

## Enjoy Fruit and Vegetables Every Day

### Key Messages

Fruit and vegetables contain a myriad of health-promoting nutrients. To improve overall health and reduce the risk of chronic diseases, the Department of Health (DH) of the Government of the Hong Kong Special Administrative Region recommends adults to consume at least 2 servings of fruit and at least 3 servings of vegetables daily, which aligns with the World Health Organization's recommendation of at least 5 servings of fruit and vegetables a day.

Local people have an inadequate intake of fruit and vegetables. According to the Health Behaviour Survey 2023, only 3.0% of persons aged 15 or above reported daily consumption of 5 or more servings of fruit and vegetables.

The public should cultivate the habit of "2 Plus 3 Every Day". To ensure adequate intake of various nutrients and phytochemicals, be sure to consume an array of fruit and vegetables incorporating various types and colours.

### Introduction

Fruit and vegetables, which come in a wide variety of colours, shapes, flavours and textures, contain many health-enhancing properties. To improve overall health and reduce the risk of chronic diseases, the World Health Organization (WHO) recommends adults to consume at least 400 grams (g) of fruit and vegetables (i.e. 5 servings of about 80 g each) a day, excluding potatoes, sweet potatoes, cassava and other starchy roots<sup>1</sup>. Recognising low fruit and vegetable consumption as an important but modifiable risk factor for both morbidity and mortality from common non-communicable diseases (NCDs)<sup>2</sup>, increased fruit and vegetable consumption is promoted in almost all national dietary guidelines<sup>3</sup>.

However, people across the globe on average consume only about two-thirds of the recommended minimum amounts of fruit and vegetables<sup>4</sup>. In 2021, the Global Burden of Disease Study estimated that diet low in fruit was responsible for 1.68 million deaths and 43.8 million disability-adjusted life years (DALYs, i.e. the number of healthy years lost due to illness, disability or early death)<sup>5</sup>, while diet low in vegetables was responsible for 0.86 million deaths and 20.7 million DALYs<sup>6</sup>.

In line with the WHO recommendation of at least 5 servings of fruit and vegetables per day, the Department of Health (DH) of the Government of the Hong Kong Special Administrative Region recommends adults to cultivate the habit of '2 Plus 3 Every Day' (i.e. eating at least 2 servings of fruit and 3 servings of vegetables daily)<sup>7</sup>. This article reiterates the health benefits of optimal consumption of fruit and vegetables and reports the consumption patterns among the local population aged 15 or above, urging the public to eat more fruit and vegetables for good health.

**一份水果的例子:**  
Examples of one serving of fruit:

- 2 個小型水果  
pieces of small-sized fruit
- 1 個中型水果  
piece of medium-sized fruit
- 1/2 個大型水果  
piece of large-sized fruit
- 1/2 碗顆粒狀水果 / 水果塊  
bowl of mini-sized fruit / cut-up fruit

**每日水果蔬菜**  
**2+3 Every Day**

Servings of Fruit      Servings of Vegetables

**一份蔬菜的例子:**  
Examples of one serving of vegetables:

- 1/2 碗煮熟瓜類  
bowl of cooked gourds
- 1 碗未煮熟蔬菜  
bowl of uncooked vegetables
- 1/2 碗煮熟蔬菜  
bowl of cooked vegetables

備註: 1 碗 = 250 - 300 毫升  
Remark: 1 bowl = 250 - 300 ml

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每日水果蔬菜 2+3  
2 plus 3 Every Day

衛生署  
Department of Health

## Health Benefits of Optimal Fruit and Vegetable Consumption

There is compelling evidence that a diet rich in fruit and vegetables confers multiple health benefits (Figure 1)<sup>4, 8, 9</sup>, including reduced risks of malnutrition (such as micronutrient deficiency, overweight and obesity<sup>8, 9</sup>), cardiovascular diseases (such as hypertension, coronary heart disease and stroke<sup>10, 11</sup>), type 2 diabetes<sup>12</sup>, certain cancers (such as colorectal cancer and

aerodigestive cancer<sup>13</sup>) and chronic respiratory diseases (such as chronic obstructive pulmonary disease<sup>14</sup> and asthma<sup>15</sup>); enhanced mental health (such as reducing depressive symptoms and level of psychological distress<sup>16</sup> and reduced risk of cognitive impairment in older adults<sup>17</sup>); as well as improved immunity and increased longevity<sup>4, 9</sup>.

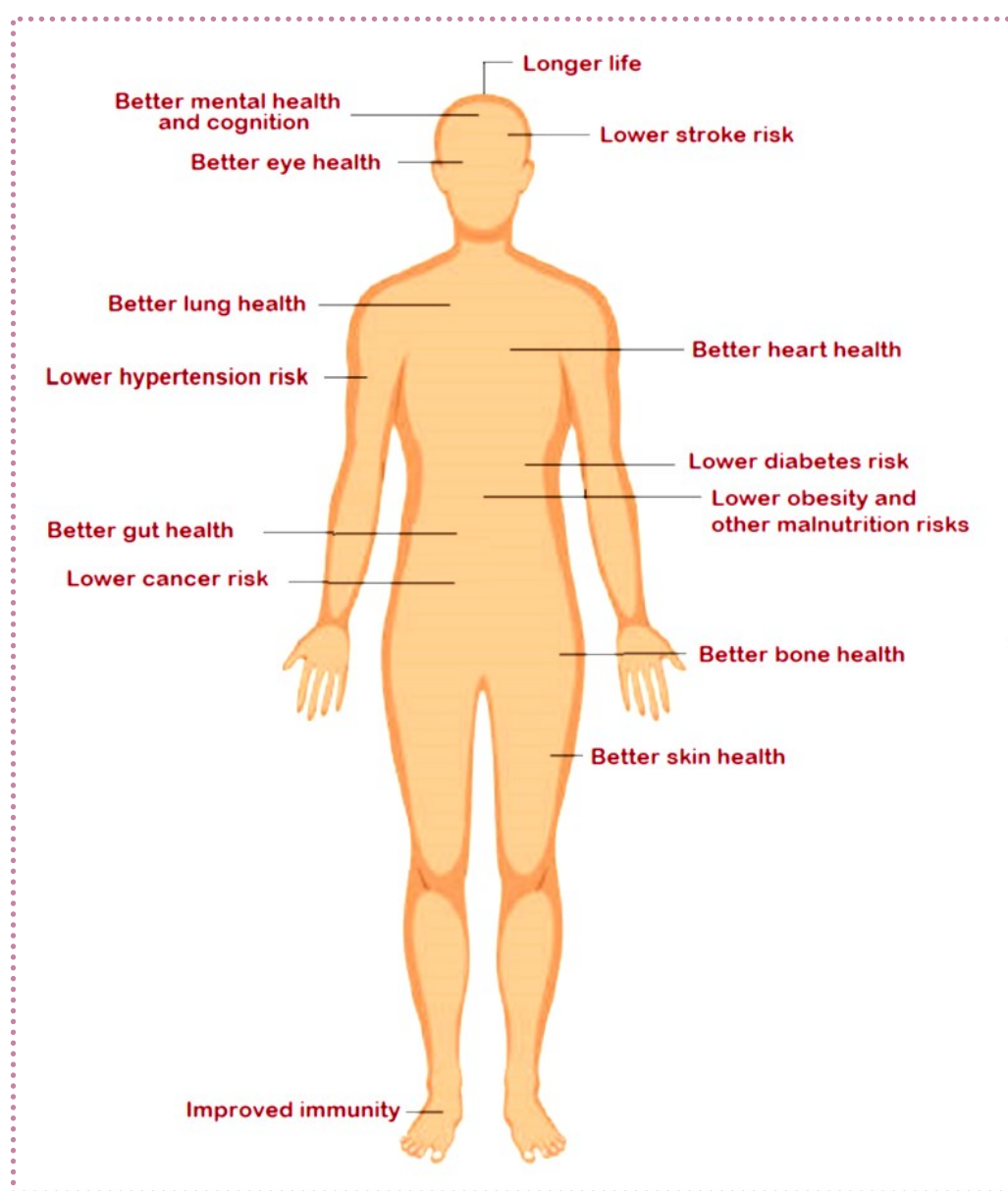


Figure 1: Health benefits of sufficient consumption of fruit and/or vegetables

Numerous attributes of fruit and vegetables may explain their beneficial effects on health outcomes. The majority of fruit and vegetables are naturally low in fat and calories. While they fall into different colour categories (red, orange/yellow, green, white/brown and purple/blue), each colour carries its own set of unique disease fighting phytochemicals, such as lycopene, anthocyanin, carotenoids, lutein, zeaxanthin and chlorophyll (Table 1). In addition, fruit and vegetables contain various health-promoting antioxidants, vitamins (especially A, C and folate), minerals (such as potassium, magnesium and zinc),

plant proteins and dietary fibre (including soluble and insoluble fibre)<sup>9, 18</sup>. These natural bioactive compounds are able to act synergistically to prevent or slow down the onset of chronic diseases through a number of disease-preventive mechanisms, such as reducing damages to cell by free radicals, lessening chronic inflammation, reducing blood pressure, inhibiting platelet aggregation and thrombus formation, enhancing insulin sensitivity, reducing low-density lipoprotein cholesterol and triglyceride levels, and improving gut microbiota composition as well as diversity<sup>18, 19</sup>.

*Table 1: Examples of fruit and vegetables in different colour categories and relevant key phytochemicals<sup>4</sup>*

### Red

Lycopene and anthocyanins that can lower the risk of cancer and improve heart health

#### Examples

- ◆ Red apple, red grape, water melon, strawberry, cherry
- ◆ Red bell pepper, tomato, red radish



### Orange/Yellow

Carotenoids, lutein and zeaxanthin that help keep eyes healthy

#### Examples

- ◆ Orange, mango, papaya, pineapple, cantaloupe melon, lemon
- ◆ Carrot, yellow bell pepper, corn, pumpkin



### Green

Chlorophyll with anti-cancer properties

#### Examples

- ◆ Green apple, green grape, kiwifruit, avocado
- ◆ Green leafy vegetables, green bell pepper, broccoli, cucumber, celery



### White/Brown

Anthoxanthins and allicin with antiviral and antibacterial properties as well as potassium

#### Examples

- ◆ Banana, brown pear, pomelo, white peach
- ◆ Onion, cauliflower, mushroom, garlic, ginger



### Purple/Blue

Anthocyanins that can reduce the risk of cancer, heart disease and stroke

#### Examples




- ◆ Purple grape, blueberry, plum, prune, purple fig
- ◆ Eggplant, purple cabbage, purple onion



## Patterns of Fruit and Vegetable Consumption among the Local Population

Surveys show that local people are consuming insufficient amount of fruit and vegetables. The DH conducted the Health Behavior Survey 2023<sup>20</sup> to collect information on major health behaviours and lifestyle practices associated with NCDs among 4 839 persons aged 15 or above in Hong Kong, including consumption of fruit and vegetables. Results showed that daily fruit consumption was reported by 62.7% of persons aged 15 or above. On the days when they ate fruit, the estimated mean number of servings was 1.2. For vegetables, the corresponding proportion of daily consumption was 83.9% and the estimated mean number of servings was 1.3. Overall, 14.2%, 4.5% and 3.0% of persons aged 15 or above reported daily consumption of 2 or more servings of fruit, 3 or more servings of vegetables and 5 or more servings of fruit and vegetables, respectively (Table 2). The prevalence of insufficient fruit and vegetable consumption did not change much when compared with that in the Population Health Surveys 2014-15 and 2020-22<sup>20</sup>.

Table 2: Health Behaviour Survey 2023 - Consumption of fruit and vegetables among persons aged 15 or above

		Male	Female	Overall
	2 or more servings of fruit per day	12.4%	15.8%	14.2%
	3 or more servings of vegetables per day	4.2%	4.9%	4.5%
	5 or more servings of fruit and vegetables per day	2.7%	3.3%	3.0%

Similarly, the Centre for Food Safety conducted two territory-wide food consumption surveys in 2005-2007 and 2018-2020 to investigate the food consumption of Hong Kong adults, including fruit and vegetables. Results showed that the average amount of fruit consumption dropped from 146.81 grams per day (g/d) to 120.31 g/d, while the average amount of vegetable consumption (including legumes) increased from 191.08 g/d to 202.65 g/d during the period between the two surveys. Combined fruit and vegetables together, the total consumption in 2018-2020 was comparable to that in 2005-2007 .

## Go for a Variety and Different Colours of Fruit and Vegetables

Members of the public are encouraged to eat more fruit and vegetables. The daily goal of '2 Plus 3 Every Day' can be met from eating fresh (whenever possible), frozen and canned fruit (except fruit desserts with a lot of added sugar and fruits like coconuts, durians and avocados that are naturally high in fat) and vegetables (except preserved vegetables, such as salt-cured and pickled vegetables). Since fruit and vegetables differ in the amount of nutrients they contain, eating a mix of fruit and vegetables is the best way to consume a wide variety of vitamins, minerals and phytochemicals. Compared to a whole fruit and vegetables, pure juices contain less dietary fibre and pure fruit juices have a much higher sugar content. So, it is the best to go for whole fruit and vegetables rather than pure juices. Pure fruit or vegetable juices in excess of  $\frac{3}{4}$  glass (180 ml) will still be counted as one serving of fruit or vegetables only. However, a local survey in 2023 found that up to 30% of adults aged 18–64 mistakenly appraised that 'eating fruit can replace eating vegetables' or 'drinking a cup of freshly squeezed orange juice is as healthy as eating an orange', respectively<sup>22</sup>.

In Hong Kong, various kinds of fresh fruit and vegetables are in year round availability. The public are encouraged to include an array of seasoned fruit and vegetables from different colour groups in daily diet for obtaining the maximum health benefits with various phytochemicals. Below are some ways to eat more fruit and vegetables each day:

- ✓ Keep fruit and vegetables around and in eye-catching areas.
- ✓ Serve fruit and vegetables as snacks.
- ✓ Have fruit for appetizer or dessert.
- ✓ Add vegetables to the majority of dishes, rice or noodles, soups or stews.
- ✓ Add vegetables to sandwiches.
- ✓ Add fresh or dried fruits (without sugar) to breakfast cereal, salad or plain low-fat yogurt.
- ✓ Fill at least one-third of the lunch box with vegetables when preparing own lunch.
- ✓ Try to include at least 2 kinds of vegetables as main dishes, opt for vegetable soups and eat the soup ingredients when eating out.
- ✓ Start with the salad bar first when visiting a buffet restaurant.



The DH will continue organising health promotional campaign using a variety of strategies to increase people's health literacy and awareness of the importance of healthy eating with sufficient consumption of fruit and vegetables, as well as work with community partners to empower members of the public to make healthier choices. For more information about '2 Plus 3 Every day' or healthy fruit and vegetables recipes, please visit the thematic website at [www.chp.gov.hk/en/static/100011.html](http://www.chp.gov.hk/en/static/100011.html).

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The Department of Health (DH) has launched its official WeChat account to provide the community with more channels to learn about its work in various fields of public health, such as execution of statutory functions, health promotion, disease prevention, curative and rehabilitative services. The platform will also facilitate the public in learning the latest and important health information.

Members of the public can search for "HKSARDH" on the WeChat platform or scan the QR code to view, follow, and share information from the WeChat account.

In addition to the official WeChat account, the DH has also launched its official [YouTube channel](#), [Facebook page](#) and [Instagram account](#), as well as [DH Mobile App](#). Moving forward, the DH will continue to adopt a multi-faceted approach, utilising both traditional channels and social media platforms for promotion, publicity and public education to safeguard public health.

# Joyful Fruit Month



The Department of Health had held the annual “Joyful Fruit Day” event since the 2006/07 school year to encourage an adequate daily intake of fruit among students, and subsequently upgraded the event to the “Joyful Fruit Month” in the 2012/13 school year. Since then, April has been designated as the “Joyful Fruit Month” every year.

The “Joyful Fruit Month” aims to create a favourable environment that encourages students to develop the habit of eating adequate fruit every day. All schools are encouraged to systematically organise year-round fruit promotion activities to boost students’ interest in eating fruit, and to lift the atmosphere of eating fruit to a climax throughout the “Joyful Fruit Month” in April. For “Joyful Fruit Month” 2025, the theme cum slogan “**Two Servings of Fruit, Your Health, Your Say**” is being adopted as to promote the message that daily fruit intake is essential for good health.

For more details about the “Joyful Fruit Month” and relevant activities, please visit thematic website at [school.eatsmart.gov.hk/en/content\\_joyful.aspx](http://school.eatsmart.gov.hk/en/content_joyful.aspx).

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