



衛生防護中心  
Centre for Health Protection

# Non-Communicable Diseases Watch

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## Health Tips

Eating healthy snacks contributes to children's growth and development, and can prevent them from getting too hungry and over-eating at meals.

The key is to plan carefully and choose snacks wisely, ensuring that the food or drink items chosen are nutritious and would not take away the appetite for the next meal.

## Keep Children Away From Junk Foods

Junk foods refer to those foods and drinks that have poor nutritional value. They generally offer no or little dietary fibre, vitamins and other micronutrients, but are typically high in calories, fat, sugar and salt. To enhance flavour and make them more appealing, junk foods also contain various food additives, artificial colourings and preservatives. Moreover, junk foods are low satiety foods and can easily lead to overeating. They would displace more healthful foods and beverages from the daily diet.

Common junk foods include chips, prawn crackers, candies, chocolate bars, cookies, ice cream, soft drinks, etc., which are the snacks that most children like to eat. In order to lure children and promote sales, most junk foods are heavily promoted through television advertising, catchy jingles, pop singers/stars or child-friendly cartoon figures, and can conveniently be bought in supermarkets, convenience stores, school tuck shops or from vending machines.

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## Impact of Junk Foods on Children's Health

Eating too much junk food can put growing children at greater risk of various health problems, including childhood obesity, diabetes, heart diseases, high blood pressure, tooth decay and vitamin deficiencies. Epidemiological studies have also implicated a junk diet in increasing risk of developing behavioural problems and lower intelligence in children. A British population-based cohort study recorded the eating habits of about 4 000 children when they were 3, 4, 7 and 8.5 years old. Using the Strengths and Difficulties Questionnaire (SDQ) and the Wechsler Intelligence Scale for Children (WISC-III), children were assessed for any behavioural problems when they were 7 years old and for their intelligence quotient (IQ) profile when they were 8.5 years old. Results revealed that children in the top quintile of 'junk food' intake at age 4.5 years, compared to those in the lowest quintile, had a 19% increased risk of being in the top 33% of the SDQ hyperactivity sub-scale at age 7.<sup>1</sup> The study also showed that children eating a predominantly 'processed' diet (with most foods high in fat and sugar) at age 3 would have a slightly lower intelligence quotient (IQ) at age 8.5 than their peers who had a 'health conscious' diet (rich in fruit, vegetables, salad, fish, rice and pasta).

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For every one standard deviation increase in the 'processed' dietary pattern score, there was a 1.67-point fall in IQ at age 8.5. In contrast, every one standard deviation increase in the 'health conscious' dietary pattern score was linked to a 1.20-point increase in IQ at age 8.5.<sup>2</sup> This study implicated that good diet in early childhood is not only important for physical fitness, but may also be crucial for optimal growth of the brain in the early years.

### Consumption Pattern of Junk Snacks among Children in Hong Kong

Like elsewhere, eating junk foods is popular among local children. Many children started consuming junk foods at an early age. The Child Health Survey 2005/2006 of the Department of Health (DH) used a structured questionnaire and face-to-face interviewed parents of over 4 100 children aged 2-10 and more than 2 600 children aged 11-14 on children's

eating habits (including consumption of unhealthy snacks like chips, candies and biscuits, etc.). The survey observed that 85.5% children aged 2-14 consumed junk snacks at least once a week, and 14.4% consumed at least once a day. Males (14.8%) and children aged 6-10 (16.7%) were more likely than their respective counterparts to have eaten junk snacks at least once a day (Table 1 and Table 2).<sup>3</sup>

**Table 1: Frequency of eating junk snacks in a week among children aged 2-14 by sex**

Number of times	Sex		Total
	Male	Female	
At least once a day	14.8%	14.1%	14.4%
4-6 times a week	16.8%	17.1%	17.0%
1-3 times a week	54.4%	53.7%	54.1%
None	13.4%	14.6%	14.0%
Unknown / Missing	0.6%	0.4%	0.5%
<b>Total</b>	100.0%	100.0%	100.0%

Base: Children aged 2-14.

Source: Child Health Survey 2005/2006.

**Table 2: Frequency of eating junk snacks in a week among children aged 2-14 by age group**

Number of times	Age group			Total
	Aged 2-5	Aged 6-10	Aged 11-14	
At least once a day	12.6%	16.7%	13.2%	14.4%
4-6 times a week	14.6%	17.7%	17.6%	17.0%
1-3 times a week	51.0%	53.1%	56.9%	54.1%
None	20.9%	12.2%	11.9%	14.0%
Unknown / Missing	0.8%	0.4%	0.4%	0.5%
<b>Total</b>	100.0%	100.0%	100.0%	100.0%

Base: Children aged 2-14.

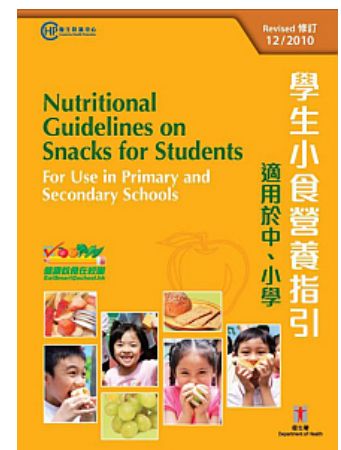
Source: Child Health Survey 2005/2006.

## Healthy Snacking in Children

Healthy snacking is an important part of a balanced diet. Snacks help to refuel a person in between the three main meals of a day. This is particularly important for children because they generally have a small stomach and high activity level. Only the three main meals of the day may not supply adequate energy to maintain their activity throughout the day. Eating healthy snacks contributes to children's growth and development, and can prevent them from getting too hungry and overeating at meals. The key is to plan carefully and choose snacks wisely, ensuring that the food or drink items chosen are nutritious (and not just tasty) and would not take away the appetite for the next meal.

The home and school environments play a very important role in shaping children's eating preferences and food choices. In general, children choose to eat the foods that are served most often or readily available at home and at schools. To promote healthy snacks and to assist school personnel, tuck shop or vending machine operators, students as well as parents in making healthier snack choices, DH issued the *Nutritional Guidelines on Snacks for Students* (revised on 12/2010). According to the nutritional value of food and drink items, the Guidelines classify snacks into three main categories - **Snacks of Choice**, **Snacks to Choose in Moderation**, and **Snacks to**

**Choose Less.** Traffic light colours (green, yellow and red) are used to denote each category of food to make them more readily recognizable (Box 1). To know more about healthy eating at schools or download a copy of the Guidelines, please visit the thematic website of the "EatSmart@school.hk" campaign of DH at <http://school.eatsmart.gov.hk>.



In 2010, the World Health Organization (WHO) published a document which calls for national and international action to reduce the impact on children of marketing of foods high in saturated fats, trans-fatty acids, free sugars or salt. The document contains a set of recommendations on the marketing of foods and non-alcoholic beverages to children. One of the recommendations specifies that settings where children gather should be free from all forms of marketing of foods high in saturated fats, trans-fatty acids, free sugars or salt. Such settings include, but are not limited to, nurseries, schools, school grounds and pre-school centres, playgrounds, family and child clinics and paediatric services and during any sporting and cultural activities that are held on these premises. To know more about the recommendations or download a copy of the document, please visit the WHO website at

[http://whqlibdoc.who.int/publications/2010/9789241500210\\_eng.pdf](http://whqlibdoc.who.int/publications/2010/9789241500210_eng.pdf).



**Box 1: Main Categories of Snacks<sup>4</sup>*****Snacks of Choice*** (also known as ‘Green Light Snacks’)

Refer to those food and drink items that can provide important nutrients and contain less fat, salt and sugar, including

- ◆ Bread, biscuits and grains with less fat, salt or sugar content;
- ◆ fruit and vegetables without added oil, salt or sugar;
- ◆ low-fat or skimmed dairy products without added sugar;
- ◆ lean meat and its alternatives;
- ◆ low-fat and low-sugar drinks.

Operators of school tuck shops and vending machines should primarily supply these food and drink items. Students are encouraged to choose snacks from this category.

***Snacks to Choose in Moderation*** (also known as ‘Yellow Light Snacks’)

Refer to those food and drink items that can provide important nutrients, but contain more fat, salt and sugar, including

- ◆ Bread, biscuits and grains with higher fat, salt or sugar content;
- ◆ fruit with added sugar;
- ◆ processed and preserved vegetables;
- ◆ whole fat or sugar-added dairy products;
- ◆ processed meat, preserved meat, meat with higher fat content and their substitutes;
- ◆ pure fruit juice.

Operators of school tuck shops and vending machines should limit the supply and promotion of these food and drink items. Students are recommended to consume these snacks no more than twice in five school days.

***Snacks to Choose Less*** (also known as ‘Red Light Snacks’)

Refer to those food and drink items that are high in fat, salt and sugar content, including

- ◆ energy-dense, high-fat, high-salt and high-sugar food;
- ◆ drinks high in sugar or salt.

Operators of school tuck shops and vending machines should not supply these food and drink items to the school community. Students should refrain from consuming these snacks.

Working closely with schools, parents and carers should provide children with a healthy eating environment at home and cultivate their good eating habits. Below are some suggestions for parents and carers when offering snacks to their children:

- ⊙ **Offer three regular main meals. Offer snacks only when children feel hungry between two meals;**
- ⊙ **Space out main meals snacks at an interval of 1.5 to 2 hours and provide snacks in amount that should not spoil their appetite for next meals;**
- ⊙ **Avoid intake of ‘red light snacks’ and use ‘green light snacks’ wherever possible.** Examples of ‘green light snacks’ include fresh fruit or dried fruit without added sugar, cherry tomatoes or boiled corn, whole-grain crackers (low in fat, salt and sugar), dry-roasted plain nuts with no added oil or salt, hard-boiled eggs, skimmed or low-fat milk with no added sugar;
- ⊙ **Restrict children’s access to junk foods** by not keeping them at home;
- ⊙ **Act as a role model** by having good eating habits and eating only nutritious food and drinks;
- ⊙ **Involve children in shopping or preparing their own snacks,** and let them be aware of the health consequences of eating junk foods;
- ⊙ **Check and compare the nutritional information and nutritional claims** in food labels of pre-packaged food and drinks before buying;
- ⊙ **Do not use snacks as rewards** so as to avoid children associating foods with pleasure. Instead, reward with kind words or non-food items (like stickers) for good behaviours.

#### References

1. Wiles NJ, Northstone K, Emmett P and Lewis G. ‘Junk food’ diet and childhood behavioural problems: Results from the ALSPAC cohort. *Eur J Clin Nutr* 2009; 63(4): 491-8.
2. Northstone K, Joinson C, Emmett P, et al. Are dietary patterns in childhood associated with IQ at 8 years of age? A population-based cohort study. *J Epidemiol Community Health* doi:10.1136/jech.2010.111955.
3. Child Health Survey 2005/2006. Hong Kong SAR: Department of Health.
4. Nutritional Guidelines on Snacks for Students (revised 12/2010). Hong Kong SAR: Department of Health.





## News Bites

A local study found an association between breakfast skipping with a clustering of health-compromising behaviours among primary school-children.

The study included 68 606 primary 4 participants of DH's Student Health Service (SHS) between 1998 and 2000. Using a standardised health assessment questionnaire, participating school-children's breakfast habits and other lifestyle characteristics were recorded. Height and weight were measured by trained nurses during medical appointments. Results showed that 5.2% of primary 4 schoolchildren usually skipped breakfast. Compared with the breakfast eaters, breakfast skippers were more likely to be classified as overweight and obese, ate more junk foods but less fruit or vegetables and drank less milk. Breakfast skippers also tended to watch more television and engage in less physical activity.

Eating breakfast has favourable effects on school-children's cognition and learning and the prevention of various chronic diseases. Thus, parents and carers should find ways to overcome barriers to habitual breakfast eating. Healthy lifestyle promotion programmes could also include promoting healthy breakfast consumption.

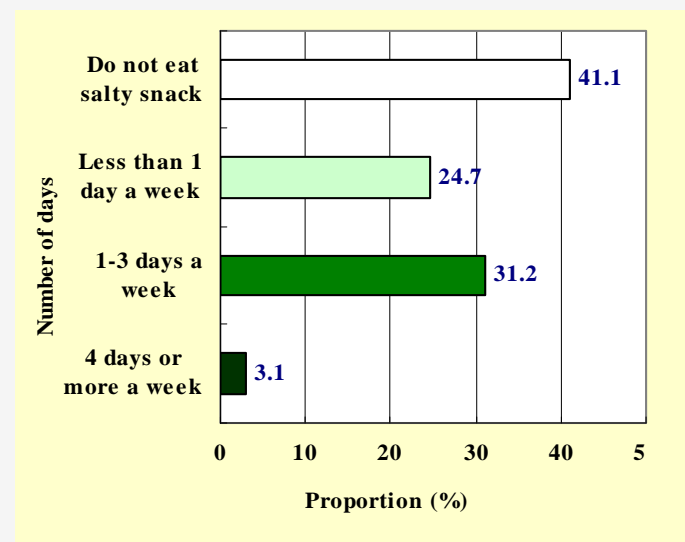
[Source: Tin SP, Ho SY, Mak KH, et al. Lifestyle and socioeconomic correlates of breakfast skipping in Hong Kong primary 4 schoolchildren. *Prev Med* 2011; 52(3-4): 250-3]



## Data Brief

To monitor certain eating habits of local adults, the Behavioural Risk Factor Survey April 2010 of the DH telephone-interviewed over 2 000 community-dwelling people aged 18-64 and asked them how many days on average they ate snacks with high salt content (such as potato chips, prawn crackers, squid floss, dried pork jerky, snack type seaweeds or traditional Chinese preserved fruits, etc.) each week in the 30 days before enumeration. Results showed that 34.3% of the respondents consumed snacks with high salt content at least one day a week, in which 3.1 % of them reported that they consumed 4 days or more a week. Females (3.6%) and people aged 18-24 (6.7%) were more likely than their counterparts to report having consumed snacks with high salt content 4 days or more a week.

**Consumption pattern of snacks with high salt content in the 30 days before enumeration among community-dwelling people aged 18-64**



Source: Behavioural Risk Factor Survey April 2010.

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