

Avoid excessive fat intake

The amount of total fat and types of fatty acids in the body have important health effects.

By Dr TEE E SIONG

I HAVE heard people say that we should not eat too much fatty foods. However, much to my dismay, I do not see this knowledge being put into practice.

I do believe that we need to further reinforce the message to the public to be more careful of their fat intake. We need to emphasise that excessive fat intake causes excessive weight gain and obesity. The public needs to take action to prevent getting obese, so as to reduce the risk of heart disease, diabetes, and cancer.

Today, I will highlight recommendations of the Malaysian Dietary Guidelines (MDG) 2010 in relation to reducing excessive fat intake.

Watch out for total fat

A small amount of fat in the diet is essential for health. It contributes to the energy needs of the person; it provides the essential fatty acids (EFA) that cannot be made by the body; and fat promotes the absorption of fat-soluble vitamins (A, D, E, and K). Fat also improves the taste and flavour of food, thereby enhancing their palatability.

However, excess fat consumption can result in too much calorie intake. Remember that 1 gram of fat is "burned" to give 9 kcal whereas it is only 4 kcal for carbohydrates. Foods with higher content of fats and oils are therefore more energy dense foods. Excessive intake of energy-dense foods increases the likelihood of overweight and obesity.

Fat and oils are therefore placed at the tip of the food pyramid of the Malaysian Dietary Guidelines. They are to be consumed the least, relative to the other food groups at the lower levels of the pyramid. Only small amounts are generally needed.

It is important to pay particular attention to the amount of total fat and oil in our daily diet. There are two aspects to this.

Firstly, choose foods that are lower in fat, eg lean meat. Limit intake of fried foods such as fried fish, chicken, and meat to no more than once or twice a week. When eating out, order dishes with less oil.

The second aspect to this is to use less oil when preparing meals. For example, instead of frying, use alternative methods such as steaming; use less santan (which is actually fat from coconut) in cooking; when eating out, request the chef or hawker to use less oil in your meals.

Types of fatty acids are important

The fat molecule, known as triglyceride, is made up of two components: the glycerol backbone, and fatty acids attached to this.

There are different types of fatty acids, and this determines the properties of the fat molecule, eg whether the fat is a solid or a liquid and their effects on human health.

Fatty acids are composed of varying numbers of carbon and hydrogen atoms. The fatty acid could therefore be a short chain, comprising 10 carbon atoms, or a long chain type, made up of 22 carbon atoms.

When all the bonds joining the carbon atoms in a fatty acid molecule are single (saturated) bonds, the fatty acid is known as a saturated fatty acid (SFA). On the other hand, when one or more double (unsaturated) bonds occur in the fatty acid chain, it is known as an unsaturated fatty acid.

A fatty acid with one double bond is known as a monounsaturated fatty acid (MUFA); a fatty acid with more than one double bond is known as polyunsaturated fatty acid (PUFA). The latter include the omega-3 and omega-6 fatty acids.

Examples of fats that are high in SFA content are animal fats such as tallow (beef or mutton fat) and lard (pork fat), and they are solids. Coconut oil is also very high in saturated fatty acids. Olive and soya bean oils are examples of MUFAs and PUFAs and are



Polyunsaturated fatty acids cannot be made in the body and must therefore be obtained from the diet. They are found in seed oils, fish, nuts and vegetables, as well as smaller amounts in meat, eggs, and dairy products.

oily. Palm oil is a mixture of these three main types of fatty acids.

The MDG 2010 has recommended to limit intake of saturated fat and to increase intake of MUFA and PUFA.

Specific mention must be made of two fatty acids that are known as "essential fatty acids", namely linoleic acid (an omega-6 fatty acid), and alpha-linolenic acid (an omega-3 fatty acid). These are PUFAs and cannot be made in the body and must therefore be obtained from the diet. They are found in seed oils, fish, nuts and vegetables, as well as smaller amounts in meat, eggs, and dairy products.

Avoid trans fatty acids

Hydrogenation is a chemical process whereby hydrogen is added to the double bonds found in polyunsaturated oils. It is actually an artificial way to "saturate" an unsaturated oil so that the oil formed is harder.

Such resulting oils can be used in solid applications, especially in the fat spread industry, eg in margarine manufacture.

During this process, unsaturated fatty acids with their natural cis-configuration may be converted into the trans-configuration at one or more carbon-carbon double bonds. Trans fatty acids (TFAs) or trans fats are thereby formed.

Palm oil, with its semi-solid properties, does not need to be hydrogenated prior to use in food applications. It does not contain trans fats.

TFAs have been shown to have harmful effects on human health, especially in increasing risk of coronary heart disease. The MDG 2010 has given clear recommendations to limit the intake of foods containing trans fatty acids.

Proper understanding of cholesterol

Cholesterol is a waxy-like fatty substance. You may have heard bad things about cholesterol. It is actually required in the human body, for example for cell membranes, and for the manufacture of bile acids, steroid hormones and vitamin D.

However, high levels of cholesterol in the blood are to be avoided as this can increase the risk of heart disease.

The MDG 2010 has therefore recommended to limit intake of foods high in cholesterol.

Remember that cholesterol is found only in foods of animal origin, such as egg yolk, brain, organ foods, butter, meat, and seafood.

It should be pointed out that cholesterol from the diet plays only a minor role in increasing blood cholesterol level. Unless a person has high blood cholesterol, there is no need to be overly concerned about cholesterol from the diet.

Especially for children, there is no need to stop giving your children milk and eggs because they contain cholesterol. These are nutritious foods and should be made available to children.

It is important to remember that most of the cholesterol in the body is manufactured in our own liver. We must therefore pay close attention to reducing the making of cholesterol by practising healthy eating in general, particularly reducing intake of SFA (particularly from animal sources) and increasing intake of PUFA and dietary fibre.

MDG key message 8

MDG 2010 has provided six key recommendations for this key message. Within each of the following key recommendations, the MDG has provided several tips on how to achieve these recommendations.

1. Limit the intake of saturated fats to less than 10% of total daily calorie intake.

- Limit the use of oils and fats such as coconut oil, coconut milk (santan), palm kernel oil and animal fat (ghee or butter).
- Trim the fat from meat or poultry before cooking.
- Remove skin of poultry before cooking.
- Use low fat or skimmed dairy products

2. Increase the intake of unsaturated fats (MUFA and PUFA).

- Palm oil is a good source of MUFA, while corn oil, soya bean and sunflower oils are good sources of PUFA. Using these vegetable oils in cooking will improve the intake of MUFA and PUFA. For example, mix one part of palm olein with one part of soya bean oil as a cooking oil blend.

- Increase consumption of foods such as nuts (groundnuts, cashew nuts, almonds and pistachios) and seeds (sesame and sunflower seeds) and legumes (chickpeas and soya bean).

- Increase consumption of fresh fish such as *siakap*, *cencaru*, *selar kuning*, *bawal hitam*, *senangin*, *tongkol*, *kembung*, *tenggiri* or sar-

dines. Canned sources of fish such as tuna and sardines can also be consumed.

3. Limit intake of foods high in cholesterol.

- Limit organ meats (especially brain, heart, kidney and liver) and fish roe to less than twice a month.

- Remove the head of ikan bilis and prawns before cooking.

- Consume eggs in moderate amount, up to an average (whole or in dishes) of one egg a day. For individuals with hypercholesterolaemia, limit eggs to three per week.

4. Limit foods containing trans fatty acids (TFAs).

- Limit intake of margarines and shortenings made from hydrogenated or "hardened" fats.

- Limit intake of foods prepared with partially hydrogenated or "hardened" fats such as french fries, doughnuts and bakery products.

- Look for words such as "partially hydrogenated" fats or oils or "hardened" fats or oils on the food label of processed foods as these contain TFAs.

5. Minimise the use of fat in food preparation in order to keep total daily fat intake between 20% and 30% of total energy.

- Limit deep frying, shallow frying and batter frying when cooking.

- Modify recipes which use excessive oils and fats such as *sambal tumis*, *goreng berlada* and *nasi minyak*.

6. When eating out, choose low fat foods.

- Choose dishes using minimal oil, fat or santan in the preparation.
- Choose high fat foods less frequently.
- Include vegetables and fruits in your meal choices.

- Eat at places which provide a wider variety of healthy meal options.

- Request for less fat and oil when ordering food.

Let the MDG 2010 guide you and your family members in adopting healthy eating habits and an active lifestyle. The complete MDG is obtainable from the Ministry of Health website: www.moh.gov.my/v/diet.

The Nutrition Society of Malaysia has also made available leaflets of these MDG suitable for the public (www.nutriweb.org.my).

■ Dr Tee E Siong pens his thoughts as a nutritionist with over 30 years of experience in the research and public health arena.