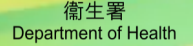


April 2018



## Enjoy Eating Fruit and Vegetables Everyday

Fruit and vegetables are important components of a healthy diet.<sup>1</sup> There is convincing evidence that a diet rich in fruit and vegetables can lower the risk of hypertension, coronary heart disease and stroke. Adequate consumption of fruit and vegetables also protects against some cancers.<sup>2</sup> Studies showed that the phytochemicals and nutrients (such as polyphenols, vitamins and minerals) found in fruit and vegetables can prevent oxidative damage to cells and DNA caused by free radicals, inhibit platelet aggregation and reduce vascular tone, modulate the levels of cholesterol and other lipids in the arteries, regulate hormone metabolism, enhance immune function or constrain certain bacterial and fungal activities.<sup>3,4</sup> A meta-analysis of 16 prospective cohort studies reported that higher consumption of fruit and vegetables was associated with a reduced risk of all-cause mortality, with an average risk reduction of 5% for each additional serving a day (6% for fruit and 5% for vegetables). There was a consumption threshold around 5 servings, after which the risk of death did not reduce further.<sup>5</sup>

### Recommended Serving(s)

Depending on age or physical health status, people need different amounts of fruit and vegetables. The Department of Health (DH) of Hong Kong recommends adults and adolescents aged 12-17 to consume at least 2 servings of fruit and at least 3 servings of vegetables per day (which is in line with the World Health Organization's recommendations of at least 5 servings of about 80 grams each a day<sup>1</sup>) to ensure an adequate daily intake of dietary fibre and reduce the risk of chronic non-communicable diseases. For children aged 6-11 years and 2-5 years, they are recommended to consume at least 4 servings and 2.5 servings of fruit and vegetables daily respectively (Table 1).<sup>6</sup> However, many people are unable to meet such dietary recommendation.

**Table 1: Recommended serving(s) of fruit and vegetable intake per day by age group**

Age group	Recommended serving(s) of fruit per day*	Recommended serving(s) of vegetables per day**
2-5 years	At least 1 serving	At least 1.5 servings
6-11 years	At least 2 servings	At least 2 servings
12-17 years	At least 2 servings	At least 3 servings
18-64 years		
65 years and above		

Remarks: \*1 serving of fruit = 1 piece of medium-sized fruit (such as orange, apple), 2 pieces of small-sized fruits (such as plum, kiwifruit), 0.5 bowl of mini-sized fruit (such as grape, cherries, strawberry), or 0.5 bowl of fruit cuts (such as watermelon, cantaloupe, honeydew melon). \*\* 1 serving of vegetable = 1 bowl of raw leafy vegetables (e.g. lettuce, purple cabbage), or 0.5 bowl of cooked vegetables, sprouts, gourds, beans or mushrooms (e.g. Chinese flowering cabbage, Chinese kale, spinach, white cabbage, bean sprouts, eggplant, carrot, snow pea, Enokitake mushroom).

## Fruit and Vegetables Consumption around the World

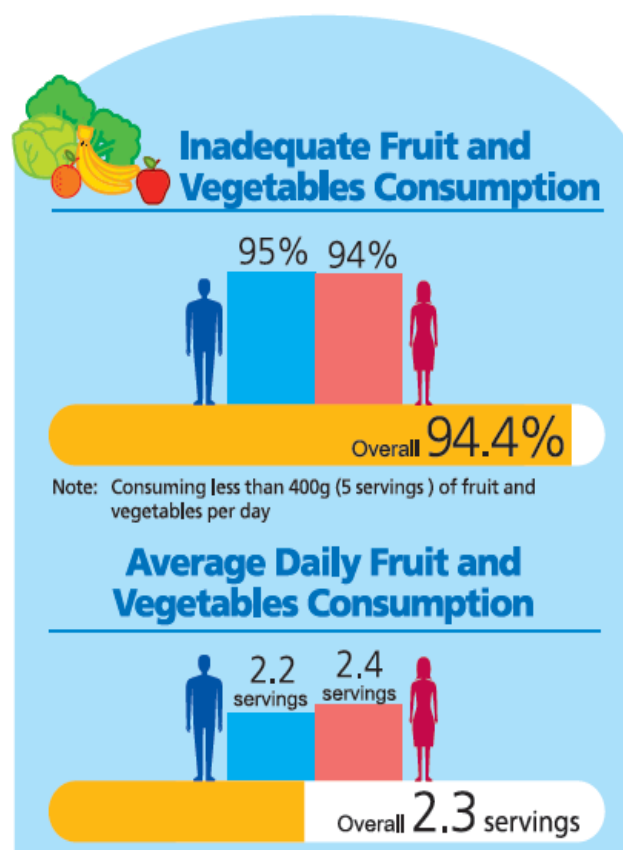
A systematic analysis including 266 country-specific nutrition surveys worldwide reported that the mean global fruit and vegetables (including legumes) consumption among adults in 2010 was 81.3 g/day and 208.8 g/day respectively.<sup>7</sup> Another prospective study of over 143 300 people aged 35-70 years from communities in 18 countries between 2003 and 2013 also observed that three-fifths (60%) participants did not eat sufficient amounts of fruit and vegetables, with a mean fruit and vegetables consumption of 3.76 servings/day (1.62 servings/day for fruit; 2.19 servings/day for vegetables).<sup>8</sup>

Most children and adolescents consumed too few fruit and vegetables as well. In the US, mean intake of total fruit and vegetables in cup-equivalents per 1 000 calories among children and adolescents aged 2-18 years was 0.62 and 0.53 per day respectively.<sup>9</sup> Among the 15-year-olds in 27 European countries, daily fruit eating was reported by 26% of boys and 34% of girls. The corresponding proportion for daily vegetable eating was 27% and 35%.<sup>10</sup> Among school children aged 13-15 in five Southeast Asian countries, 28% and about 14% of them reported consuming fruit and vegetables less than once per day respectively. Overall, over three-quarters (76%) of them had inadequate fruit and vegetables intake (less than 5 servings per day), with a daily mean of 3.2 servings of fruit and vegetables.<sup>11</sup>

## Fruit and Vegetables Consumption among People in Hong Kong

Likewise, people in Hong Kong consumed well below the recommended level. The Population Health Survey 2014/15 observed that less than two-thirds (62.6%) of persons aged 15 and above reported eating fruit daily and the estimated mean number of servings of fruit consumption was 1.1 per day. Although over four-fifths (86.6%) of persons aged 15 and above reported eating vegetables daily, the estimated mean number of servings was 1.4 per day. Overall, 94.4% of persons aged 15 and above were found to have inadequate fruit and vegetables consumption (i.e. consuming less than 5 servings of fruit and vegetables per day); the estimated mean number of servings of fruit and vegetables consumption was merely 2.3 per day (Figure 1).<sup>12</sup>

**Figure 1: Consumption of fruit and vegetables among persons aged 15 and above**



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

Among children, the annual questionnaire surveys administered by DH's Student Health Service in academic year 2016/17 showed that about one-third (35.2%) and three-fifths (58.5%) of primary school students reported eating fruit and vegetables every day respectively. On the days that they ate fruit and vegetables, less than half reported eating 2 or more servings as recommended (Table 2).<sup>13</sup>

A survey of young child feeding conducted by the Family Health Service of DH in 2016 observed that about half of young children in the 24-month and 48-month groups met the recommended fruit intake of at least 1 serving per day, and about one-fifth consumed at least 1.5 servings of vegetables per day as recommended.<sup>14</sup>

**Table 2: Pattern of fruit and vegetables intake (excluding fruit juice or vegetable juice) among primary school students, 2016/17**

		Fruit	Vegetables
Number of days eating fruit and vegetables per week	All 7 days	35.2%	58.5%
	4-6 days	33.7%	23.6%
	3 days or less	30.6%	16.3%
Number of servings eaten on the days that they ate fruit /vegetables	2 servings or more	45.0%	44.8%
	Less than 2 servings	54.7%	54.7%

Notes: Percentage is calculated based on the number of self-administrated questionnaires. As some students did not complete the respective questions, the percentages do not add up to 100%.

Source: Student Health Service, Department of Health.

**Table 3: Proportion of young children aged 1 to 4 years meeting the recommended daily intake of fruit and vegetables, 2016**

	Age	Recommended quantity per day	Proportion of young children meeting the recommendation
Fruit	12-month-old	At least 0.5 serving	67.8%
	18-month-old		79.0%
	24-month-old	At least 1 serving	46.3%
	48-month-old		53.5%
Vegetables	12-month-old	At least 1 serving	37.0%
	18-month-old		43.7%
	24-month-old	At least 1.5 servings	19.6%
	48-month-old		22.2%

Source: Survey of Young Child Feeding in Hong Kong (2016), Department of Health.



## Improving Fruit and Vegetables Consumption

Many factors can affect fruit and vegetables consumption behaviours. Apart from individuals' taste preferences, nutritional knowledge (such as the recommended level of fruit and vegetables consumption) or food skills (such as shopping, preparation and cooking skills), availability or accessibility of fruit and vegetables (such as at home, in schools or at restaurants) is also a major determinant.<sup>15</sup>

In Hong Kong, various kinds of fresh fruit and vegetables are in year round availability. To make healthy choice an easier choice for school children and the general public, DH launched the 'EatSmart@school.hk' Campaign and EatSmart@restaurant.hk' Campaign, working together with participating school lunch suppliers and restaurants to offer healthy dishes with more fruit and vegetables. DH also designated April as 'Joyful Fruit Month' in order to encourage the public to make eating fruit a habit. The general public should remember '2 plus 3' every day with a variety of types and colours of seasonal fruit and vegetables for getting different nutrients and phytochemicals.

To eat more fruit and vegetables, we can keep fruit in eye-catching areas and add vegetables to the majority of our dishes at home. When we snack, replace chips, candies, chocolates and biscuits with fruits (fresh or dried) or salad vegetables (such as cucumbers, carrots and cherry tomatoes). When we eat out, try to include at least two kinds of vegetables as main dishes; opt for vegetables soups instead of creamy soups; choose plain rice with less meat and more vegetables, or a bowl of noodles with a small plate of vegetables. When we pack our own lunch, make sure at least one-third of our lunch box is filled with vegetables and bring along some fruit that requires the least effort to be peeled or eaten (such as banana, grapes, apples and pears). For some patients with certain diseases, they should be alerted to avoid or limit consumption of certain kinds of fruit. For example, patients with kidney diseases should avoid star fruit. It is because their weakened kidneys would not be able to process and pass out the 'toxic substance' present in star fruit. While there is no need for diabetics to avoid certain kinds of fruit (such as banana) because of their sweeter taste, they should control the amount of intake. If indicated, please consult a doctor or dietitian. For more tips for adding more fruit and vegetables into diet, visit the website of the Centre for Health Protection at <https://www.chp.gov.hk/en/static/100011.html>.

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## Joyful Fruit Month 2018

The Department of Health (DH) has organised the annual “Joyful Fruit Day” event since the school year 2006/07 to promote daily fruit eating habit in schools. In the school year 2012/13, the event was upgraded from “Joyful Fruit Day” to “Joyful Fruit Month” and the whole month of April was designated as “Joyful Fruit Month” since then.

“Joyful Fruit Month” aims to create a favourable environment in which students are encouraged to eat an adequate amount of fruit every day through home-school cooperation. All schools are encouraged to systematically organise year-round activities to boost students’ interest in fruit eating. It is hoped that the fruit eating atmosphere within schools will be lifted to an unprecedented level throughout the “Joyful Fruit Month” in April. The slogan-cum-theme for “Joyful Fruit Month 2018” is “Fruit - Nutritious and Cool!”.

The poster for Joyful Fruit Month 2018 features several cartoon characters representing different fruits: a green kiwi, a red apple, a yellow banana, a purple grape, and a yellow pear. They are shown in various settings like a classroom and a playground. Speech bubbles highlight health benefits: 'Fruit - Nutritious & Cool!', '膳食纖維 Dietary Fibre', '維生素 Vitamins', and '礦物質 Minerals'. The poster also includes contact information for the Joyful Fruit Month Secretariat and a list of supporting organizations.

「果」然有「營」 4.2018  
Fruit - Nutritious & Cool!

膳食纖維 Dietary Fibre  
維生素 Vitamins  
礦物質 Minerals

開心果月秘書處  
Joyful Fruit Month Secretariat

熱線電話 Hotline 2772 2012 電郵 Email joyfulfruitmonth@dh.gov.hk  
傳真 Fax 2772 2060 網址 Website http://school.eatsmart.gov.hk/fruit

主辦機構 Organisers: 衛生局 Department of Health, 教育局 Education Bureau, 香港教育城 HkedCity, 家庭與學校合作事宜委員會, 中國(香港)貿易發展局

支持機構 Supporters: 多個政府部門及非牟利機構

健康飲食在校園 EatSmart@school.hk

For more details about the “Joyful Fruit Month” and relevant activities, please visit <http://school.eatsmart.gov.hk/en/template/index.asp?pid=2008&id=3486>.

**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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