standard</b>			
Severe Thinness	1.7	0	0.9
Thinness	5.6	2.9	4.3
Normal	60.0	74.7	67.1
Overweight	18.3	15.9	17.1
Obesity	14.4	6.5	10.6
<b>Hong Kong Weight-for-Height Growth Chart</b>			
Non-overweight	74.2	79.6	76.8
Overweight (including obesity)	25.8	20.4	23.2

#### 5.4. Physical Activity Level

50.7% of adolescents indicated that their PA level did not meet the WHO recommendation (i.e., an average of 60 minutes per day of MVPA across the week), which was better than the prevalence (i.e., 66.3%) among children aged 7-11. However, only 34.4% of adolescents perceived that they had insufficient PA.

	Boys (%)	Girls (%)	Total (%)
<b>Met the WHO recommended PA level</b>			
Yes	52.0	46.4	49.3
No	48.0	53.6	50.7
<b>Self-perceived sufficiency on PA</b>			
Very sufficient	18.3	8.8	13.7
Sufficient	22.8	15.3	19.1
Average	31.7	34.1	32.9
Insufficient	20.0	31.2	25.4
Very insufficient	7.2	10.6	8.9

### **5.5. Favorite Sports and Major Barrier to Physical Activity**

The top 5 favorite sports for boys were 1) ball games (72.2%), 2) swimming (21.7%), 3) track and field (12.2%), 4) distance running (11.7%), and 5) rope skipping (7.8%). For girls, the top 5 favorite sports were: 1) ball games (50.6%), 2) swimming (34.7%), 3) dance (26.5%), 4) skating/roller skating (25.9%), and 5) rope skipping (17.1%). The top four barriers for adolescents to participation in physical activity were: 1) muscle soreness (45.0%), 2) lack of time (42.0%), 3) bad weather (41.4%), and 4) too tired (41.1%).

### **5.6. Further Analysis**

- 5.6.1. Compared to 2012 survey, cardiovascular fitness of both boys and girls improved (boys ran 6 more laps in 15m PACER, whereas girls 5.1 laps more). Girls' push-up also improved (increase 3.1 reps). In contrary, standing long jump of boys declined (reduced 11.2 cm), all other fitness parameters were similar.
- 5.6.2. Boys who met the WHO-recommended PA level performed significantly better in push up. In contrast, girls who met the WHO recommended PA level had significantly greater performance in 1) 15-meter PACER, 2) 9-minute run/walk test, and 3) Standing Long Jump.
- 5.6.3. For boys, body adiposity was negatively correlated with cardiovascular fitness and all muscular fitness parameters, while cardiovascular fitness was positively correlated with lower body flexibility and all muscular fitness parameters. For girls, body adiposity was negatively associated with cardiovascular fitness and muscular power, while cardiovascular fitness was positively correlated with lower body flexibility and all muscular fitness parameters. Furthermore, boys perform significantly better in 1) 15-meter PACER, 2) 9-minute run/walk, 3) 1-minute sit-up, and 4) standing long jump. We also found that boys have significantly lower body fat compared with girls. On the other hand, girls have significantly greater sit-and-reach performance compared with boys.

### **5.7. Recommendation**

- 5.7.1. Cardiovascular fitness of children was better compared to 10 years ago, it is suggested that children should engage in aerobic exercise to maintain and improve

cardiovascular fitness and control weight, so as to improve overall health. , however, muscular endurance declined. Muscular fitness training should also be strengthened, especially muscular power in boys which may be improved via plyometric exercise.

- 5.7.2. More subcutaneous fat was observed among adolescents compared with data collected in 2012. Stakeholders should provide more weight management education and exercise programs specific to obesity.
- 5.7.3. Adolescents should have sufficient knowledge to identify their performance in physical fitness (i.e., cardiovascular fitness, muscular strength, muscular endurance, flexibility, and body composition). Normative values of physical fitness should be provided to adolescents via the internet, mobile applications, and social media.
- 5.7.4. Stakeholders should work together to support adolescents with poor physical fitness through additional exercise and fitness training. More interesting PA initiatives, such as IT-based virtual fitness programs with mobile applications and school-based fitness workshops should be promoted.
- 5.7.5. We suggested that stakeholders should organize more sports activities based on their favorite sports, such as organizing ball games (1st favorite sport), organizing more swimming (2nd favorite sport) courses, and organizing skating/roller skating (3rd favorite sport). Furthermore, we recommended that the stakeholders should work together to encourage students to participate in at least one sport after school or leisure time (一人一運動計劃) and educate the student about the understanding of WHO recommended PA level.
- 5.7.6. Major obstacles for secondary school adolescents to refrain from participation in PA: 1) muscle soreness, 2) lack of time, and 3) bad weather conditions. We suggested a few different approaches to tackle those obstacles to PA: 1) educate adolescents on some fundamental post-exercise recovery knowledge, such as appropriate cool-down exercises, self-myofascial release techniques, and adequate amounts of sleep; 2) focus on the quality of homework (優質課業), rather than the quantity of homework, and 3) examples of home-based exercises should be share via internet, mobile application, and social media.



## **6. Adults (age: 17-79)**

### **6.1. Participants**

- 6.1.1. The sampling for these age groups considered their employment status and covered all the working industries. In addition to the age and gender, the proportion of the working and non-working population was used to calculate the sample size. All the adopted percentages for calculation were from the data of the 2021 Population Census.
- 6.1.2. Data collection involved various corporations or companies, government or non-government organizations, and large-scale working unions. When recruiting working participants, companies and federations were invited to participate through random sampling on a pro-rata basis based on the economic groups' framework provided by the Census & Statistics Department for the working population. Arrangements were then made on mutual agreement for those willing to get involved. To recruit the non-working participants, tertiary education institutions, District Social Welfare Offices, and non-government organizations with broad district coverage were invited. The participants were invited through the network and influence of these institutions/organizations.
- 6.1.3. Apart from the recruitment through various companies, organizations, or institutions, public test days were organized at large-scale events and LCSD leisure venues to recruit participants from specific age and gender groups to enhance the representation of the sample.

### **6.2. Physical Fitness Performance**

Participants in the current survey generally performed better in cardiovascular fitness, muscular strength, muscular endurance, and muscular power than in the 2012 survey. However, participants in the current survey typically had poorer balance than those in 2012.

	<b>Age: 17-19</b>	
	Mean	
	Male	Female
<b>Body Composition</b>		
Height (cm)	173.1	160.6
Weight (kg)	68.0	55.5
Waist Circumference (cm)	77.3	69.1
BMI (kg/m <sup>2</sup> )	22.7	21.5
Body Fat (%)	18.1	29.1
Muscle Mass (%)	46.9	33.6
<b>Cardiovascular Endurance</b>		
3-min Step Test (Post Exercise HR)	136.4	153.3
3-min Step Test (Recovery HR)	113.5	128.2
Estimated VO <sub>2max</sub> (ml/kg/min)	43.8	40.9
<b>Flexibility</b>		
Sit-and-reach Test (cm)	28.6	32.1
<b>Muscular Fitness</b>		
Handgrip Strength (Both Hands) (kg)	73.9	50.5
Vertical Jump (cm)	49.7	36.5
Plank (sec)	114.1	77.7
1-min Sit-up Test (rep)	31.5	25.8
<b>Agility and Balance</b>		
Single Leg Stance with Eyes Closed (sec)	21.8	25.2

	<b>Age: 20-39</b>	
	Mean	
	Male	Female
<b>Body Composition</b>		
Height (cm)	172.5	159.7
Weight (kg)	71.2	56.4
Waist Circumference (cm)	81.9	71.9
BMI (kg/m <sup>2</sup> )	23.9	22.1
Body Fat (%)	20.5	30.3
Muscle Mass (%)	53.2	36.2
<b>Cardiovascular Endurance</b>		
3-min Step Test (Post Exercise HR)	139.4	145.3
3-min Step Test (Recovery HR)	117.4	120.1
Estimated VO <sub>2max</sub> (ml/kg/min)	41.4	40.4
<b>Flexibility</b>		
Sit-and-reach Test (cm)	23.8	30.4
<b>Muscular Fitness</b>		
Handgrip Strength (Both Hands) (kg)	77.1	49.7
Vertical Jump (cm)	46.6	31.7
Plank (sec)	109.1	75.8
1-min Sit-up Test (rep)	27.5	20.8
<b>Agility and Balance</b>		
Single Leg Stance with Eyes Closed (sec)	19.4	23.2

	<b>Age: 40-59</b>	
	Mean	
	Male	Female
<b>Body Composition</b>		
Height (cm)	170.0	157.7
Weight (kg)	70.7	57.0
Waist Circumference (cm)	85.0	76.0
BMI (kg/m <sup>2</sup> )	24.4	22.9
Body Fat (%)	21.7	31.7
Muscle Mass (%)	51.6	36.0
<b>Cardiovascular Endurance</b>		
3-min Step Test (Post Exercise HR)	135.4	143.8
3-min Step Test (Recovery HR)	115.0	119.9
Estimated VO <sub>2max</sub> (ml/kg/min)	38.0	36.4
<b>Flexibility</b>		
Sit-and-reach Test (cm)	21.5	29.5
<b>Muscular Fitness</b>		
Handgrip Strength (Both Hands) (kg)	75.3	48.3
Vertical Jump (cm)	38.8	25.8
Plank (sec)	117.3	81.8
1-min Sit-up Test (rep)	21.1	14.8
<b>Agility and Balance</b>		
Single Leg Stance with Eyes Closed (sec)	11.2	11.6

	<b>Age: 60-69</b>	
	Mean	
	Male	Female
<b>Body Composition</b>		
Height (cm)	166.8	153.9
Weight (kg)	67.0	55.5
Waist Circumference (cm)	85.4	79.0
BMI (kg/m <sup>2</sup> )	24.1	23.5
Body Fat (%)	22.8	33.7
Muscle Mass (%)	48.3	34.1
<b>Cardiovascular Endurance</b>		
2-min Step Test (steps)	99.3	92.6
<b>Flexibility (Upper and Lower Body)</b>		
Sit-and-reach Test on Chair (cm)	11.1	11.9
Back Scratch Left (cm)	15.5	9.8
Back Scratch Right (cm)	12.6	8.2
<b>Muscular Fitness</b>		
Handgrip Strength (Both Hands) (kg)	67.1	42.7
Arm Curl (rep)	15.5	13.2
Chair Stand Test (rep)	16.0	15.2
<b>Agility and Balance</b>		
8-Feet Up and Go (sec)	5.0	5.6
Single Leg Stance with Eyes Open (sec)	53.3	55.9

	<b>Age: 70-79</b>	
	<b>Mean</b>	
	<b>Male</b>	<b>Female</b>
<b>Body Composition</b>		
Height (cm)	164.6	152.6
Weight (kg)	64.7	55.0
Waist Circumference (cm)	86.9	81.4
BMI (kg/m <sup>2</sup> )	23.9	23.7
Body Fat (%)	24.5	34.7
Muscle Mass (%)	46.0	33.4
<b>Cardiovascular Endurance</b>		
2-min Step Test (steps)	91.1	85.8
<b>Flexibility (Upper and Lower Body)</b>		
Sit-and-reach Test on Chair (cm)	11.2	10.0
Back Scratch Left (cm)	18.6	10.9
Back Scratch Right (cm)	15.2	9.7
<b>Muscular Fitness</b>		
Handgrip Strength (Both Hands) (kg)	59.2	39.9
Arm Curl (rep)	12.9	12.2
Chair Stand Test (rep)	13.6	13.3
<b>Agility and Balance</b>		
8-Foot Up and Go (sec)	6.0	6.8
Single Leg Stance with Eyes Open (sec)	25.1	23.9

### 6.3. Prevalence of Obesity and Central Obesity

34.2% of males and 23.7% of females had general obesity (defined by BMI > 25), and 26.6% of males and 34.3% of females had central obesity (waist circumference  $\geq$  90 cm for men;  $\geq$ 80 cm for women). A high prevalence of central obesity was observed among females aged 40-59 years old and adults aged 60 or above.

		Obese II (BMI $\geq$ 30.0)	Obese I (BMI 25- 29.9)	Overweight (BMI 23- 24.9)	Normal (BMI 18.5- 22.9)	Underweight (BMI <18.5)
17-19	Male	6.5%	16.1%	20.4%	47.3%	9.7%
	Female	7.3%	9.1%	3.6%	61.8%	18.2%
20-39	Male	6.5%	25.8%	22.5%	41.7%	3.5%
	Female	3.3%	12.3%	15.3%	57.6%	11.4%
40-59	Male	5.3%	31.5%	27.0%	34.6%	1.6%
	Female	3.8%	18.3%	19.1%	54.0%	4.8%
60-69	Male	3.2%	32.0%	26.3%	36.6%	1.9%
	Female	6.2%	23.4%	20.6%	44.0%	5.7%
70-79	Male	2.2%	31.3%	26.0%	37.2%	3.4%
	Female	5.1%	27.7%	23.1%	38.1%	5.9%
Total	Male	4.9%	29.3%	25.1%	38.0%	2.7%
	Female	4.4%	19.3%	19.0%	50.5%	6.8%
	Both gender	4.6%	23.1%	21.3%	45.7%	5.2%

		Central Obesity	Normal
		(Waist circumferences $\geq 90$ cm for men and $\geq 80$ cm for women)	
17-19	Male	15.1%	84.9%
	Female	10.9%	89.1%
20-39	Male	20.7%	79.3%
	Female	16.6%	83.4%
40-59	Male	27.3%	72.7%
	Female	31.1%	68.9%
60-69	Male	30.2%	69.8%
	Female	44.3%	55.7%
70-79	Male	38.5%	61.5%
	Female	57.2%	42.8%
Total	Male	26.6%	73.4%
	Female	34.3%	65.7%



#### 6.4. Prevalence of Hypertension

Overall, 31.0% of males and 22.4% of females had hypertension (systolic blood pressure  $\geq 140$  mmHg, diastolic blood pressure  $\geq 90$  mmHg). A high prevalence of hypertension was observed among adults aged 60 or above.

		Hypertension (SBP $\geq 140$ mmHg or DBP $\geq 90$ mmHg)	Normal
17-19	Male	20.4%	79.6%
	Female	5.5%	94.5%
20-39	Male	18.6%	81.4%
	Female	6.5%	93.5%
40-59	Male	34.2%	65.9%
	Female	18.3%	81.7%
60-69	Male	40.2%	59.8%
	Female	34.0%	66.0%
70-79	Male	43.1%	56.9%
	Female	43.3%	56.7%
Total	Male	31.0%	69.0%
	Female	22.4%	77.6%

### 6.5. Physical Activity Level

Overall, 53.8% of adults did not meet the WHO PA recommendation (i.e.,  $\geq 150$  minutes of MVPA per week). A high prevalence (~60%) of physical inactivity was observed among adults aged 20-59.

	Age Group					Total
	17-19	20-39	40-59	60-69	70-79	
<b>Met the WHO recommended PA level</b>						
<b>Male</b>						
No	34.9%	49.9%	61.0%	39.8%	32.1%	49.3%
Yes	65.1%	50.1%	39.0%	60.2%	67.9%	50.7%
<b>Female</b>						
No	59.6 %	67.8%	60.6%	47.9%	38.9%	56.8%
Yes	40.4 %	32.2%	39.4%	52.1 %	61.1%	43.2%
<b>Total</b>						
No	44.2%	59.2%	60.7%	44.5%	36.8%	53.8%
Yes	55.8%	40.8%	39.3%	55.5%	63.2%	46.2%

### 6.6. Favorite Sports and Major Barrier to Physical Activity

For 17–19 years old adults, the most favorable sport was ball games. For 20-39 years old men, the most favorable sport was running/jogging. For 20-79 years old women and 40-79 years old men, the most favorable sport was walking. Half the male adults aged 17-59 reported that “lack of time” and “feel tired” were barriers to engaging in PA, whereas “feel tired”, “lazy”, and “lack of time” were the main obstacles for the female adults from the age group of 17-59 years. Bad weather was the main barrier for the elderly (60-79 years old) to participate in physical activity.

### 6.7. Further Analysis

6.7.1. Compared to 2012 survey, the general obesity of current survey reduced, especially in age groups of 20-59 years-old men (reduced by 3.4 – 4.6%), and 40-

69 years-old women (reduced by 2.8 – 9.9%) ◦ Central obesity (waist circumference) of 40-69 years-old men and women also reduced.

6.7.2. Adults who met the WHO PA recommendation perform significantly better in 1) body composition (i.e., lower body fat and higher muscular mass), 2) cardiovascular fitness (i.e., lower recovery heart rate in step test), 3) lower limb flexibility, 4) handgrip strength, 5) core muscular strength and endurance, 6) lower limb power, and 7) balance (i.e., lower time in single leg stance with eyes closed).

6.7.3. Men have significant greater 1) muscle mass, 2) step test performance, 3) lower body flexibility, 4) all muscular fitness parameters, and 5) agility, while girls have better upper body flexibility. Moreover, girls have less 1) BMI, 2) waist circumference, 3) body fatness, and 4) blood pressure. Younger adults have better physical fitness than those with older age.

## 6.8. Recommendation

6.8.1. Adults in the current survey typically had worse balance than respondents from 2012. Therefore, additional balance exercises should be provided to this generation of adults.

6.8.2. We recommended several suggestions for stakeholders to organize more community-based physical fitness tests for adults to monitor their fitness levels: 1) establish self-test fitness corners near exercise venues. The tests should be easy for citizens to conduct (test examples: electric blood pressure, height and weight scales with BMI chart, Bioelectrical impedance analysis for body fat measurement, handgrip, and sit-and-reach), 2) organize regular fitness test workshops led by trained testers, and 3) provide physical fitness consultation service, to improve the citizen's fitness via appropriate exercise prescription recommended by well-trained fitness professional. Furthermore, we suggest providing more home-based physical tests for adults to monitor their physical fitness level. An online physical fitness norm table could also enhance the feasibility for adults to assess and review their fitness levels.

6.8.3. A high prevalence of central obesity and hypertension was observed in the older age population. We suggested stakeholders launch a series of exercise programs

to manage obesity and hypertension, and to promote the awareness and concept of “Exercise-is-Medicine”.

- 6.8.4. Intriguingly, most of the age and gender groups with a high prevalence of physical inactivity were interested in walking, running, yoga, or stretching. We recommended that stakeholders should organize more exercise courses or workshops based on the abovementioned favorite type of exercise, such as the QualiWalk program (優質健行), body and mind relaxation class (身心伸展), and running course. Moreover, “lack of time” was the commonly cited barrier for adults to participate in physical activity. We recommended that stakeholders collaborate to offer more online or video-based training courses to people with little time for physical activity.

## **7. Conclusion**

- 7.1 This study provides the government and relevant sports promotion stakeholders with the latest physical fitness data of Hong Kong citizens, which serves as a reference for them to develop targeted policies in the future. Moreover, publishing the research results can also allow the public to understand the current physical fitness level of Hong Kong citizens and the importance of regularly participating in sports and physical activities.
- 7.2 The previous citywide physical fitness test was conducted ten years ago. Most of the physical fitness parameters have improved across different age groups. This improvement may be attributed to the sports atmosphere and awareness in Hong Kong over the past decade. In recent years, Hong Kong athletes have achieved success in various international competitions, and relevant stakeholders have actively promoted various programs for regular physical activities, which have positively contributed to improving the physical fitness of Hong Kong citizens. However, physical fitness can decline if not continuously maintained, and we still need to work on various community physical activity promotion programs, provide appropriate sports activities based on the physical conditions and exercise preferences of different age groups and genders, and support athlete training and

professional development through hosting large-scale events. Moreover, we need to educate the public on the benefits of regular exercise and understand that "exercise is medicine", particularly in weight control, preventing osteoporosis and sarcopenia, and treating and preventing various chronic diseases, all of which have a positive impact on improving the overall sports atmosphere of society.

- 7.3 The data shows that the higher the participation in physical activity, the better the physical fitness. However, more than half of adults and young people have not met the World Health Organization's standards for physical activity, and over 60% of children have not met the standards. Therefore, promoting nationwide physical activity is crucial for improving physical fitness. Policy makers in education, healthcare, business, social institutions, and other fields should consider promoting physical activity one of their important goals.
- 7.4 To increase public awareness of physical activity and physical fitness improvement, it is recommended to use different media channels, such as news releases, social media, interviews, websites, and documentaries, to share the key findings and recommendations of the research report with the public. This will help them understand Hong Kong citizens' current physical fitness levels.
- 7.5 Through different promotional channels, such as dedicated webpages, video productions, and touring exhibitions, the public can be educated on the "Physical Activity Guidelines." This includes children and adolescents engaging in at least 60 minutes or more of MVPA daily, and adults accumulating at least 150 minutes of MVPA per week. Individuals who meet these guidelines can gradually increase their level of physical activity and eventually establish regular exercise habits.
- 7.6 Using big data to develop simple self-assessment methods for physical fitness levels based on different age groups, allowing citizens to monitor their physical fitness levels at any time; or designing mobile applications to record their daily physical activity levels, thereby increasing the database of data.

- 7.7 It is warranted to evaluate the physical fitness of Hong Kong citizens regularly. We recommend conducting territory-wide physical fitness surveys every five years and conducting longitudinal studies to gain an in-depth understanding of the relationship between physical activity habits and physical fitness levels.
- 7.8 It is noteworthy that this is a cross-sectional survey. Except for the actual descriptive statistics, the interpretation of the results was based on correlation, not causal relationships. For example, this study found that lower education levels are associated with higher physical activity. However, this is only a correlation, not a causal relationship.

**The End**