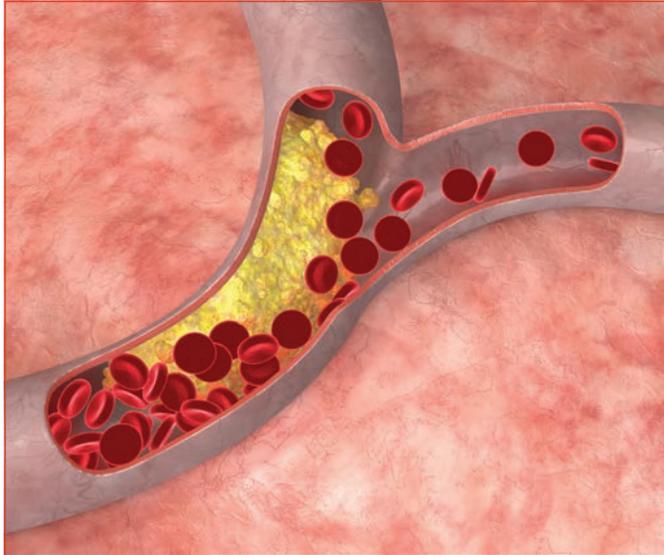


# High blood cholesterol



High cholesterol levels can increase your risk of heart disease. Combined with other risk factors – such as age (being a man aged over 45 years or a woman over 55), smoking, high blood pressure, diabetes or a family history of heart disease – high cholesterol levels can mean you run a greater risk of having a heart attack or stroke.

It is important to know your cholesterol levels and to keep them at a healthy level. Your cholesterol level should be checked by your doctor or nurse as part of your ‘Cardiovascular Risk Assessment’ (your heart health check).

## What is cholesterol?

Cholesterol is a white, waxy substance which, despite its bad reputation, is essential for life. Our bodies use cholesterol to manufacture a number of important hormones, and it also forms the outer membrane of some cells. The liver makes about 70% to 80% of it, while the rest comes from the food we eat.

### What causes problems?

The liver makes all the cholesterol we need. If we get too much circulating in our blood, it tends to get stuck in the blood vessel walls, narrowing the vessels and making their walls harder, and increasing the risk of heart disease.

A diet high in saturated fat is the usual cause of a high blood cholesterol level; however, some people have a high level because of an inherited susceptibility.

## What is ‘good’ and ‘bad’ cholesterol?

Cholesterol, like fat, cannot move around the bloodstream on its own, so it attaches to carriers called lipoproteins, of which there are several types; the main ones are low density lipoprotein (LDL) and high density lipoprotein (HDL).

### Triglycerides

The most common form of fat in our body. They are an energy store for the body. High triglycerides are associated with many diseases, including heart disease and stroke.

### LDL – the ‘bad’ cholesterol

LDLs carry cholesterol around the body depositing it in the artery walls. It is important to have low levels of LDL.

### HDL – the ‘good’ cholesterol

HDLs carry cholesterol back to the liver where it is broken down. It is good to have high levels of HDL in your blood, or a high proportion (ratio) of HDL within your total cholesterol.

### HDL/total cholesterol ratio

This ratio is used to calculate your risk of heart attack or stroke.

## What fats should I limit?

The more saturated fats you eat, the more LDLs are made. Saturated fats mainly come from animal fats. If you eat saturated fats and at the same time you do not have many HDLs, you end up with too much cholesterol in your blood.

## How do I keep my ‘bad’ cholesterol levels low?

- Aim for a healthy body weight. The more you weigh, the more your body stores fat and cholesterol.
- Be active: it raises HDL levels, helps you lose weight and lowers other risk factors for heart disease (eg, blood pressure). Aim for a total of at least 30 minutes of moderate physical activity on most days.
- Change your diet. Healthy eating is essential to lower your blood cholesterol levels and improve your heart health.
- Cut down on saturated fats.
- Stop smoking.
- Avoid excessive drinking of alcohol.

## Heart healthy eating

### To cut down on saturated fats:

- Choose lean meats (fat removed), poultry without skin, fish, and low fat milk, yoghurt and cheese.
- Use polyunsaturated or monounsaturated margarine or oil sparingly for thin spreading and cooking.
- Avoid foods prepared with butter, hydrogenated oil, coconut or palm oil.
- Eat generous amounts of fruit and non-starchy vegetables (aim for at least eight servings each day, more veges than fruit). They contain high levels of vitamins and substances that may protect against a high blood cholesterol level.
- Eat some wholegrain breads, cereals and starchy vegetables (potato, kumara, yams, corn, taro, green banana). They contain types of fibre that can help lower blood cholesterol levels.
- Include legumes (dried peas, beans, lentils) in meals.
- Prepare meals with as little added fat as possible. Grill, boil, steam, bake or microwave rather than fry.
- If eating preprepared foods, snacks and meals choose those low in fat (especially saturated fat) and salt. Avoid cakes and biscuits.
- Limit salt and alcohol intake.
- Eat fish at least twice weekly. Choose fish and shellfish with a high oil content such as tuna, kahawai, trevally, salmon, dory and sardines.
- Eat plain nuts and seeds regularly. (A portion size of nuts would be a small handful per day).
- Have plant sterol-fortified margarine spreads.

### For advice and inspiration on a healthy diet try:

The Healthy Heart meal planner app on the Heart Foundation website [www.heartfoundation.org.nz](http://www.heartfoundation.org.nz)

The Foodswitch app to help you choose the healthiest option of packaged food [www.foodswitch.co.nz](http://www.foodswitch.co.nz)

The Healthy Food Guide [www.healthyfood.co.nz](http://www.healthyfood.co.nz)

If changing your diet and increasing your activity do not improve your high cholesterol levels, your doctor may advise you to take a cholesterol-lowering drug, depending on your other heart risk factors.

Statins are the group of drugs most often used to control blood cholesterol levels. Also, if you have other cardiovascular risk factors (eg, high blood pressure, diabetes), a statin may be suggested as an additional way to lower stroke and heart attack risk.

**Saturated fats** increase LDL cholesterol and should be eaten sparingly. They are found mainly in animal foods like butter, red meat (processed meat, eg, some sausage, luncheon meat, mince, salami may be 50% fat), chicken skin, whole milk, cream, cheese, dripping and lard. Two vegetable oils, coconut and palm oil, are high in saturated fat and are often used in commercially baked biscuits and cakes.

**Polyunsaturated fats** should be eaten in moderation. They occur in sunflower, safflower and corn oil, and in soybeans and nuts. Polyunsaturated fats decrease LDL cholesterol. Omega-3 oils are a type of polyunsaturated fat found in oily fish, canola-based oils and margarine, flaxseed and walnut oils. These may help reduce blood clotting, blood pressure and cholesterol levels.

**Monounsaturated fats** should be eaten in moderation. They are widely found in both animal and plant foods. Olive and canola oils are rich sources, as are avocados and peanuts. They decrease LDL cholesterol.

**Fat is hidden in processed food – read the label!**

### Measuring blood cholesterol

Your cholesterol level can be measured from a blood sample, which can be arranged by your doctor. A total cholesterol level of less than 4 mmol/L is ideal, as is an LDL cholesterol level less than 2.0 mmol/L, an HDL cholesterol greater than 1 mmol/L, triglycerides less than 1.7 mmol/L and a total cholesterol/HDL ratio less than 4. These results are not interpreted on their own – any other heart risk factors will be assessed by your doctor as well.

### Further information

The Heart Foundation has information and tips on heart health and healthy eating, including recipes. Visit the Heart Foundation website [www.heartfoundation.org.nz](http://www.heartfoundation.org.nz) or email [info@heartfoundation.org.nz](mailto:info@heartfoundation.org.nz)

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