Eating well to improve your blood fats

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This handout provides information on fats found in foods and some suggestions for improving blood cholesterol levels.

Fat is a major source of energy but eating a diet high in fats may contribute to excess weight and lifestyle diseases, including diabetes, heart disease and stroke. Food can contain several different types of fat, some more harmful than others. The amount and types of fat that you eat can influence the level of cholesterol circulating in your blood, affecting your risk of cardiovascular disease (heart disease and stroke).

Fats found in food

Saturated and unsaturated fats

The major form of fat eaten is made up of fatty acids, of which there are several different types.

- **Saturated fatty acids (or 'saturated fats').** These are 'bad' fats as they can raise the level of the 'bad' low density lipoprotein (LDL) cholesterol that increases the risk of developing heart disease.
- **Polyunsaturated fatty acids (or 'polyunsaturated fats').** These are 'good' fats as they lower total cholesterol and LDL cholesterol levels. There are two main types, omega-3 fatty acids and omega-6 fatty acids. Both improve the blood fat profile and reduce the risk of cardiovascular disease.
- **Monounsaturated fatty acids (or 'monounsaturated fats').** These are 'good' fats as, like polyunsaturated fats, they lower total cholesterol and LDL cholesterol levels.
- **Trans fatty acids (or 'trans fats').** These are 'bad' fats as they increase the 'bad' (LDL) cholesterol level and lower the 'good' (high density lipoprotein, or HDL) cholesterol level. Trans fats are found in most foods containing saturated fats and are also found in some margarines.

The total fat and saturated fat contents of manufactured foods are listed in the nutrition information panels on food packaging. Often the amounts of the other types of fat are also listed. Table 1 lists some foods that are major sources of the various fats in the Australian diet. There are, of course, many other foods that are rich sources of these fats.

Saturated fat has more effect on blood cholesterol levels than monounsaturated or polyunsaturated fats. It is present in many foods of animal and plant origin and also in manufactured foods that contain hydrogenated vegetable oil (often listed on the food label as vegetable fat or shortening), such as commercial biscuits and cakes.

Cholesterol

Cholesterol is a type of fat found in foods of animal origin. Major sources of dietary cholesterol are egg yolks, offal, fatty meats, full fat dairy products and some shellfish. Dietary cholesterol can increase LDL cholesterol levels, but much less so than saturated and trans fats. Moderate amounts of cholesterol-rich foods can be included in your diet if

The National Heart Foundation recommends the eating of at least two serves of fish a week to help reduce the risk of heart disease.

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Table 1. Food sources of different fats

Saturated fats

Fats
Butter, lard, copha, cooking margarine, ghee, dripping, dairy blends, vegetable shortening
Cream, sour cream

Meat and dairy products
Fatty meat (chops, poultry skin, chicken wings, fatty mince)
Smallgoods (sausages, saveloys, fritz/devon, salami, bacon, metwurst)
Full fat dairy products (milk, cheese, cream cheese, yoghurt, ice cream)
Paté

Plant sources
Coconut oil, cream and milk
Palm oil (used in many fast foods, takeaway foods, cakes and biscuits)
Toasted breakfast cereal, e.g. muesli

Takeaway foods
Commercial cakes, pastries, biscuits and chocolates
Deep fried or battered foods
Pies, pasties, sausage rolls
Pastries – shortcrust and puff pastry
Potato crisps, hot chips

Monounsaturated fats

Oils and margarines
Canola
Olive
Macadamia
Sunola (a sunflower oil high in oleic acid)
Peanut
Sunflower

Vegetables
Avocados
Olives

Nuts
Almonds
Peanuts
Cashews
Hazelnuts
Macadamias
Pecans

Spreads
Peanut butter
Almond spread

Polyunsaturated fats

Oils and margarines
Sunflower
Safflower
Corn
Soybean
Sesame
Cottonseed
Grapeseed

Nuts and seeds
Walnuts
Pine nuts
Brazil nuts
Sesame seeds
Sunflower seeds
Linseeds

Spreads
Tahini

Fish and other seafood
Sardines, mackerel
Salmon, tuna, mullet
Calamari
Gem fish
Blue eye cod

your blood cholesterol levels are well controlled. The cholesterol content of a food does not have to be listed on the food label unless a claim regarding cholesterol is being made. All plant foods contain virtually no cholesterol so claims such as 'no cholesterol', 'low cholesterol' and 'cholesterol free' on the packaging of plant-derived foods such as margarines and oils are meaningless.

Types of blood fats

The levels of the various fats in your blood are measured by blood tests. The results are listed as total cholesterol, HDL cholesterol, LDL cholesterol and triglycerides. Target levels for these blood fats for people who are at high risk of cardiovascular disease (such as those with diabetes) are given in Table 2.

The cholesterol family

Cholesterol is a fatty substance made by the liver and some other tissues and circulated around the body in the blood. Some cholesterol is obtained from certain foods – this is known as dietary cholesterol.

Cholesterol has many important functions but too much of it can cause fatty deposits

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to build up in the blood vessels. These deposits make it harder for blood to flow through the vessels and can cause blockages that may lead to heart disease or stroke.

Factors that contribute to high cholesterol levels in the blood are being male, having a family history of high cholesterol, being overweight, having a high dietary intake of saturated fat, and being physically inactive. The first two of these factors are fixed (or non-modifiable), while the other three can be changed (are modifiable).

Cholesterol blood tests

- **Total cholesterol.** The total cholesterol includes HDL and LDL cholesterol.
- **HDL cholesterol.** HDL cholesterol (or high density lipoprotein cholesterol) is 'good' cholesterol and can remove 'bad' cholesterol from the lining of the arteries. The higher your level of HDL cholesterol, the better it is for your heart.
- **LDL cholesterol.** LDL cholesterol (or low density lipoprotein cholesterol) is 'bad' cholesterol and can be deposited in the inner lining of the arteries and eventually lead to a heart attack or stroke. The higher your level of LDL cholesterol, the worse it is for your heart.

Triglycerides

High levels of triglycerides in the blood are bad as they can lower HDL ('good') cholesterol and therefore increase your risk of heart disease.

Your body turns any extra energy (calories/kilojoules) from the food you eat into triglycerides and these are transported by the blood to fat cells for storage. A high level of triglycerides in your blood may be caused by eating more food than you need for your energy requirements or by a disorder such as diabetes, renal failure or alcohol dependence. When high triglycerides are not caused by another disorder, they are often seen together with high cholesterol.

What can you do to improve your blood fats?

You can improve your blood fats by following the suggestions in Table 3.

Table 4 lists good food choices that are low in fat, and foods that are high in fat and should be avoided.

Frequently asked questions

Should I use food products that contain 'plant sterols', such as Logicol and Proactive margarines?

Plant sterols occur naturally in plants. There is evidence that they are effective in reducing 'bad' (LDL) cholesterol. Small quantities are obtained naturally by eating fruit and vegetables, and larger amounts by eating plant sterol enriched margarines such as Logicol and Proactive. Recently, plant sterol enriched milks and yoghurts have become available.

As part of a healthy balanced diet, plant sterol enriched products may be beneficial in lowering cholesterol levels by an average of 10%. Manufacturers of the enriched margarines encourage an intake of 2 to 3 g of plant sterols a day (equivalent to about one to one and a half tablespoons of the margarine a day) to achieve maximum benefit in lowering LDL cholesterol. Be careful of unwanted weight gain that may result from using extra margarine. Discussion with a dietitian may be useful.

Table 2. Blood fat targets

The National Heart Foundation targets for blood fats in people at high risk of cardiovascular disease (such as those with diabetes) are:

- total cholesterol < 4 mmol/L
- LDL cholesterol < 2.5 mmol/L
- HDL cholesterol >1 mmol/L
- triglycerides <1.5 mmol/L.

Table 3. Suggestions for improving your blood fats

- Maintain a healthy weight
- Limit intake of takeaway foods and fatty snack foods, e.g. chocolate, crisps, cakes, pastries and high fat biscuits – choose healthy alternatives
- Eat lean meats, trimmed of visible fat, and remove skin from poultry
- Drink low fat milk and eat low fat yoghurts and cheeses
- Eat only small amounts of polyunsaturated or monounsaturated oils and margarines
- Increase intake of dietary fibre by eating more fruit, vegetables, pulses, wholemeal or wholegrain bread and cereals
- Eat fish two or three times a week, preferably deep-sea fish, which is rich in omega-3 fats – e.g. tuna, salmon, sardines, mackerel and herring
- Limit alcohol intake to fewer than four standard drinks for men and two for women a day, with two alcohol-free days a week
- Exercise regularly – aim for at least 30 minutes daily
- Quit smoking

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Should I be adding psyllium to my food?

Psyllium is a seed husk high in soluble fibre. There is a link between dietary fibre and protection against heart disease. Cholesterol can be lowered by increasing soluble fibre intake from foods such as rolled oats, oat bran, barley bran, legumes, lentils, fruits, vegetables, grains, rice and pasta.

When it is included as part of a healthy balanced diet, psyllium may be beneficial in lowering cholesterol levels. Manufacturers mainly add psyllium to breads and cereals. It can also be bought in powder form and added at home to breakfast cereals, drinks and casseroles. Aim for a fibre intake of about 30 g a day.

Should I be having soy milk and soy products?

Soy products are plant derived and hence free of cholesterol. The protein found in soy products is thought to assist in lowering 'bad' (LDL) cholesterol. Soy products can be part of a healthy diet as long as they are low fat and calcium enriched. About 25 g of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease (this is equivalent to three cups of soy milk per day).

Should I be avoiding eggs if my cholesterol is high?

A moderate intake of eggs (about three a week) is suitable if your cholesterol is high. Although eggs contain reasonable amounts of dietary cholesterol and saturated fat, they also contain several valuable nutrients, such as protein, zinc and vitamins. Use low fat cooking methods, such as boiling or poaching.

Should I avoid margarine and oil completely?

It isn't necessary to avoid eating margarine and oil completely. Read margarine food labels and choose polyunsaturated or monounsaturated varieties with less than 1 g trans fat per 100 g of the margarine (less than 1%). Spread margarine thinly on bread. Use small amounts of oil in cooking (e.g. one teaspoon per person). Try low fat cooking methods such as grilling or roasting on a rack, poaching and boiling.

Table 4. Fat checklist

No or low fat foods

- Low fat mayonnaise, low calorie/kilojoule salad dressings, vinegar, lemon juice, low calorie/kilojoule gravy mixes, plain yoghurt, fish sauce, soy sauce, homemade stock
- Reduced fat cheese, ricotta cheese, cottage cheese, low fat cream cheese
- Lean cuts of meat, e.g. ham, beef, chicken and turkey breast – trim any fat and remove chicken skin
- Foods cooked without fat or with a minimal amount of monounsaturated or polyunsaturated vegetable oil, e.g. grilled fish or meat, rotisserie chicken (no skin), dry fried meats
- Fruit, vegetables (raw, steamed, roasted with oil spray), plain popcorn, low fat cracker biscuits, oven baked chips
- Oil or margarine – limit to one tablespoon per day, preferably polyunsaturated or monounsaturated varieties
- Nuts – limit to one-third of a cup a day or in cooking occasionally.

High fat foods – avoid these

- Ordinary mayonnaise, oily salad dressings
- Full fat milk, cream, yoghurt
- Full fat cheese, cream cheese
- Fat on meat, duck and chicken skin
- Fatty meats, e.g. sausages, bacon, fritz/devon, salami
- Deep fried or battered foods, e.g. fried dim sims, spring rolls, pies, pasties
- Crisps, hot chips, prawn crackers
- Large amounts of margarine, butter, oil, cream, peanut butter, dripping, lard, ghee, coconut cream, nuts and seeds

Fatty meats such as salami should be avoided