

## Fats and oils

Fat is important for many body processes. You need to eat some fat in your diet. Fat protects your organs, keeps you warm and helps your body absorb and move nutrients around. It also helps hormone production. However, some fats are better than others and having too much of any type is not a good idea.

Dietary fats are classified by their structure. Different types of fats react differently inside the body. Saturated fats (found mostly in animal products) increase blood cholesterol, which is a risk factor in coronary heart disease. Mono-unsaturated and polyunsaturated fats tend to lower blood cholesterol.

### Dietary fats and blood cholesterol

There are two types of blood cholesterol: low density lipoprotein (LDL) cholesterol and high density lipoprotein (HDL) cholesterol. LDL is considered the 'bad' cholesterol because it contributes to the narrowing and silting up of the arteries, which can lead to heart disease and stroke. HDL cholesterol is considered to be the 'good' cholesterol because it actually carries cholesterol from the blood back to the liver, reducing the risk of cardiovascular disease.

### Groups of fats

Each group of fats behaves differently inside the body. Dietary fat can be classified into four groups:

- Saturated
- Mono-unsaturated
- Polyunsaturated
- Trans fats.

### Saturated, mono-unsaturated and polyunsaturated fats

Saturated fats contribute to the risk of heart disease by raising blood cholesterol levels. These fats are commonly found in many takeaway ('fast') foods, in commercial products such as biscuits and pastries, and in dairy products.

Mono-unsaturated and polyunsaturated fats both tend to lower blood cholesterol when they replace saturated fats in the diet. Polyunsaturated fatty acids have a slightly greater impact than mono-unsaturated fatty acids.

Replace saturated fats in your diet with either mono-unsaturated or polyunsaturated fats whenever possible. For example, replace butter in some cooked dishes with olive or canola oil.

### Trans fatty acids

Trans fatty acids are rare in nature. They are only created in the rumen of cows and sheep, and are naturally found in small amounts in milk, cheese, beef and lamb. Trans fatty acids are also created during the manufacture of some table margarines and in solid spreads used in the food industry to make baked products such as pies, pastries, cakes, biscuits and buns.

Trans fatty acids are considered to behave like saturated fats in the body; they raise LDL levels and increase the risk of heart disease. Unlike saturated fats, they tend to lower HDL cholesterol, so are potentially even more damaging. It is the trans fats that are produced during food manufacturing that you should be most concerned about, not the trans fats present naturally in certain foods. Look for margarines that have less than one per cent trans fats on the label or choose foods with the Heart Foundation Tick. Limit how much takeaway food and packaged snack foods you eat.

### Common fat-containing foods

Different foods contain different ratios of fatty acids:

- **Saturated fats** – sources include fatty cuts of meat, full fat milk, cheese, butter, cream, most commercially baked products such as biscuits and pastries, most deep-fried fast foods, coconut and palm oil.
- **Mono-unsaturated fats** – sources include margarine spreads such as canola or olive oil based choices, oils such as olive, canola and peanut oils, avocado, and nuts such as peanuts, hazelnuts, cashews and almonds.
- **Polyunsaturated fats** – sources include fish, seafood, polyunsaturated margarines, vegetable oils such as safflower, sunflower, corn or soy oils, nuts such as walnuts and brazil nuts, and seeds.

### Sources of omega-6 and omega-3 fats

Polyunsaturated fats can be divided into two categories:

- **Omega-3 fats** are found in both plant and marine foods, although it is the omega-3 fats from marine sources that have the strongest evidence for health benefits (including reducing the risk of heart disease). Plant food sources include canola and soy oils and canola-based margarines. Marine sources include fish, especially oily fish such as Atlantic salmon, mackerel, Southern blue fin tuna, trevally and sardines.
- **Omega-6 fats** are found primarily in nuts, seeds and plant oils such as corn, soy and safflower.

### Benefits of omega-3 fats

Research is ongoing, but the benefits of omega-3 fats in the diet seem to include that they:

- Lower triglyceride levels, which are important risk factors in coronary heart disease
- Improve blood vessel elasticity
- Keep the heart rhythm beating normally
- Thin the blood, which makes it less sticky and less likely to clot
- Reduce inflammation and support the immune system
- Reduce blood pressure
- May play a role in preventing and treating depression
- Contribute to the normal development of the foetal brain.

### Plant sterols

Plant sterols are present in all plants. Intakes of 2–3 grams of plant sterols per day have been shown to reduce blood cholesterol levels by an average of 10 per cent. This is because they block the body's ability to absorb cholesterol, which leads to a reduced level of cholesterol in the blood.

It is hard to eat 2–3 grams of plant sterols from natural sources so there are now plant sterol enriched margarines and dairy products on the market. Eating 1 to 1½ tablespoons of sterol enriched margarine each day can help to lower blood cholesterol levels.

### Energy density

Dietary fat has more than double the amount of kilojoules per gram (37kJ/g) than carbohydrate or protein (17kJ/g), making it very 'energy dense'. Foods high in fat are usually high in kilojoules. Some research suggests that saturated fats are more likely to contribute to weight gain (especially around the middle) than polyunsaturated fat and mono-unsaturated fats, even though they have the same kilojoule content.

Carrying too much body fat is a risk factor in many diseases, including coronary heart disease, type 2 diabetes and many cancers.

### Cholesterol in food

People with high blood cholesterol or who are at risk of heart disease should also try to limit their intake of cholesterol-rich foods. However, while cholesterol in food can raise blood cholesterol levels, the effect is small compared to the effects of saturated fat.

Dietary cholesterol is only found in animal products such as:

- Full fat dairy products
- Fatty meats
- Egg yolks
- Shellfish
- Offal – for example liver, kidney and brains.

## The Mediterranean diet

Researchers are investigating the possibility that a diet rich in mono-unsaturated fats, such as olive oil, may be protective against the development of coronary heart disease. People who have a high consumption of mono-unsaturated fats from olive oil (for example, in Greece and Italy) tend to have low rates of coronary heart disease, regardless of their body weight.

We must remember, though, that the Mediterranean diet contains much more than olive oil. It's possible that the low rate of coronary heart disease in these countries relates to a high intake of vegetables, legumes, fruits and cereals, which are rich in antioxidants. The evidence so far is inconclusive.

## Current recommendations

Nutritionists recommend that we limit the amount of fats in the daily diet, particularly saturated and trans fats. Simple suggestions include:

- Use margarine spreads instead of butter or dairy blends.
- Use salad dressings and mayonnaise made from oils such as canola, sunflower, soy and olive oils.
- Use low or reduced fat milk and yoghurt or 'added calcium' soy drinks.
- Try to limit cheese and icecream to twice a week.
- Have fish (any type of fresh or canned) at least twice a week.
- Select lean meat (meat trimmed of fat and chicken without skin). Try to limit fatty meats including sausages and delicatessen meats such as salami.
- Snack on plain, unsalted nuts and fresh fruit.
- Incorporate dried peas (for example split peas), beans (for example haricot beans, kidney beans, three bean mix) or lentils into two meals a week.
- Make vegetables and grain-based foods such as breakfast cereals, bread, pasta, noodles and rice the major part of each meal.
- Try to limit takeaway to once a week or less.
- Try to limit snack foods such as potato crisps and corn crisps to once a week or less.
- Try to limit cakes, pastries and chocolate or creamy biscuits to once a week or less.
- Try to limit cholesterol-rich foods such as egg yolks and offal like liver, kidney and brains.

## Where to get help

- Your doctor
- An accredited practising dietitian, contact the Dietitians Association of Australia
- Nutrition Australia

## Things to remember

- Dietary fat contains more than double the amount of kilojoules per gram than carbohydrate or protein.
- Animal products and some processed foods, especially fried fast food, are generally high in saturated fats, which have been linked to increased blood cholesterol levels.
- Replacing saturated fats with mono-unsaturated and polyunsaturated fats tends to improve blood cholesterol levels.

**This page has been produced in consultation with, and approved by:**

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