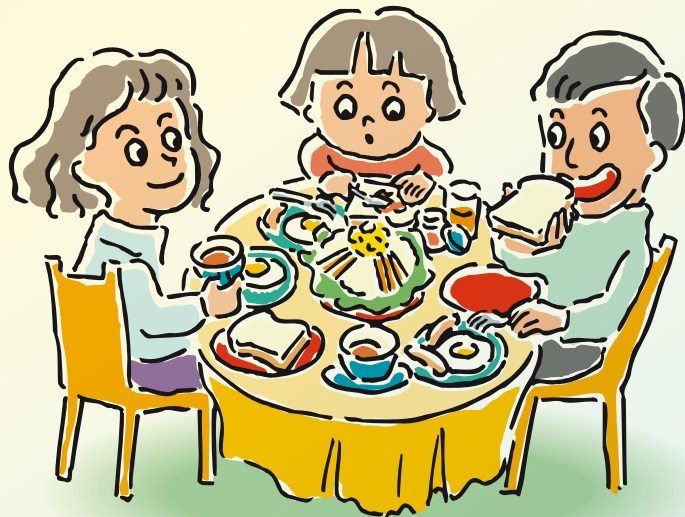


Food is essential for human life. It is the source of energy and nutrients. Energy supports the activities of human body whereas nutrients are vital for growth, repair and maintenance of good health. As no single type of food can provide us all necessary nutrients, maintaining a well-balanced diet through intelligent choices of food is the cornerstone to good physical health.

Nowadays, eating is for fulfilling our basic needs as well as for pleasure. However, eating too much results in excessive weight gain and health problems. In fact, we are the ones to determine how much we will eat and what kinds of foods we will eat. In daily life we should comply with the rules of eating less meat, more vegetables and fruits, minimizing oil, salt and sweets intake, avoiding junk foods, and doing adequate amount of exercises. Healthy eating has become an important concern in recent years. Trans fat is the hottest topic drawing much attention from the public lately. Therefore, our dietitians have written an article on trans fat as our feature article in this issue. Hope you enjoy reading it.

Besides, Student Health Service has launched internet service on 5 October 2007. Students will receive an activation code upon submission of parental consent during their annual visit. They hence can login their own account and surf for health advice there. Our website is www.studenthealth.gov.hk



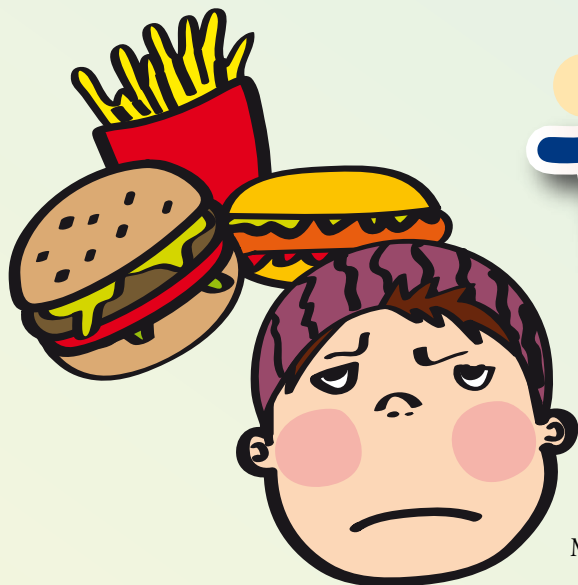
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TRANS FAT

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Fats can be broken down to supply energy providing high calories. Excess fat intake can be stored resulting in an increase in body weight and even obesity. Reducing fat intake helps to solve the problem of obesity and reduce the risk of cardiovascular disease.

"Trans fatty acid" becomes a hot topic recently. What are "Trans fatty acids"? What health impacts do they have? Let's take a look in this issue.

Types of Fats

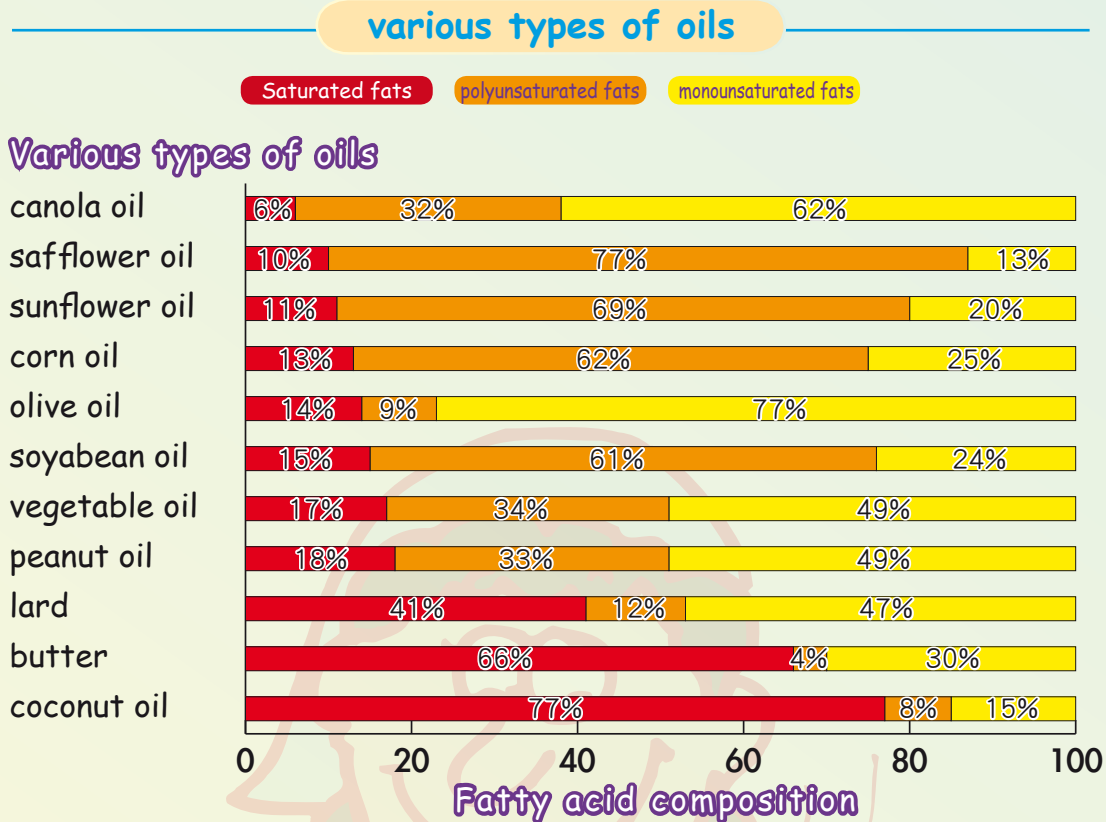
A) Saturated fats

Saturated fats are in solid form at room temperature. They can raise blood cholesterol significantly, directly increasing the risk of cardiovascular diseases. Saturated fats mainly come from animal's fats, including animal skin, fatty meats, lard and butter. Egg yolk, dairy products, coconut oil and palm oil are also rich in saturated fats.

B) Unsaturated fats (monounsaturated fats, polyunsaturated fats, trans fats)

- 1) Monounsaturated fats are in liquid form at room temperature. They can lower "Bad cholesterol" (LDL), but keep "Good cholesterol" (HDL) high and decrease the risk of heart disease. Sources of monounsaturated fats include olive oil, canola oil, avocados and nuts.
- 2) Polyunsaturated fats are in liquid form at room temperature. They can lower both "Bad cholesterol" (LDL) and "Good cholesterol" (HDL). Omega-3 and omega-6 fatty acids are types of polyunsaturated fats. Omega-3 fatty acids are found in tunas, salmons, sardines, cods and also shellfish including scallops, shrimps, crabs as well as clams. Omega-6 fatty acids are found in corn oil, sunflower oil and soybean oil. (figure 1)
- 3) Trans fats are a type of unsaturated fat. They can be monounsaturated or polyunsaturated.

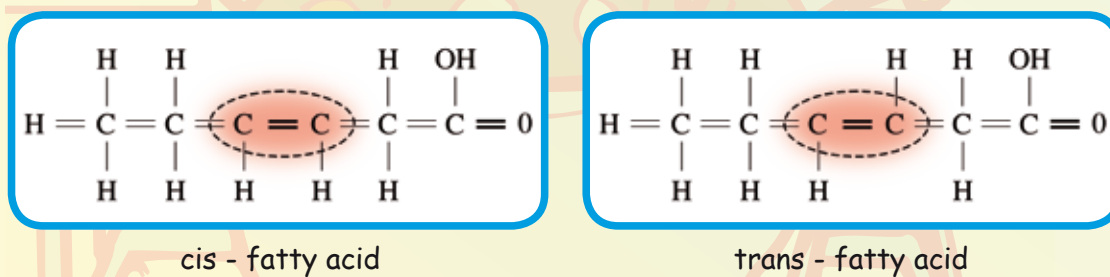
Fig 1. Comparison of the fatty acids between various types of oils



The formation and structure of trans fats

Most of the trans fat are produced in food industry through "partial hydrogenation" of vegetable oils. The result is a more solid and longer lasting form of vegetable oil, called "partially hydrogenated oil". However, the nature of the fat is changed from "cis" to "trans" form. (Technically, if oil is "fully" hydrogenated, it will not contain any trans fats but if it is only "partially" hydrogenated, it will contain trans fats.) (figure 2)

Fig 2 .The structure of trans fat



The sources of trans fat

There are 3 main sources of trans fat:

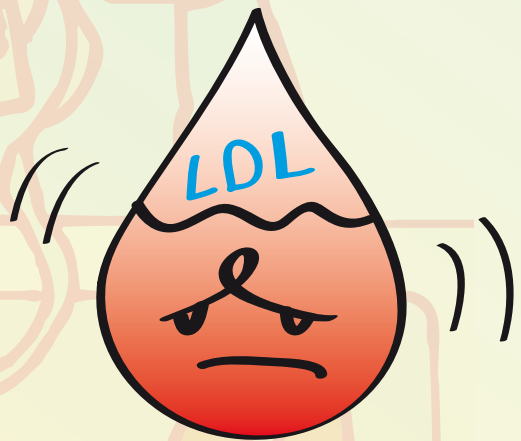
1. Most of the trans fat can be found in processed foods. Because the use of "partially hydrogenated oil" can increase the shelf-life of the processed foods and "partially hydrogenated oil" is cheaper than butter and lard, most of the food manufacturers will choose to use trans fat.
2. In some ruminant animal's stomach e.g. cow, sheep, there is a process called "bio-hydrogenation" which can partially hydrogenate the vegetable oils from the grass into trans fat. Therefore, some animal based foods e.g. butter, beef, milk and milk products also contain certain amounts of trans fat.
3. Trans fat can also be formed when vegetable oils are used for deep-frying at high temperature over a long time.



The effect of trans fat to health

Some studies showed that trans fatty acid would increase blood level of LDL (Bad cholesterol) and decrease blood level of HDL (good cholesterol) which indirectly increase the risk of heart attack.

UK government recommends no more than 2% of total energy intakes come from trans fat daily. American Heart Association suggests that each person should take no more than 2g trans fat from diet daily. World Health Organization (WHO) also recommends that the intake of trans fat should be less than 1% of total daily energy intake.



Answer: a
One piece of steamed beef ball contains 8.4g of fat (~110 calories), 1 piece of steamed siu mai contains 3.5g of fat (~48 calories), 1 piece of steamed dumpling contains 3.2g of fat (~44 calories), 1 piece of sharks fin dumpling contains 3g of fat (~39 calories). When we choose dim sum, we should choose dim sum with low fat and low calorie.

Which foods contain trans fat?

Foods that contain relatively large amount of trans fat include:

- margarine, especially stick margarine (semi-liquid margarine contains less trans fat compared with stick margarine).
- high fat baked foods e.g. cookies, cakes, pies etc.
- processed foods that contain "partially hydrogenated vegetable oils", "shortening" e.g. chocolates, French fries etc. (figure 3)

Fig 3. The amount of trans fat in foods

Data from: Consumer Council

Food (per 100g edible parts)	Trans fat (g)	Saturated fat (g)
1. Snow brand Neo Soft Spread	4.2	12
2. Anchor Pure New Zealand Butter	3.5	50
3. First Choice Light Reduced Fat, Reduced Salt Spread	3.2	11
4. McDonald's French Fries (Large) Samples collected in May 2007	2.4	4.8
5. Wing Wah Egg Roll	1	11
6. Garden Continental Bread (French Croissants)	0.98	16
7. Lurpak Lighter Spreadable	0.84	21
8. KFC Egg Tart	0.82	13



Methods of reducing trans fats intake

1. Have a balanced diet with fresh foods and low fat dairy products.
2. Reduce the use of butter and stick margarine. When buying margarine, choose the ones that state they are "trans fat free" or "low in trans fat".
3. Read the food labels of processed foods to see whether the food ingredients contain "partially hydrogenated vegetable oils/fats", "shortening" or not.

References:

1. <http://www.ha.org.hk/dic>
2. <http://www.mingpaohealth.com>
3. Choice 364 2007 February
4. Choice 372 2007 October

How to avoid excessive intake of fat?



"How to avoid excessive intake of fat?" is the topic of "My view, your view" for the month of July to September in our Student Health Service Centre. Many students know the importance of well balance diet, they express their views as follows:

peel off skin before eating meat, avoid to eat deep fried food

use steaming or boiling as methods of cooking

take less fried chips, soft drinks and ice-cream

don't eat too much in every meal

use lean meat to replace fatty meat

take less greasy or strongly flavored food

use a minimum amount of oil to cook

take less fatty food, such as pork, oil fish etc.

reduce / avoid taking trans fat food

check the nutrition information before choosing food

reduce eating luncheon meat, instant noodles and sausages

take less snacks

Are their views same as yours ?

Maintaining a healthy body weight helps lowering the risks of developing chronic diseases associated with obesity and promoting fitness. However, it is believed that the main reason for adolescents to control their weight is not health concern. Most adolescents care about their appearances and figures indeed. Slimming and keeping fit is trendy recently, adolescents may strive for a 'slim' body. In order to lose weight in a short period, they may try some inappropriate methods that may be harmful to their health. In fact, there is no shortcut for weight loss. To reduce body fat, it is essential to maintain a well balanced diet and appropriate exercise. The following correspondence illustrates that how adolescents neglect healthy diet for weight reduction.

Hello!

It is the first time that I am writing to you. I am now studying Form 2. I was found gaining weight for unknown reason since last year. I am so unhappy. Despite of eating not much, I still gain weight. I started my keep fit plan eventually. I have diet control and exercise. My plan is having my breakfast after performing exercise in the morning. Then, I skip the other two meals. Is it wrong? Somebody told me that I was slimmer after a period of time. I am happy with that. But I don't think I am really fit. I still got a tummy. I almost lost the patience to continue. During the night, I perform sit-up. Can this exercise help to reduce tummy? Please tell me will I get fat again if I resume taking three meals every day? I am a plump girl. Are there any other methods to solve this problem? Is it true that the body figures can be changed by exercising hard and controlling diet? As I have asked so many questions, please tell me the answers. Thanks!



Emily

Dear Emily,

Thank you for your letter.

I know you are upset by your weight gain recently as you have mentioned. It is difficult to prove your weight for height is over the normal range as you did not provide the information about your body height and weight.

To maintain healthy body weight, we should restrict or reduce the calories intake and increase the calories expenditure by diet modification and increasing exercise amount. Diet modification is eating appropriate amount and varieties according to the principle of Food Pyramid. Besides, we should keep balanced nutrients intake. So you need to resume regular three meals (breakfast, lunch and dinner) every day, to provide daily nutrients as well as to provide energy for maintaining daily activities.

To reduce calories intake, you may eat according to Healthy Food Pyramid. Please don't eat snacks with high content of sugar and fat for example soft drink, ice-cream, cake, chocolate, French fries, deep-fried potatoes chips, fried chicken, etc. as well as avoid eating out.

I am glad that you have exercise every day. Basically, any kind of exercise 'burns' calories. Generally performing aerobic exercise for more than 20 minutes e.g. jogging, cycling, swimming, playing badminton, dancing, etc. facilitates burning of body fat.

Sit-up is one type of muscle training exercises. It aims at strengthening the muscle and increasing endurance but does not help burning fat directly. Performing this type of exercise may not reduce body weight but help to improve body shape and promote health. Therefore, you should continue.

Well-balanced diet and appropriate exercise reduce body fat effectively. It is important to maintain a healthy weight, but do not strive for a 'too slim' body figure. On the contrary, it is vital to develop a proper self-image and value.

Health Box

Health Tips

Obesity may increase the risk of chronic diseases like hypertension, heart disease, stroke, diabetes etc. So keep appropriate body weight.



Interesting Knowledge Q&A

Which of the following dim sum contains the highest fat?

- a. 1 piece of steamed beef ball
- b. 1 piece of sharks fin dumpling
- c. 1 piece of steamed dumpling
- d. 1 piece of steamed siu mai

(The answer can be found in the magazine)



Please write your
Name & address:
Contact Tel. No:
in the letter

For enquiries of student's health problem,
please write to 'Health Box'

Health Box
4/F., Lam Tin
Polyclinic, 99 Kai Tin
Road, Kwun Tong,
Kowloon.