

# Non-Communicable Diseases Watch

August 2018



衛生防護中心  
Centre for Health Protection



衛生署  
Department of Health

## Obesity: A Weighty Health Issue

### Key Messages

- ※ One of the greatest public health challenges today is preventing the epidemics of overweight and obesity. Based on statistical data of excess morbidity and mortality associated with increasing body fat content, BMI  $\geq 23$  is considered overweight ( $23 < \text{BMI} < 25$ ) and obesity ( $\text{BMI} \geq 25$ ) for Chinese adults living in Hong Kong. For most Asian adults including Chinese, central obesity is defined as waist circumference  $\geq 90$  cm for men and  $\geq 80$  cm for women.
- ※ The Population Health Survey 2014/15 of the Department of Health found that 50.0% of persons aged 15–84 (57.0% of males and 43.6% of females) were overweight and obese; 36.5% (31.2% of males and 41.3% of females) had central obesity defined by waist circumference. In 2016/17, the overweight and obesity detection rates for primary and secondary school students were 17.6% and 19.9% respectively.
- ※ In May 2018, the Hong Kong SAR Government launched “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” announcing a list of committed actions with clear targets, including Target 7: Halt the rise in obesity (and diabetes). The Government will intensify obesity prevention initiatives in various settings; strengthen the health system at all levels for prevention, early detection and management of those who are overweight and obese; and organise large scale and systematic health communication campaigns to raise public health literacy.
- ※ At the individual level, key actions include eating a balanced diet and engaging in regular physical activity in order to achieve and maintain an optimal body weight.



香港非傳染病防控策略及行動計劃  
Strategy and Action Plan to  
Prevent and Control NCD in Hong Kong



Target 7 : Halt the rise in obesity (and diabetes)

## Obesity: A Weighty Health Issue

Overweight and obesity results from an energy imbalance between calories consumed from foods or beverages and calories expended in normal body functions or daily activities. With increased supply and intake of energy-dense foods and sugar-rich beverages along with an increase in physical inactivity globally, one of the greatest public health challenges today is preventing the epidemics of overweight and obesity.

In fact, the world prevalence of obesity among adults nearly tripled over the past 40 years. In 2016, the World Health Organization (WHO) estimated that 39% of adults aged 18 years and over (39% of men; 40% of women) were overweight and 13% (11% of men; 15% of women) were obese. Among children and adolescents aged 5–19, the prevalence of overweight and obesity also increased markedly from just 4% in 1975 to over 18% in 2016.<sup>1</sup> Overweight and obesity are major risk factors for various chronic diseases, including type 2 diabetes, cardiovascular diseases (mainly heart disease and stroke), certain cancers (including endometrial, breast, ovarian, prostate, colon, liver, gallbladder and kidney), and musculoskeletal disorders (especially osteoarthritis).<sup>1</sup> Increased prevalence of overweight and obesity unquestionably comes with an increase in obesity-related morbidity, disability and mortality.

### Measurement of Overweight and Obesity

Body mass index (BMI) is a commonly used measure of general adiposity. It is calculated by dividing the body weight (in kg) by the square of height (in m):  $\text{kg/m}^2$ . Based on statistical data of excess morbidity and mortality associated with increasing body fat content, BMI  $\geq 23$  is considered overweight ( $23 < \text{BMI} < 25$ ) and obesity ( $\text{BMI} \geq 25$ ) for Chinese adults living in Hong Kong.<sup>2</sup> However, it is not just the amount of fat but also its distribution that determines the health risk associated with obesity. Excess accumulation of fat inside the abdominal cavity (i.e. central obesity) has more

serious health consequences than fat located under the skin. Independent of total body fat, studies show that central obesity is related to increased risk of cardio-metabolic complications and mortality. Thus, assessment of body fat distribution is equally important as measurement of total body fat. To estimate abdominal fatness, it can simply be made by measuring waist circumference. For most Asian adults including Chinese, central obesity is defined as waist circumference  $\geq 90$  cm for men and  $\geq 80$  cm for women.<sup>2</sup> The waist-to-hip ratio is another indicator to measure central obesity. It is calculated by dividing the waist circumference by the hip circumference. For Asian populations, waist-to-hip ratio  $\geq 0.90$  for men and  $\geq 0.85$  for women signify central obesity.<sup>2,3</sup>

Children and adolescents are still growing, and they grow at different rates depending on their age and gender. Hence, the adult BMI values to signify overweight and obesity or using a uniform reference value for waist circumference to define central obesity may not be appropriate for them. In Hong Kong, the Student Health Service (SHS) of Department of Health (DH) adopts the 1993 Hong Kong Growth Standard of Southern Chinese to assess growth for all primary and secondary students. Body weight  $> 120\%$  of the median weight-for-height derived from the reference is regarded as overweight (including obesity). While BMI is used for male students with height  $> 175$  cm and female students with height  $> 165$  cm, BMI  $\geq 25$  would indicate obesity. Beyond waist circumference, waist-to-height ratio (calculated by dividing the waist circumference by standing height) is another anthropometric measure proposed for assessing central obesity in children and adolescents. Despite controversy surrounding the thresholds, literature in general defines central obesity among children as having age- and gender-specific waist circumference  $\geq 90^{\text{th}}$  percentile or waist-to-height ratio  $\geq 0.5$ .<sup>4,5</sup>

## Local Situation

The DH conducted the Population Health Survey 2014/15 to collect data on population health, including measurements of body weight, height, waist and hip circumferences of over 2 300 non-institutionalised persons aged 15–84. Results showed that 50.0% of persons aged 15–84 (57.0% of males and 43.6% of females) were overweight and obese; 36.5% (31.2% of males and 41.3% of females) had central obesity defined by waist circumference and 40.1% (41.5% of males and 38.9% of females) had central obesity defined

by waist-to-hip ratio. Analysed by age group, overweight and obesity were most common among males aged 45–54 (73.2%) and females aged 65–84 (62.7%). The prevalences of central obesity based on both waist circumference and waist-to-hip ratio definitions generally increased with age, from 12.6% and 8.3% for those aged 15–24 to 51.2% and 64.5% for those aged 65–84 respectively (Table 1).<sup>6</sup>

**Table 1: Proportion of non-institutionalised persons aged 15–84 who were overweight and obese as defined by body mass index and had central obesity based on waist circumference and waist-to-hip ratio definitions by gender and age group**

Age group	Male			Female			Both gender		
	Body mass index $\geq 23$	Waist circumference $\geq 90$ cm	Waist-to-hip ratio $\geq 0.90$	Body mass index $\geq 23$	Waist circumference $\geq 80$ cm	Waist-to-hip ratio $\geq 0.85$	Body mass index $\geq 23$	Waist circumference*	Waist-to-hip ratio*
15 – 24	26.1%	8.5%	9.6%	21.9%	16.8%	6.9%	24.1%	12.6%	8.3%
25 – 34	49.3%	22.6%	17.6%	26.4%	24.1%	20.2%	37.3%	23.4%	18.9%
35 – 44	60.7%	30.8%	34.5%	40.5%	33.9%	29.3%	49.6%	32.5%	31.7%
45 – 54	73.2%	42.4%	54.7%	52.7%	46.3%	45.8%	62.2%	44.5%	50.0%
55 – 64	63.5%	36.7%	60.9%	51.6%	59.9%	58.1%	57.5%	48.4%	59.5%
65 – 84	61.3%	41.0%	62.8%	62.7%	61.0%	66.2%	62.0%	51.2%	64.5%
<b>Overall</b>	<b>57.0%</b>	<b>31.2%</b>	<b>41.5%</b>	<b>43.6%</b>	<b>41.3%</b>	<b>38.9%</b>	<b>50.0%</b>	<b>36.5%</b>	<b>40.1%</b>

Note: \* Central obesity — Waist circumference: Male  $\geq 90$  cm , Female  $\geq 80$  cm  
Waist-to-hip ratio: Male  $\geq 0.90$  , Female  $\geq 0.85$

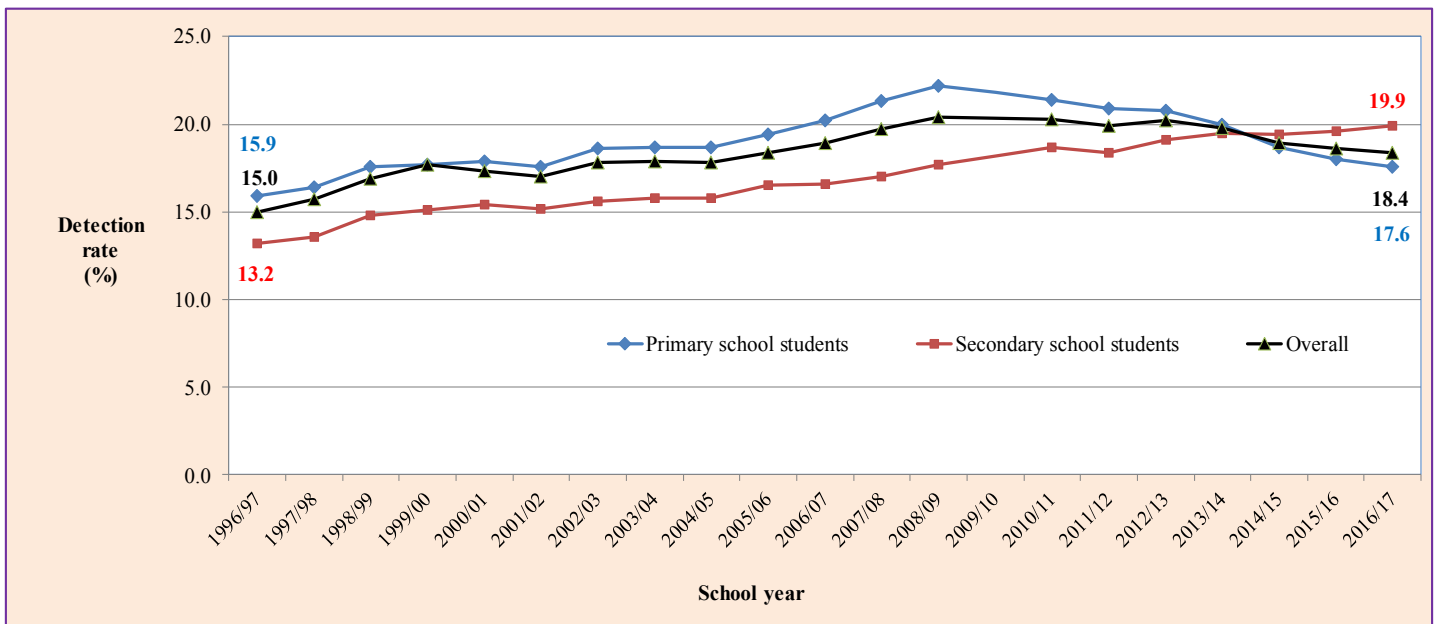
Base: All respondents aged 15–84 who had participated in the health examination with valid measurements.

Source: Population Health Survey 2014/15, Department of Health.

Data from the SHS of DH showed that the proportions of primary and secondary students considered overweight and obese increased from 15.0% in 1996/97 to 20.4% in 2008/09, and then decreased to 18.4% in 2016/17. As shown in Figure 1, the overweight and obesity detection rates for primary school students steadily decreased from 22.2% in 2008/09 to 17.6% in 2016/17. On the contrary, the corresponding detection rates for secondary school students continued to rise from 17.7% to 19.9% over the same period.<sup>7</sup>

Furthermore, a study of over 14 500 children and adolescents aged 7–19 who undertook anthropometric measurements between 2004 and 2006 reported that the prevalence of central obesity was 12.2% for boys and 10.5% for girls by using waist circumference cut-off of  $\geq 90^{\text{th}}$  percentile respectively. By using waist-to-height ratio cut-off of  $\geq 0.5$ , the corresponding prevalence was 8.7% for boys and 3.2% for girls.<sup>8</sup>

**Figure 1: Overweight and obesity detection rate of primary and secondary school students from school year 1996/97 to 2016/17**



Note: In school year 2009/10, the Student Health Service of the Department of Health had to take part in the Human Swine Influenza Vaccination Programme, and therefore annual appointments were only provided to Primary 1 to Secondary 1 students. Due to the incomplete coverage, the detection rates for school year 2009/10 were not shown.  
 Source: Student Health Service, Department of Health.

## Halt the Rise in Obesity

Obesity and its related chronic diseases are largely preventable. In Hong Kong, tackling obesity has been accorded high priority for action in the prevention and control of non-communicable diseases with a wide range of related policies and programmes being implemented. In May 2018, the Government launched “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” (SAP) announcing a list of committed actions and clear targets. Of the 9 local NCD targets to be achieved by 2025, Target 7 is to halt the rise in obesity (and diabetes) (Box 1).<sup>9</sup>

To achieve the target, the Government will intensify obesity prevention initiatives in preschools, schools, workplaces and community; strengthen the health system at all levels, in particular a comprehensive primary care for prevention, early detection and management of those who are overweight and obese based on the family doctor model; and organise large scale, systematic and outcome-based health communication campaigns to raise public awareness of lifestyle factors (such as healthy diet, physical activity, avoidance of tobacco and alcohol), their relevance to biomedical states (such as body weight, blood pressure and blood sugar) and NCD risk, encouraging the public to make changes for better health.<sup>9</sup>

### Box 1: 9 local NCD targets by 2025



#### Target 1

A 25% relative reduction in risk of premature mortality from cardiovascular diseases, cancers, diabetes, or chronic respiratory diseases



#### Target 2

At least 10% relative reduction in the prevalence of binge drinking and harmful use of alcohol (harmful drinking/alcohol dependence) among adults and in the prevalence of drinking among youth



#### Target 3

A 10% relative reduction in the prevalence of insufficient physical activity among adolescents and adults



#### Target 4

A 30% relative reduction in mean population daily intake of salt/sodium



#### Target 5

A 30% relative reduction in the prevalence of current tobacco use in persons aged 15+ years



#### Target 6

Contain the prevalence of raised blood pressure



#### Target 7

Halt the rise in diabetes and obesity



#### Target 8

Prevent heart attacks and strokes through drug therapy and counselling



#### Target 9

Improve availability of affordable basic technologies and essential medicines to treat major NCD

At the individual level, key actions include eating a balanced diet (Box 2) and engaging in regular physical activity (Box 3) in order to achieve and maintain an ideal body weight.

### Box 2: Constitution of a Healthy Diet (for Adults)<sup>10, 11</sup>

- ✓ Including the five basic food groups (i.e. grains; fruit; vegetables; meat, fish, egg and alternatives; milk and alternatives);
- ✓ At least 400 grams (5 servings) of fruit and vegetables a day;
- ✓ Less than 10% of daily total energy intake from free sugars. For a person of healthy body weight consuming approximately 2 000 calories per day, it is equivalent to about 50 grams (or 10 teaspoons). For additional health benefits, a further reduction to below 5% of total energy intake is recommended;
- ✓ Less than 30% of total energy intake from fats i.e. about 60 grams per day for a 2 000 calories meal plan. Unsaturated fats (such as vegetable oil, olive oil) are preferable to saturated fats (e.g. butter, lard). Industrial trans fats are not part of a healthy diet;
- ✓ Less than 5 grams of salt (equivalent to about 1 teaspoon) per day

### Box 3: Recommendations on Physical Activity for Health<sup>12</sup>

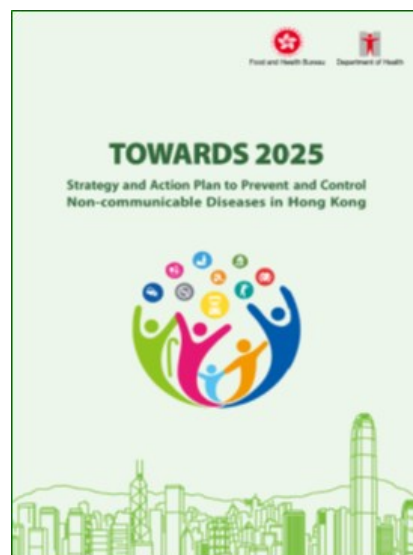
#### Adults:

- ✓ Do at least 150 minutes a week of moderate-intensity aerobic physical activity, or at least 75 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate and vigorous-intensity activity;
- ✓ Minimise the amount of time spent being sedentary (sitting) and break up long periods of sitting as often as possible.

#### Children and Adolescents aged 5 – 17 years:

- ✓ Accumulate at least 60 minutes a day of moderate- to vigorous-intensity aerobic physical activity;
- ✓ Minimise the amount of time spent being sedentary (sitting) and break up long periods of sitting as often as possible.

For more information about the Government key initiatives and specific actions to halt the rise in obesity, please refer to the SAP which can be found at the Change for Health Website of DH <https://www.change4health.gov.hk/en/saptowards2025/>.



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World Breastfeeding Week (WBW) is celebrated annually in the first week of August. It aims to bring worldwide awareness of protecting, promoting and supporting breastfeeding. For 2018, the slogan of WBW is “BREASTFEEDING: Foundation of Life”.

To celebrate the WBW 2018, the Department of Health (DH) in collaboration with the Hospital Authority (HA), Hong Kong Committee for UNICEF (UNICEF HK) and Baby Friendly Hospital Initiative Hong Kong Association (BFHIHKA) successfully completed the WBW 2018 photo competition, and held the Celebration Event of the WBW 2018 on 26 July to raise public awareness of sustaining breastfeeding.

Breastfeeding is the foundation of lifelong good health for babies and mothers. Let’s continue to support breastfeeding. For information on breastfeeding, please visit the website of Family Health Service of DH: <http://www.fhs.gov.hk/english/breastfeeding/>.

**Non-Communicable Diseases (NCD) WATCH** is dedicated to promote public’s awareness of and disseminate health information about non-communicable diseases and related issues, and the importance of their prevention and control. It is also an indication of our commitments in responsive risk communication and to address the growing non-communicable disease threats to the health of our community. The Editorial Board welcomes your views and comments. Please send all comments and/or questions to [so\\_dp3@dh.gov.hk](mailto:so_dp3@dh.gov.hk).

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