

# FAT FACTS

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## Types of Blood Fats

### The Cholesterol Family

Cholesterol is a fatty substance made by our liver and found in our blood. Cholesterol is also present in some foods (this is known as dietary cholesterol). Cholesterol has many important functions but too much cholesterol can cause fatty deposits to build up in the blood vessels. This makes it harder for blood to flow through and can cause blockages leading to heart disease or stroke.

Factors that can contribute to high cholesterol and heart disease:

Fixed

Male

Family history

Age

Changeable

Overweight

High saturated or trans fat intake

Inactivity

High alcohol intake

Smoking



### Total cholesterol

This includes the good and the bad types of cholesterol (see below).

### HDL Cholesterol\*

This is "good" cholesterol and can remove "bad" cholesterol from the lining of the arteries. The higher the level of "good" cholesterol, the better for your heart.

### LDL cholesterol\*

This is "bad" cholesterol and can deposit in the inner lining of the arteries and eventually lead to a heart attack or stroke.

### Triglycerides

This is another "bad" fat. High levels of triglycerides can lower "good" cholesterol (HDL) and increase the risk of heart disease.

## What to aim for?

<b>Blood fat targets for people with diabetes:</b>	
Total cholesterol	less than 4
LDL cholesterol	less than 2.5
HDL cholesterol	more than 1
Triglyceride	less than 1.5

(Recommended by The National Heart Foundation)

## Cholesterol in Food

Dietary cholesterol is found only in animal foods. Highest levels are found in eggs, offal, fatty meats, and some shellfish. Dietary cholesterol can increase LDL cholesterol levels, but to a lesser degree than saturated and trans fat. Moderate amounts of cholesterol-rich foods can be included if blood cholesterol levels are well controlled.

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\* HDL and LDL refer to the High Density and Low Density proteins (Lipoproteins that carry cholesterol in the blood).

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## Fats found in food

Blood cholesterol level can be affected by the *type* and *amount* of fat we eat. There are several different types of fat found in food (Table 1):

**Saturated fat** is "bad" fat as it can raise LDL cholesterol levels. Eating foods high in saturated fat can increase the risk of developing heart disease.

**Polyunsaturated fat** is "good" fat. There are two main types of polyunsaturated fat:

- **omega 6 fats:** can lower the bad LDL cholesterol and reduce the risk of heart disease.
- **omega 3 fats:** not only lower LDL cholesterol but can also lower triglycerides and have many other benefits for the heart. Omega 3 fatty acids are found in several plant oils and in even greater quantities in fish. The omega 3's from fish have been shown to be the most protective. In large doses, omega 3 fats from fish oil supplements have also been shown to have an anti-inflammatory effect, thereby reducing the symptoms of rheumatoid arthritis. Most Australians consume inadequate amounts of omega 3's.



**Monounsaturated fat** is "good" fat which lowers LDL cholesterol and triglyceride levels and increases HDL cholesterol in the bloodstream.

**Trans fat** is "bad" fat which increases LDL cholesterol levels and lowers HDL cholesterol. Trans fat is found in most foods containing saturated fat and is also produced in the manufacture of some margarines. Look for margarines with less than 1g of trans fat per 100g (less than 1%).

**Table 1: Types of fat found in various foods.**

Saturated and/or Trans	Monounsaturated	Polyunsaturated
<p><b>Fats</b> butter, lard, copha, ghee, cooking margarine, hydrogenated margarines (check the label for less than 1% trans fat), dripping, dairy blends, vegetable shortening, cream, sour cream</p> <p><b>Meat / meat products</b> fatty meat (chops, poultry skin, chicken wings, fatty mince, fatty pork), smallgoods (sausages, saveloys, fritz, salami, bacon, mettwurst), paté</p> <p><b>Dairy</b> full fat dairy products (full cream milk, cheese, cream cheese, yoghurt, ice cream)</p> <p><b>Plant sources</b> coconut oil / cream / milk palm oil (in fast foods, cakes / biscuits/ pastries)</p> <p><b>Take away foods</b> commercial cakes / biscuits / donuts/ chocolates crisps, hot chips, deep fried or battered foods, pies, pasties, sausage rolls, pastries</p>	<p><b>Oils / margarines</b> canola* olive macadamia sunola* peanut</p> <p><b>Vegetables</b> avocado olives</p> <p><b>Nuts &amp; seeds</b> almonds peanuts, peanut paste cashews hazel nuts macadamia pecans</p>	<p><b>Oils / margarines</b> sunflower, safflower corn soybean*, sesame cottonseed grapeseed flaxseed oil/linseed oil*</p> <p><b>Nuts &amp; seeds</b> walnuts* pine nuts brazil nuts sesame seeds, tahini sunflower seeds linseeds*</p> <p><b>Fish / seafood</b> <i>Canned:</i> sardines*, salmon* and mackerel* <i>Fresh:</i> Atlantic salmon*, tuna*, mullet*, swordfish*, gem fish*, trevally*, snook* flathead, calamari*</p>

\* Good sources of omega 3 fats

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## What can you do to improve your blood fats?

- Maintain a healthy weight.
- Limit takeaways and fatty snack foods such as crisps, chocolate, cakes, pastries and high fat biscuits. Choose healthy alternatives such as fruit, low fat crackers and fruit loaf.
- Use lean meats, trimmed of visible fat. Remove skin from poultry.
- Use low fat milk, yoghurt and cheese.
- Use small amounts of poly or mono-unsaturated oils and margarines.
- Increase dietary fibre from legumes, fruit, vegetables, wholemeal or wholegrain bread and cereals.
- Eat fish 2-3 times a week preferably deep-sea fish such as sardines, mackerel, herring, tuna and salmon.
- Limit alcohol intake. Aim for no more than four standard drinks for men and two for women, with at least two alcohol-free days a week.
- Exercise regularly. Aim for at least 30 minutes a day for five or more days of the week.
- Quit smoking.



## How much fat should we eat?

Although too much fat in the diet is unhealthy, we still need to eat a certain amount of fat (approximately 25 – 30% of our total calorie/kilojoule intake should come from fat).

	Activity Level	Kilojoule (Calorie) Intake	Fat Intake Per Day (grams)
<b>Women</b>	Moderately active	8400 (2000)	55 – 65
	Sedentary	6300 (1500)	40 – 50
	Aiming for weight loss	5000 (1200)	30 – 40
<b>Men</b>	Moderately active	10,500 (2500)	70 – 85
	Sedentary	8400 (2000)	55 – 65
	Aiming for weight loss	6300 (1500)	40 – 50

*(Nutrition for Life – Catherine Saxelby 2006)*

## Fat content of various foods

High fat choice	Fat (g)	Lower fat choice	Fat (g)
Milk, full cream, 1 cup	9	Milk, reduced fat (1.4%), 1 cup	3.5
Cheese, full fat, 30g	10	Cottage cheese, reduced fat, 30g	1
Yoghurt, full fat, 200g tub	7	Yoghurt, diet, 200g tub	0
Chicken leg, with skin, 100g	15	Chicken breast, no skin, 100g	3.5
Lamb chop, untrimmed, 100g	17	Lamb chop, trimmed, 100g	6.5
Beef mince, regular, 100g	25	Beef mince, premium, 100g	10
Pork chop, untrimmed, 100g	16	Pork fillet, trimmed, 100g	6.5
Salami, 3 slices, 90g	30	Lean ham, 90g	3
Butter or margarine, 1 tbsp	16	Margarine, extra light, 1 tbsp	6
Potato crisps, 50g	15	Low fat crackers (Salada) x 4	1.6
Chocolate, 1 row, 25g	7.5	Dried fruit, 30g	0
Fish and Chips, 1 serve, average	38	Dim Sims, steamed, 3	9
Pizza, pan, meat supreme, 2 slices	24	Pizza, thin crust, vegetarian, 2 slices	9

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### Commonly asked questions

**Q: Should I use food products that contain 'plant sterols'?**

A: Plant sterols occur naturally in plants. There is evidence that they are effective in reducing 'bad' LDL cholesterol. In addition to the small quantities of these substances naturally available in fruit and vegetables, they are now available in larger amounts in some margarines, milk and yoghurt. As part of a healthy balanced diet these products may be beneficial in lowering cholesterol levels by an average of 10%. Manufacturers of plant-sterol enriched margarines encourage 3 to 4 serves each day (equivalent to approximately 1 – 1 ½ tablespoons) to achieve maximum benefit in lowering LDL cholesterol. Be careful of unwanted weight gain that may result from using extra margarine. Discuss with a dietitian.

**Q: Should I be adding Psyllium to my food?**

A: 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 a variety of foods like oats, oat bran, barley bran, legumes, lentils, fruits, vegetables, grains, rice and pasta. As part of a healthy well 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. Drink extra fluid if adding psyllium to your diet.

**Q: Should I be having soy milk and soy products?**

A: Soy products are plant derived and hence are cholesterol free. The protein found in soy products is thought to assist in lowering LDL cholesterol and prevent arteries clogging. Soy products can be part of a healthy diet as long as they are low in fat and calcium enriched. Twenty five grams of soy protein a day, as part of a diet low in saturated fat, may reduce the risk of heart disease (you can get this in 2 to 3 cups of soy milk per day).

**Q: Should I be avoiding eggs if my cholesterol is high?**



A: No. Although eggs contain a moderate amount of dietary cholesterol, they also contain a number of valuable nutrients (such as protein, zinc and vitamins). Cholesterol in foods is less of a concern to heart health than saturated or trans fats. A moderate intake of eggs is suitable if your cholesterol is high. Use low fat cooking methods such as boiling or poaching.

**Q: Should I be taking fish oil capsules?**

A: Omega 3 fats and heart health are at the moment the focus of intense research around the world. The Heart Foundation currently recommends consuming fish at least two to three times a week, particularly oily fish. There is currently promising evidence that fish oil can improve heart health. Fish oil supplements have also been shown to reduce the symptoms of rheumatoid arthritis (RA). If taking fish oil supplements for these purposes consult your doctor for recommended doses per day. If you choose to take fish oil supplements, make sure you use standard fish oil rather than cod liver oil. Although cod liver oil is a good source of omega 3 fats, it also contains vitamin A which, in large doses can be harmful. Intakes of vitamin A that exceed recommended daily allowances have been associated with lower bone density (a potential risk for bone fracture).

Useful web sites for more information on fish oils are: [www.omega-3centre.com](http://www.omega-3centre.com)  
[www.heartfoundation.com.au](http://www.heartfoundation.com.au)