



# 2016 Active Healthy Kids

## Hong Kong Report Card on Physical Activity for Children and Youth



香港中文大學  
The Chinese University of Hong Kong



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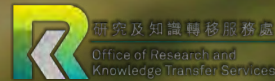


**The 2016 Active Healthy Kids Hong Kong Report Card on Physical Activity for Children and Youth** is the first synthesis of the best available evidence across a series of indicators related to individual behaviors, settings and sources of influence, and strategies and investments in Hong Kong.

The Department of Sports Science and Physical Education of The Chinese University of Hong Kong (CUHK) plays a leading role in the research and development of the 2016 Report Card.



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Active Healthy Kids Report Card

Hong Kong is an evidence-based synthesis on physical activity behavior in children and youth. It is based on the best available evidence across a series of indicators related to individual behaviors, settings and sources of influence, and strategies and investments which are interpreted by an expert consensus panel, resulting in the assignment of a “grade”. The report card aims to consolidate existing evidence, facilitate international comparisons, encourage more evidence-informed physical activity and health policy, improve surveillance of physical activity and most importantly promote and facilitate physical activity opportunities among children and youth in Hong Kong.

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What is the  
‘Report Card’?

The Hong Kong Report Card is part of a global effort to promote physical activity in children and youth (Active Healthy Kids Global Alliance, AHKGA) <http://www.activehealthykids.org> and the results of the first Hong Kong Report Card were published in conjunction with the results from approximately 38 other countries in 2016. The Hong Kong Report Card Research Work Group (RWG) hopes to develop a Report Card biannually. It is anticipated that the Hong Kong Report Card will serve as a call to action, a key policy driver and a standardized system for international comparison in the area of physical activity in children and youth.

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Compelling evidence has shown an inverse relationship between moderate-to-vigorous physical activity (MVPA) and numerous health benefits in children and youth.<sup>1</sup> In addition, excessive sedentary behavior (particularly when measured as screen-based behaviors) has emerged as a risk factor for cardiometabolic disease independent of MVPA.<sup>2,3</sup>

Current public guidelines recommend that children and youth should accumulate at least 60 minutes of MVPA daily and reduce screen-based behavior to not more than 2 hours a day.<sup>4,5</sup> Despite the compelling evidence on the health benefits associated with living an active lifestyle, the majority of children and youth in Hong Kong do not meet the recommended physical activity level<sup>6</sup> and excessive screen time is of major public concern in Hong Kong.<sup>7</sup>

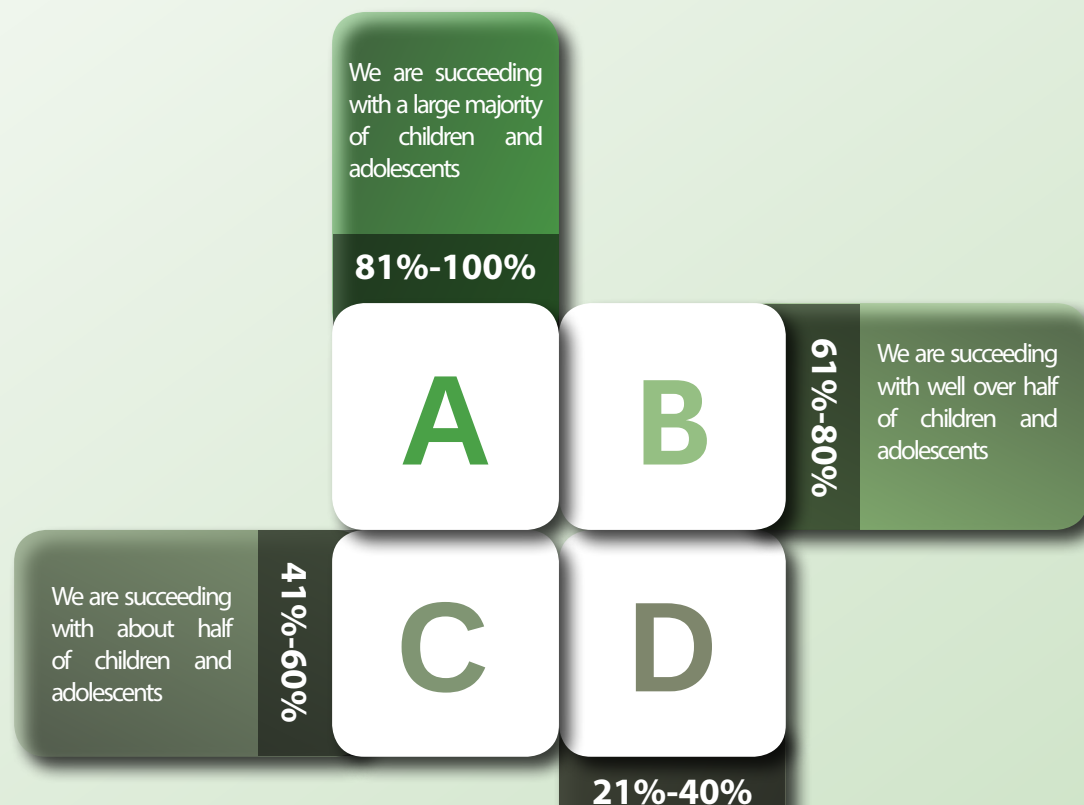
## Why is Physical Activity Important for Children and Youth?

## Guidelines on Physical Activity and Sedentary Behavior

The Department of Health of the Government of the Hong Kong Special Administrative Region recommend physical activity and sedentary behaviors guidelines for pre-schoolers (2 - 6 years) and school-aged children and adolescents (6 - 17 years).<sup>7, 8</sup> A summary of these guidelines is shown in Table 1.

Table 1. Physical activity recommendations for children and youth in Hong Kong

| Age group (year)                      | Physical activity recommendations                                                                                                                                                                                                                                                                                                                                                                               | Sedentary behavior recommendations                                                                                                                                    |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Preschoolers (2-6 years)              | <p>Preschool children should accumulate at least 180 minutes of physical activity (which can be split into several bouts) daily;</p> <p>Preschool children should engage in everyday physical activity of different types and intensity level (light, moderate and vigorous).</p>                                                                                                                               | <p>Children aged 2 to 6 should limit screen time to no more than 2 hours each day. Furthermore, any sedentary activity which lasts over 1 hour should be avoided.</p> |
| Children and Adolescents (6-17 years) | <p>Children and youth should accumulate at least 60 minutes of MVPA every day.</p> <p>Performing &gt; 60 minutes of physical activity daily provides additional health benefits.</p> <p>Most of the daily physical activity should be aerobic. The activity plan should incorporate vigorous-intensity activity, including muscle-strengthening and bone-strengthening activity, at least 3 times per week.</p> | <p>6-12 years old should limit recreational screen time to no more than 2 hours a day.</p> <p>12-18 years old: avoid prolonged screen time.</p>                       |

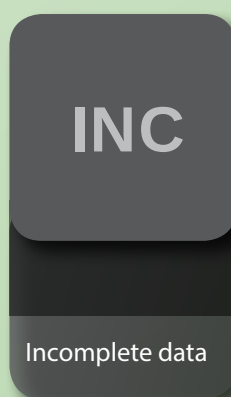
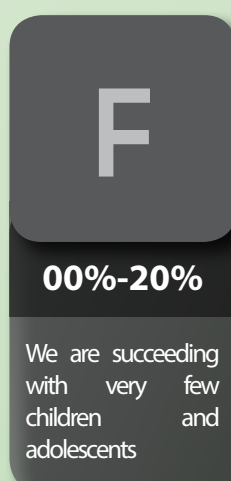


In line with the well-developed model of the Active Healthy Kids Canada Report Card,<sup>9</sup> the first Active Healthy Kids Hong Kong Report Card included 9 core indicators related to individual behaviors that contribute to overall physical activity levels, settings and sources of influence, and strategies and investments (details shown in 'Indicators').

Four types of data sources were searched: (1) published journal articles in peer-reviewed journals; (2) government reports; (3) local relevant journals; and (4) manual search and personal contacts. The inclusion criteria were (1) studies or reports with children and youth aged 3 to 18 years in Hong Kong; (2) studies or reports relevant to at least one of the indicators; (3) studies or reports with a representative sample; (4) sampled for not more than 10 years.

The letter grades for the 9 indicators were assigned based on the proportion of children meeting the pre-defined benchmarks.<sup>10</sup>

Grades may be decreased (–) or increased (+) based on the presence of disparities in age, gender, socioeconomic status (SES) or on the trends of the behaviors. Factors considered for assigning a grade were representativeness of the sample, quality of the measurement (subjective or objective, validated measures or not), and sampling period. Objective measures of physical activity or subjective measures with sound methodology (e.g. how the questions were asked and whether they had been validated) took precedence. The RWG valued the available data source for each indicator and draft grades were assigned once consensus was reached. Draft grades were discussed and reviewed by the stakeholder group at a feedback meeting held in May 2016 or through email communication after which the final report card grades were confirmed.



## Child Health Survey (CHS) 2005-2006:

CHS was a commissioned project by the Department of Health.<sup>12</sup> The survey aimed to provide baseline data on the health status of children and youth aged 14 years or below in Hong Kong. A total of 7,393 children and youth were surveyed using systematic random sampling. The survey consisted of 6 health related aspects including diet and physical activity.

## Physical Fitness Test for the Community:

This was a territory-wide community fitness survey conducted from April 2011 to January 2012.<sup>11</sup> This study was commissioned by the Community Sports Committee of Hong Kong and organized by the Leisure and Cultural Services Department. A series of standardized physical fitness tests and questionnaire survey according to National Physical Fitness Test Handbook were performed. Through stratified random sampling method, 8,178 Hong Kong citizens aged 3 - 69 years were recruited. Relevant data for preschoolers (3 - 6 years), children (7 - 12 years), and adolescents (13 - 19 years) were used for Report Card.

The major data sources used in the 2016 Report Card included the following:

## International Physical Activity and the Environment Network (IPEN) Adolescent Study-Hong Kong:

This epidemiological study was part of the IPEN project (<http://www.ipenproject.org/>). It aimed to investigate the associations of environmental, psychosocial and behavioral variables with body mass index in adolescents in Hong Kong. Using a two-stage stratified sampling strategy, 1,363 adolescents (11 - 18 years) and one of their parents/primary caregivers residing in different types of neighbourhood were recruited. Physical activity and sedentary behavior were measured using both subjective and objective methods. Physical activity-related psychosocial and environmental correlates were surveyed using validated scales.<sup>13</sup>

## Understanding Children's Activity and Nutrition (UCAN) Study:

The UCAN study was a 3-year longitudinal investigation on the determinants of physical activity and sedentary behavior in Chinese children in Hong Kong. A total of 1,666 grades 1 - 3 children were initially recruited in 2009 from 24 primary schools of varying social economic status.<sup>6</sup> Physical activity and sedentary behavior were assessed by a validated questionnaire<sup>14</sup> and an ActiGraph accelerometer (for subsample only).

**Hong Kong Student Obesity Surveillance (HKSOS):**

The HKSOS was a population-based surveillance aimed at monitoring trends in childhood obesity and its associated risk factors.<sup>15,16</sup> The baseline data collection was conducted in 2006 - 2007 in 42 randomly selected secondary schools from each of the 18 administrative districts in Hong Kong. Exercise (defined as structured physical activity) and non-exercise physical activity (defined as movement necessary for activities of normal daily living such as walking for transportation) were assessed by self-reported questions.<sup>17</sup>

**2005-2006 Hong Kong Growth Survey:**

The survey aimed to monitor secular trends in anthropometric features of Hong Kong children and youth aged 6 - 18 years.<sup>18</sup> A total of 14,842 students were enrolled from 18 randomly selected primary and secondary schools from 18 districts. Self-reported sport participation was only available for adolescents.<sup>19</sup>

**Youth Survey on Usage of Internet and Social Network Websites:**

This was a survey conducted by Public Opinion Programme at the University of Hong Kong in 2010.<sup>20</sup> 825 Cantonese speaking youth aged 12 - 23 years were interviewed through telephone.

**Healthier Lifestyle for Primary School Children:**

It was a review conducted by the Audit Commission of the Hong Kong Government to examine various school-based programmes pertaining to a healthier lifestyle for primary school children.<sup>21</sup> The audit survey was conducted in 426 schools from December 2008 to January 2009 and covered various physical activity-related aspects including school-related physical activity policy and strategies.

**Thematic Household Survey Report No. 47:**

This survey was conducted during March to April 2010 by the Census and Statistics Department of the Hong Kong Government.<sup>22</sup> Its aim was to collect information from the public on the provision of sports facilities and levels of interest and participation in sports among Hong Kong residents aged 12 years and above. In particular, this survey focused on the sports facilities within a 15-20 minutes walking distance from home of the respondents. A total of 8,028 households were successfully surveyed but no sample size for youth aged 12 - 18 years was reported.

The first Active Healthy Kids Hong Kong Report Card included 9 core indicators related to individual behaviors that contribute to overall physical activity levels, settings and sources of influence, and strategies and investments.

- 01

Overall Physical Activity Levels
- 02

Organized Sport Participation
- 03

Active Play
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Active Transportation
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Sedentary Behaviors
- 06

Family
- 07

School – PE, PA-Related Policy, and Programs
- 08

Community and the Built Environment
- 09

Government Strategies and Investments

## 01

## Overall Physical Activity Levels

D

21%-40%

We are succeeding with < half, but some, children and adolescents

Percentage of Hong Kong children and youth meeting the recommended physical activity guidelines: Children aged 2-6 years should accumulate at least 180 minutes of physical activity every day and children and youth aged 6-17 years should accumulate at least 60 minutes of MVPA every day.

## Key findings:

Only one study reported overall physical activity in preschool children; 18% of this cohort spent at least 1 hour per day in MVPA; no information on the percentage of preschool children meeting the physical activity recommendation of 180 min/day of physical activity.<sup>11</sup>

For children aged 7-12 years, half of them met the physical activity recommendation,<sup>11</sup> however, the percentage decreased to 30% and 22% at 1-year and 2-year follow-ups (accelerometer data); Self-reported data showed that < 10% of the children met the physical activity recommendation.<sup>6</sup>

For adolescents, nearly 90% of the youth met the recommendation when their physical activity was assessed by accelerometer (n=552);<sup>23</sup> however, self-reported data showed that < 10% of the adolescents met the physical activity recommendation.<sup>11</sup> Another self-report survey showed that: 74.4%-76.4% of boys and 65.9%-73.6% of girls (12-17 years) participated in either exercise or non-exercise physical activity for ≥1 hr/d during school hours. These percentages were even higher during holidays.<sup>15</sup>

## Major gaps and recommendations

There is a lack of data (both objective and subjective measures) from preschool children.

Although the current physical activity recommendation of 180-min of daily physical activity is available for preschoolers, adherence to it has not been assessed.

For both children and youth, longitudinal data from objective measures of physical activity is warranted.

## How to improve the grade?

Public awareness of the physical activity guidelines should be improved, especially for preschool children. In addition, the guidelines should be equipped with a number of strategies to help children, parents, or schools to incorporate physical activity to daily routine. Recent data have shown that Chinese children are more physically active on weekend days than weekdays.<sup>6</sup> Intervention strategies should be tailored to the different needs for school and non-school days, respectively.

## 02

## Organized Sport Participation

C-

41%-60%

We are succeeding with about half of children and adolescents

Percentage of Hong Kong children and youth who participate in organised sport at least once per week

## Key findings:

41% of the boys and 30% of the girls (11-18 year) participated in regular exercise class other than school physical education (PE).<sup>19</sup>

Half of the youth took part in leisure time sport at least once per week. The percentage was lower in girls than in boys.<sup>16</sup>

## Major gaps and recommendations

The two data sources used to assign the grades were collected up to 10 years ago.

There is a lack of data from children aged 12 years or less.

For both children and youth, longitudinal data on sport participation is needed.

More research evidence on the relationship between sport/organised exercise and health is warranted to develop a specific recommendation.

Future research is needed to better understand the influence of SES on sport participation.

## How to improve the grade?

Coaches, teachers, and parents should encourage children and youth to participate in organised sport and exercise outside of PE class, especially for girls. Relevant stakeholders should ensure that all children and youth have equitable access to sport opportunities. Strategies should be strengthened to minimise dropouts from sport, especially for girls.

# 03

## Active Play

INC

Incomplete data

Percentage of Hong Kong children and youth who participate in non-organised sport (active play) at least once per week

This indicator could not be graded because no specific measure of active play available for children and youth in Hong Kong

### Major gaps and recommendations

An incomplete grade was assigned to this indicator due to : (1) a lack of consensus on a robust definition of active play as some studies used playing outdoors to determine this indicator performance in their respective countries;<sup>24,25</sup> (2) current insufficient representative data relevant to active play for Hong Kong youth. Non-exercise PA has been reported for adolescents in Hong Kong; however, it was defined as movement behaviors such as walking for transportation and climbing stairs so that it did not reflect the concern of this indicator as participation in physically active play and the use of outdoor space for active play.<sup>15</sup>

There is a clear need for a better understanding of the frequency, intensity, duration, and context of active play for

Chinese children and youth. Although current literature focuses on active play outdoors, the opportunities for active play indoors may also warrant attention given the high population density, limited space, and very hot weather in Hong Kong. This indicator may be given an incomplete grade in future report cards until more robust data becomes available.

# 04

## Active Transportation

B

61%-80%

We are succeeding with well over half of children and adolescents

Percentage of Hong Kong children and youth who use active transportation to school for at least once per week

### Key findings:

80% of the boys and 77% of the girls actively travelled to school at least once per week.<sup>23</sup>

### Major gaps and recommendations

The grade of this indicator was determined based on only one citywide survey for adolescents.

There is a lack of data from a representative sample of children. For primary school students, a recent longitudinal study showed that half of the students walked to school regularly.<sup>26</sup>

Future research should focus on active transportation to other destinations in addition to school.

Greater emphasis should be placed on examining the relationship between active transportation and overall physical activity on health related outcomes.

### How to improve the grade?

Hong Kong is an ultra-dense metropolis. Most districts are highly self-contained and children usually attend schools close to their home.<sup>27</sup> A safe route to school is essential to encourage more children and youth to regularly walk to school. For those districts with a bicycle track, possibilities for cycling to school need to be explored.

## 05

## Sedentary Behaviors

C

Percentage of Hong Kong children and youth who meet the screen time guideline (< 2 hours / day)

41%-60%

We are succeeding with about half of children and adolescents

## Key findings:

42% of the children aged 4 - 14 years spent no more than 2 hours per day in screen time (TV viewing, computer use, and playing electronic games)

51% of the youth aged 12 - 23 years spent no more than 2 hours per day using the Internet

58% of the boys and 61% of the girls (9 - 13 years) spent no more than 2 hours per day in screen time

## Major gaps and recommendations

Screen-based behaviors have been consistently shown to be associated with various cardiometabolic risk factors.<sup>28,29</sup> Due to the widespread use of tablet computers and smartphones, screen time has become the main public concern in Hong Kong. A grade of C was allocated to sedentary behaviors based on the results from 3 surveys.<sup>8,12,20</sup> However, current evidence mainly focused on traditional screen time, i.e. watching TV, using the Internet, and playing the electronic games. Surveillance data on contemporary media use (tablets and smartphones) is of urgent need among pre-schoolers and school-aged children and youth. Furthermore, more research on non-screen based sedentary behaviors, in

particularly academic-related activities, is needed to better understand the effect of all sedentary behaviors on health outcomes.

## How to improve the grade?

Although guidelines on sedentary behaviors are available in Hong Kong, an awareness of these guidelines among relevant stakeholders is limited. Raising awareness of health outcomes associated with excessive sedentary behaviors, especially screen-based sedentary behaviors, among parents, health educators and professionals, and youth populations is essential. Furthermore, both the home and school environment need to be supportive in limiting the amount of screen time.

## 06

## Family

D

Percentage of parents who are physically active with their kids

21%-40%

We are succeeding with < half, but some, children and adolescents

## Key findings:

49% of the preschool children had physical activity with their family together at least once per week

37% of the children had family physical activity together at least once per week

23% of the adolescents had family physical activity together at least once per month

## Major gaps and recommendations

The grade of this indicator was determined based on only one citywide survey for preschoolers, children and adolescents.

There is a lack of data on peer influence for all age groups. A survey study conducted among 303 grades 4-6 students in Hong Kong showed that girls tend to be more physically active if they perceived more support from their peers.<sup>30</sup> Future research on peer support of physical activity from representative sample is needed especially among adolescents.

## How to improve the grade?

Research has shown that parental support is an important factor in influencing children's physical activity participation. Interventions involving parents or targeting parental practices are promising. Specific strategies catering for the needs of working parents in Hong Kong are particularly important.

C

41%-60%

We are succeeding  
with about half  
of children and  
adolescents

Percentage of schools where the majority of students are offered at least 70 minutes of PE per week

Percentage of schools with active school policies

Percentage of schools that offer physical activity opportunities (excluding PE) to the majority of their students

### Key findings:

77% of the primary schools had PE class between 70 - 120 min per week

70% of the schools had a physical activity related policy (28% with documented policy, 42% with undocumented policy)

85% of the schools held a sport day event; 98% of them participated in inter-school sport competition; 14% of them organized a swimming gala event

### Major gaps and recommendations

School plays an important role in promoting physical activity participation for children and youth. An audit survey conducted in 2009 for primary schools was selected as the major data source to determine the grade of School.<sup>21</sup> Education Bureau (EDB) is a government entity that oversees the implementation of education programmes including PE in Hong Kong. According to the curriculum guide from the EDB, both the primary and secondary schools in Hong Kong should allocate 5% to 8% of the total curriculum time to PE, corresponding to 70 to 120 minutes per week. Based on the audit report, 77% of the responding schools (n=426, 82% response rate) were allocated 70 - 120 minutes of PE lesson per week for the school year 2008/09.<sup>21</sup> However, the actual length of PE lessons was found to be 22% shorter than the scheduled one for secondary school students in previous study.<sup>31</sup> Sport-related extra-curricular

activities were popular among the secondary schools. However, the exact number of participants was not available and it is difficult to determine the impact. Quality of PE and the impact of school sport activities need to be further examined. In addition, there is a lack of evidence on physical activity infrastructure, policies and programs at the preschool level and early childcare settings.

### How to improve the grade?

It is imperative to increase the time spent in MVPA during PE lessons and maximize engagement in sport programs from all students. The PE lessons and sport programs should be continually evaluated to ensure quality physical activity time at school.

B

61%-80%

We are succeeding  
with well over half  
of children and  
adolescents

Percentage of children/youth or parents living in a safe neighborhood where they can be physically active

Percentage of children/youth or parents who have used sport facilities in their community

Percentage of children/youth or parents who are satisfied with parks and sport facilities in their community

### Key findings:

60–79% of parents of youth aged 11 - 18 years felt that their neighborhood was safe (low traffic and crime rate)

The majority of people aged ≥ 12 years were satisfied with the sport facilities provided by the government (location: 95%, price: 70%, cleanliness: 91%, booking arrangement: 66%, staff services: 79%, level of facilities: 85%)

55% of boys and 45% of girls (12 - 14 years) reported that they had used sports facilities in the vicinity of home (overall 50%).

### Major gaps and recommendations

Environmental attributes have been shown to be related to children's physical activity participation. Considering the differences in the physical and cultural environment between Hong Kong and western countries, studies examining environmental correlates on physical activity in Chinese children are increasing over the past decade. This indicator was graded based on two surveys conducted among adolescents. There is a lack of data on environmental attributes and physical activity for pre-schoolers and children. Of further concern, current evidence relied heavily on self-reported perception of the environment. Objectively assessed aspects of the built environment that influence children's physical activity need to be better understood.

### How to improve the grade?

The grade of this indicator is higher than some countries. In general, youth and their parents perceived their community as safe and that the sport facilities were easy to access. However, better understanding of the relationship between features of built environment and physical activity participation is needed, given the difference in the physical environment and climate between Hong Kong and most of the western countries.

INC

Evidence of leadership and commitment in providing physical activity opportunities for all children and youth

Allocated funds and resources for the implementation of physical activity promotion strategies and initiatives for all children and youth

Incomplete data

The indicator of Government is difficult to grade due to the lack of a definitive benchmark.

### Major gaps and recommendations

There is some preliminary evidence on the commitment and initiative of the government in providing physical activity opportunities for all children and youth, however, the exact impact and outcomes are unlikely to be evaluated at this moment.

The Leisure and Cultural Services Department (LCSD) is responsible for the provision of recreation and sports services in Hong Kong. In recent years, the LCSD has organised a wide range of recreational activities for the general public and has made efforts in promoting "Sport for All" in the local community. Specifically, the LCSD has organised School Sports Programmes for students in primary, secondary and special schools to participate in various sport activities during leisure time in schools.<sup>32</sup>

Anecdotal evidence showed that 1,065 schools and 600,617 students participated in the sports activities under the School Sports Programmes scheme in school year 2009/10.<sup>33</sup> A comprehensive and well-designed evaluation of these sports programmes warrants future attention. A better understanding of how the government distributes its funding to relevant sectors is also necessary.

| Indicator                                    | Grades | Benchmark                                                                                                                                                                                                                                                               |
|----------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overall Physical Activity Levels             | D      | % of children and youth who meet physical activity guidelines of 60 minutes of MVPA daily<br>% of preschool children who meet physical activity guidelines of 180 minutes of PA daily                                                                                   |
| Organized Sport Participation                | C-     | % of children and youth who participate in organized sport at least once per week                                                                                                                                                                                       |
| Active Play                                  | INC    | % of children and youth who participate in non-organized sport at least once per week                                                                                                                                                                                   |
| Active Transportation                        | B      | % of children and youth who use active transportation to school at least once per week                                                                                                                                                                                  |
| Sedentary Behaviors                          | C      | % of children and youth who meet screen time guideline (< 2 hr/day)                                                                                                                                                                                                     |
| Family                                       | D      | % of parents who are physically active with their kids                                                                                                                                                                                                                  |
| School – PE, PA-related Policy, and Programs | C      | % of schools where the majority of students are offered at least 70 minutes of PE per week<br>% of schools with active school policies<br>% of school that offer physical activity opportunities (excluding PE) to the majority of their students                       |
| Community and the Built Environment          | B      | % of children or parents living in a safe neighbourhood where they are physically active<br>% of children or parents who have used sport facilities in their community<br>% of children or parents who are satisfied with parks and sport facilities in their community |
| Government Strategies and Investments        | INC    | Evidence of leadership and commitment in providing physical activity opportunities for all children and youth<br>Allocated funds and resources for the implementation of physical activity promotion strategies and initiatives for all children and youth              |

|              |                                                         |
|--------------|---------------------------------------------------------|
| <b>CHS</b>   | Child Health Survey                                     |
| <b>HKSOS</b> | Hong Kong Student Obesity Surveillance                  |
| <b>INC</b>   | Incomplete                                              |
| <b>IPEN</b>  | International Physical Activity and Environment Network |
| <b>MVPA</b>  | Moderate-to-vigorous physical activity                  |
| <b>PA</b>    | Physical activity                                       |
| <b>PE</b>    | Physical education                                      |
| <b>RWG</b>   | Research work group                                     |
| <b>SES</b>   | Social economic status                                  |
| <b>UCAN</b>  | Understanding Children's Activity and Nutrition         |

## Abbreviations

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