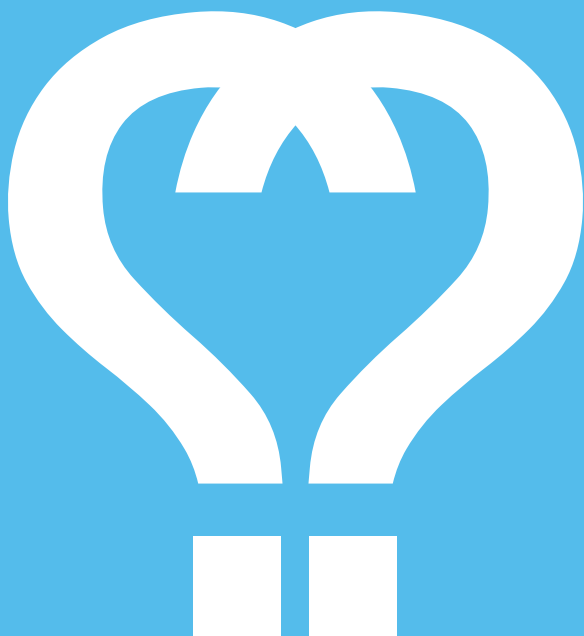


# Heart to Heart



A simple guide to lower  
cholesterol through diet  
and lifestyle.



**national cholesterol**  
education program new zealand

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*Saving lives through better nutrition*



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## The heart of the matter

Nothing is more important than your heart. This ball of muscle beats approximately 100,000 times every day, pumping blood through your body. Every muscle and every organ in the body depends on the regular supply of life-giving oxygen that is carried in the blood through a maze of blood vessels – the arteries and veins.

Our arteries can gradually become blocked with cholesterol (a process called atherosclerosis). If the arteries become blocked completely, a heart attack or stroke can occur, and the heart may stop altogether.

Today many **risk factors** for heart disease are well known. Some of them can't be changed, such as your age, gender and ethnicity. However, some risk factors, such as smoking, high blood pressure and high blood cholesterol are linked to diet and lifestyle, which we can influence greatly.

### Risk factors you can change:

- High blood cholesterol
- High blood triglycerides
- High blood pressure
- High blood sugar
- Unhealthy weight
- Smoking
- Physical inactivity
- Stress

## The importance of cholesterol

Heart disease is responsible for 40% of New Zealand deaths every year,<sup>1</sup> a number that could be lowered if the rates of high cholesterol were reduced. Rates of heart disease among Maori and Pacific Islanders are even higher.<sup>2</sup> The average blood cholesterol of New Zealanders is 5.7mmol/L with 23% having cholesterol levels higher than 6.5mmol/L.<sup>2</sup>

The good news is that cholesterol can be lowered by diet and lifestyle changes.

The **National Cholesterol Education Program of New Zealand** aims to help New Zealanders lower their cholesterol levels through easy, effective and sustainable diet, physical activity and lifestyle changes. The information in this brochure is designed to help you take the first step towards a lower cholesterol level and a healthier heart.

Heart disease continues to be the leading cause of death in New Zealand<sup>1</sup> with the average cholesterol of New Zealanders above ideal levels.<sup>2</sup>

## Lowering cholesterol in New Zealand

**Cholesterol is a fatty substance found in our blood. It's essential and has many good uses – it's needed to make hormones and vitamin D in the body. But we only need a small amount. Too much cholesterol in the blood can increase the risk of heart disease.**

The average level of total blood cholesterol in New Zealand adults is 5.7mmol/L,<sup>2</sup> while the recommended level for individuals is less than 4.0mmol/L.<sup>1</sup>

### The Good and the Bad.

Cholesterol in the blood comes in two main forms – which are often called 'good' and 'bad' cholesterol.

- 'Good' HDL cholesterol clears the blood of cholesterol helping to reduce the risk of heart disease.
- 'Bad' LDL cholesterol can build up in the arteries, increasing the risk of heart disease.

People with high cholesterol usually have high levels of 'bad' LDL cholesterol in their blood.

### Why is our cholesterol high?

A major contributor to high cholesterol in New Zealand is a poor diet. Saturated fats are known to raise blood cholesterol levels and many foods, such as fatty meats, full fat dairy products, coconut cream, biscuits, cakes, pastries, fried takeaways and some snack foods are high in saturated fats. However, there are many tasty foods that have no effect on blood cholesterol and some that actually lower blood cholesterol.

### Simple changes in diet can lower your cholesterol.

Simple cholesterol checks estimate your 'total' cholesterol whereas more complete tests provide additional information about total, LDL and HDL cholesterol. Your doctor can organise these tests, check for other risk factors and give you detailed advice. A Registered Dietitian can provide you with tailored dietary advice to improve and manage your cholesterol and SPARC, [www.sparc.org.nz](http://www.sparc.org.nz), can help you find activities that suit you.



## How to lower your cholesterol

**For a healthier heart, and a lower cholesterol level, make these three important changes to your diet.**

### 1. More 'healthy' fats – less 'unhealthy' fats.

Some fats push cholesterol up – these are saturated and trans fats, the 'unhealthy' fats. Other fats either have no effect or are cholesterol-lowering and are the 'healthy' fats, poly- and monounsaturated. Replacing some unhealthy fats in your diet with healthy fats will lower your cholesterol<sup>3</sup> and, as a bonus, provide more of the essential nutrients found in fats.

#### Healthy fats: polyunsaturated and monounsaturated.

Poly and monounsaturated fats are found in abundance in many vegetable oils, such as sunflower, olive, soy bean, canola, safflower, olive and avocado oils, margarine spreads, some salad dressings, nuts, seeds and avocados. Including moderate amounts of these foods in your daily diet is recommended.<sup>3</sup>

#### Unhealthy fats: saturated and trans.

Saturated fats significantly increase total cholesterol and limiting them is crucial to lowering blood cholesterol.<sup>3</sup> Saturated fats are found in a wide variety of foods, especially fatty foods of animal origin, such as butter, cream, blue top milk, cheese and other full-fat dairy products, coconut cream, fatty meats and meat products. Many commercial cakes, biscuits and pastries are also high in saturated fats, as are many deep-fried takeaways and snack foods. Limiting saturated fat intake will also help lower your overall fat intake.

Trans fats also increase blood cholesterol but fortunately are only present in small amounts in the New Zealand diet.<sup>4</sup> Dietary cholesterol (cholesterol from food) can also increase blood cholesterol but the effect is small.<sup>3</sup> Saturated fats are the important 'bad' fats to focus on.

Reading nutrition information panels on packaged foods will help you to identify foods high in saturated fat. Looking out for foods with the Heart Foundation Tick is an easy way of identifying foods that contain less bad fat. Comparing the saturated fat in a Tick approved product versus the product you usually buy will give you an indication of whether it is suitable for you.

#### Choose healthy fats

- Use sunflower, canola, soybean, olive, avocado or safflower oil in cooking, and in salad dressings
- Use margarine spread on bread and in cooking
- Have oily fish once or twice a week
- Choose unsalted nuts as a healthy snack

#### Limit unhealthy fats

- Limit butter, cream, cheese, other full-fat dairy products and coconut cream. Choose low or reduced fat milk, yoghurt or 'added calcium' soy alternatives
- Trim fat from meats; limit fatty processed meats such as salami, sausages and canned corned beef
- Limit biscuits, cakes and pastries
- Limit deep-fried takeaways, potato chips and other fatty snack foods



Changing fats in the diet – less saturated fats and more unsaturated fats – will lower LDL cholesterol by an average of about 10%.<sup>5,6</sup>

## 2. Include plant sterol-enriched foods every day.

Including plant sterol-enriched foods in your diet is a highly effective way of lowering cholesterol.<sup>7</sup>

### How do they work?

Plant sterols occur naturally in small amounts in common plant foods, such as vegetable oils, nuts, seeds and vegetables. When eaten in high enough amounts, plant sterols partially block the absorption of cholesterol from the gut into the body, which in turn leads to a fall in blood cholesterol levels.

Many studies have now shown that consuming 2g of plant sterols a day can lower 'bad' LDL cholesterol by 5-15%<sup>7</sup> when consumed as part of a healthy diet. Plant sterol-enriched margarines have been studied more than any other plant sterol food and the typical fall in LDL cholesterol is about 10%,<sup>7</sup> about the same as the effect of replacing unhealthy fats with healthy fats. And the effects add together. If you replace unhealthy fats with healthy fats and include plant

sterol-enriched foods every day, LDL cholesterol can fall by 20%.<sup>8,9</sup>

Including plant sterols daily in your diet will lower LDL cholesterol by 10% on average.<sup>7,9</sup>

### How can I incorporate plant sterols in my daily diet?<sup>i</sup>

Plant sterol-enriched foods need to be eaten daily and in sufficient amounts to have maximum effect.

A plant sterol-enriched margarine may be used as a spread on bread and also in cooking and baking.<sup>ii</sup> About 25g of spread (one rounded tablespoon) contains 2g of plant sterols that provides close to the maximum cholesterol-lowering effect.

If you prefer yoghurt or other foods enriched with plant sterols, take note of the manufacturer's advice. Two serves each day may be required to achieve the recommended intake of 2g of plant sterols each day.

<sup>i</sup> People with the rare genetic condition sitosterolaemia should limit plant sterols in their diet. When consuming plant sterol enriched products, consume them as part of a healthy diet. Plant sterol enriched products may not be suitable for children under the age of five years and pregnant or lactating women. Plant sterols do not provide additional benefits when consumed in excess of 3g per day. <sup>ii</sup> Reduced fat or 'light' plant sterol spreads are not recommended for cooking or baking, use regular plant sterol spreads instead.

## 3. Soluble fibre and soy protein.

Soluble fibre can also help to lower cholesterol (by 2-3%)<sup>10</sup> and is found in foods such as oats and legumes (lentils, soya beans, red kidney beans, chick peas). Foods rich in soy protein such as tofu, soya beans and soy-based drinks also have a small cholesterol-lowering effect (3%).<sup>11</sup> These foods are generally low in saturated fat and it is recommended they be included regularly in your diet. Other cereal fibres and wholegrains will not affect your blood cholesterol level but instead have other benefits such as digestive health.

## Diet checklist for heart health

	Choose healthy fats and oils
	Choose low and reduced-fat milk and yoghurt
	Choose lean meats and chicken without skin
	Include plant sterol-enriched foods every day
	Eat oily fish once or twice a week
	Aim for at least 5 serves of fruit and vegetables every day <sup>iii</sup>
	Include wholegrain breads or cereals each day
	Moderate portion sizes
	Limit sugary and alcoholic drinks
	Use salt sparingly and limit high salt foods

<sup>iii</sup> Visit [www.5aday.co.nz](http://www.5aday.co.nz) for more information about serves of fruit and vegetables.

## Healthy meal suggestions for everyone

	Breakfast	Lunch	Dinner	Snack
Mon	High fibre cereal with low fat milk topped with canned fruit in juice	Wholemeal wrap with low fat cottage cheese, grated carrots and nuts eg walnuts	Grilled lean beef, boiled noodles and broccoli, salad	Fresh seasonal fruit, rice crackers
Tues	Porridge with sliced apple	Garden salad with lean ham, wholemeal bread roll	Lean lamb chops with kumara and steamed fresh or frozen carrots and beans	Banana or apple, low fat yoghurt, wholemeal cracker with reduced fat cheese
Wed	Wholegrain toast with margarine spread and jam	Spinach and ricotta cannelloni pasta dish	Grilled terakihi (or other fish) with mashed potatoes and steamed fresh or frozen green beans and corn	Orange, grapes, handful unsalted nuts eg almonds
Thurs	Fresh or canned fruit salad in juice with low fat yoghurt, muesli	Tuna sandwich with salad	Chicken stir fry with fresh or frozen veggies and rice topped with a sprinkle of sesame seeds	Watermelon, apple, wholemeal bread roll with peanut butter
Fri	Wholemeal toast with margarine spread, banana and honey	Chick pea (or three bean mix) salad with paprika and cucumber	Grilled salmon, roast potatoes and asparagus (or seasonal Asian greens)	Canned or fresh pineapple, banana, low fat yoghurt
Sat	Wheat biscuits with low fat yoghurt and diced seasonal fruit	Wholemeal bread sandwich with tomato, mozzarella and rocket (or other salad leaves)	Vegetable lasagne	Canned pears or peaches, rice crackers
Sun	Wholegrain toast with margarine spread and reduced fat cheese, glass of low fat milk	Vegetable salad with potatoes and bread	Spaghetti Bolognese, salad	Fresh seasonal fruit, handful unsalted nuts and seeds eg almonds, sunflower seeds, pumpkin seeds

## Lose a little weight

If you are overweight, even losing a few kilos will help to lower your blood cholesterol and other blood fats.<sup>12</sup> In fact, the ‘bad’ LDL-cholesterol goes down and the good HDL-cholesterol goes up<sup>13</sup> – a double benefit. Blood pressure may also drop a little, so trimming off a little excess weight is a heart-healthy step for many reasons. Major improvements are often seen with quite small falls in body weight of between 5 and 10% (or 5-10 kilos if you weigh 100kg).<sup>12</sup>

Some people tend to carry excess weight around their bottom and thighs while others put on fat around the waist, which is more of a problem – it has worse effects on cholesterol, other blood fats, blood pressure and blood glucose (sugar) levels. Your waist circumference is a good guide to this ‘central’ body fat and can be simply measured with a tape measure at the narrowest part of your waist (or in line with your belly button). The NZ Dietetic Association recommends a waist circumference of less than 88cm for women and less than 102cm for men to reduce risk.<sup>14,16</sup> So aim to lose a few centimetres as well as a few kilos.

## Let’s get physical

Being physically active has a small beneficial effect on cholesterol and many other heart health benefits, including improved blood flow and weight reduction. The good news is activity doesn’t always have to be vigorous. Moderate activity, such as brisk walking, is great for your health.

Most people should aim for at least 30 minutes of moderate activity a day, most days of the week. Why not try brisk walking, swimming, cycling or a game of tennis or squash? Older people and those with a history of heart disease should consult their local doctor about a suitable activity plan.

### New Zealand Physical Activity Guidelines:<sup>15</sup>

- Think of movement as an opportunity, not an inconvenience.
- Be active every day in as many ways as you can.
- Put together at least 30 minutes of moderate intensity physical activity on most, if not all, days of the week.
- If possible add some vigorous exercise for extra health and fitness.

## Answers to your questions

### 1. If I change to a healthier, cholesterol-lowering diet, will I be able to give up my cholesterol medication?

A heart healthy diet works together with cholesterol-lowering medication. Your doctor is the best person to advise you on your need for medication.<sup>iv</sup>

### 2. Is it okay to eat fried foods?

At home, lightly frying foods in a little sunflower, canola or olive oil is a tasty and healthy way to prepare foods. These vegetable oils are healthy fats and can be used regularly. However, the fats used in commercial frying are usually saturated (unhealthy) fats so many deep-fried takeaways are not recommended. Check the type of oil used and choose wisely.

### 3. What about salt?

Eating salt does not affect your blood cholesterol level, but it can increase your blood pressure – another important risk factor for heart disease. Eating a little less salt is a healthy step for everybody. Avoid adding salt at the table or during cooking and watch

out for packaged foods high in salt.

### 4. Can I drink alcohol?

Alcohol has little effect on cholesterol. Including one standard drink per day for women and two a day for men is usually OK, unless you have been advised not to drink alcohol. If in doubt, check with your doctor.

### 5. Will this diet help me lose weight?

If you want to reduce your weight, the advice in this booklet will be an excellent start. However, for a personalised plan it's best to see a Registered Dietitian who can work out an eating plan that suits you.

Losing some weight combined with physical activity may help lower your cholesterol and blood pressure though it can take some time. The key is to make a few healthy changes to what you eat and stick with them.

### 6. What snacks can I eat?

This is one of the more difficult aspects of a diet to lower blood cholesterol. Some popular

snack foods such as biscuits, cakes and pastries, are very high in saturated (bad) fat so it's best to limit them.

But what to eat instead?

If you are watching your weight, limiting snacking often helps. Otherwise, some fresh fruit, raw vegetables and/or nuts are ideal snacks. Biscuits and cakes baked at home with margarine spread or plant sterol spread may also be included occasionally.

### 7. What about eggs?

Eggs are not high in saturated fat but they are rich in cholesterol, which has led to considerable debate about their role in a healthy diet. For some, cholesterol in eggs can actually raise their blood cholesterol, while others have no reaction at all.<sup>3</sup> However, if your cholesterol is high, take a cautious approach and limit yourself to 2-4 eggs a week.

### 8. Can I eat starchy foods like potato, kumara, taro and rice?

Yes, they are all low in saturated fat and are recommended. They can

be simply steamed or boiled, or prepared with a little vegetable oil or margarine spread.

### 9. What are the benefits of wholemeal bread and wholegrain breads and cereals?

Wholegrain cereal foods have been shown to promote heart health for reasons that are not yet well understood. They are also rich in dietary fibre, which is good for the health of the bowel and keeping you 'regular'. Refined cereals and white bread generally contain less fibre so choose wholegrain options more often.

### 10. Where can I find more information on healthy eating for my heart?

[National Cholesterol Education Program of New Zealand](http://www.ncepnz.co.nz)  
www.ncepnz.co.nz

[New Zealand Nutrition Foundation](http://www.nutrition.org.nz)  
www.nutrition.org.nz

[New Zealand Dietetic Association](http://www.dietitians.org.nz)  
www.dietitians.org.nz

[National Heart Foundation of New Zealand](http://www.nhf.org.nz)  
www.nhf.org.nz

<sup>iv</sup> If your cholesterol is greater than 4.0mmol/L please consult your doctor.

## Other risks to heart health

**Apart from high cholesterol there are other risk factors to heart health that you can influence:**

### Diabetes

If you have type 1 or type 2 diabetes, the sugar (glucose) levels in your blood are higher than normal, and your risk for heart disease is increased. Diabetes can damage your blood vessels, including the arteries that supply blood to your brain and heart.

### High blood pressure

The heart moves 5-8 litres of blood around the body. If you have high blood pressure, the walls of your arteries can be damaged and become less flexible, and the heart needs to work harder. Being overweight, inactive, drinking too much alcohol, eating too much salt and other aspects of diet can raise blood pressure.

### Overweight

Managing your weight will help your heart. An increase in body weight usually increases blood cholesterol, blood pressure and generally the risk of heart disease. Your body shape is also important: an “apple” body shape, where excess fat is stored around the stomach,

carries a higher risk than a “pear” body shape, where weight is carried around the hips and thighs. Your waistline should be below 88cm (women) or below 102cm (men) for optimal health.<sup>14, 16</sup>

### Smoking

If you are a smoker, the single most important thing you can do for your health is to quit smoking. After three days you will be able to breathe easier and after a year your heart disease risk due to smoking will be reduced by half.<sup>17</sup> One of the first steps in the quitting process is to decide that you want to quit, then set a quit date and plan towards it. For more information visit [www.quit.org.nz](http://www.quit.org.nz)

### Stress

Stress is a part of life, and is not harmful to your health if it happens occasionally. However, if you are stressed most of the time, it is time to take action and see your doctor. Know your limits – everyone has them – and take your time to prioritise – life should not be a race against time. Try to have a good night’s sleep, eat healthily and exercise regularly.

## Are you at risk?

**Cholesterol is only one risk factor for heart health. By filling out the questionnaire below, you will help the nurse give you better advice when discussing your cholesterol result.**

	No	Yes
I have had a heart attack or stroke in the past	<input type="checkbox"/>	<input type="checkbox"/>
I have type 2 diabetes	<input type="checkbox"/>	<input type="checkbox"/>
Male over 45 yrs or female over 55 yrs	<input type="checkbox"/>	<input type="checkbox"/>
Indian, Maori or Pacific Islander over 35 yrs (males) or over 45 yrs (females)	<input type="checkbox"/>	<input type="checkbox"/>
My father (before he was 55 years old) or my mother (before she was 65 years old) had a heart attack or stroke	<input type="checkbox"/>	<input type="checkbox"/>
My blood pressure is often too high (≥ 140/90mmHg) OR I take blood pressure lowering medication	<input type="checkbox"/>	<input type="checkbox"/>
I am overweight	<input type="checkbox"/>	<input type="checkbox"/>
I smoke every day	<input type="checkbox"/>	<input type="checkbox"/>
My cholesterol level is _____.____, <sup>iv</sup> This is above the recommended level for individuals of 4.0mmol/L <sup>1</sup> OR I take cholesterol lowering medication	<input type="checkbox"/>	<input type="checkbox"/>

If you have ticked ‘yes’ for 1 or more  OR 2 or more  then please make a time to see your general practitioner. A general practitioner can do a detailed overall heart health risk assessment and give you more information.

If you have any concerns in regards to your health, please ask your general practitioner for more information. For expert nutrition and dietary advice, visit a Registered Dietitian.

iv This is the result of a basic finger-prick cholesterol check. See your doctor for a more complete test including total, LDL and HDL cholesterol levels. Any information provided is not to be used in replacement of medication or advice from your healthcare professional.



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**The National Cholesterol Education Program of New Zealand was initiated to educate the New Zealand public and health care professionals about dietary and lifestyle measures to lower cholesterol. The program is proudly funded by Unilever Australasia. For more information on the National Cholesterol Education Program of New Zealand visit:**

**[www.ncepnz.co.nz](http://www.ncepnz.co.nz)**

**Information in this brochure has been reviewed by the New Zealand Nutrition Foundation.**



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