

A healthy

cholesterol

for a happy heart



IRISH
HEART
FOUNDATION



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

cholesterol

A healthy cholesterol for a happy heart



You probably already know that cholesterol has something to do with heart disease. But like many people, you may be confused about cholesterol, all the different fats you eat, what happens to them in your body and how they affect your heart.

In this booklet, we will try to sort out some of this confusion and answer your most commonly asked questions about cholesterol.

First, a few facts about heart disease

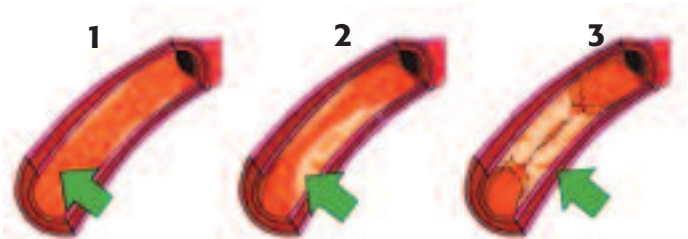
- ♥ Heart disease is the biggest cause of death in Ireland for both men and women. However, for many people heart disease can be delayed or even prevented. Healthy eating, being physically active and not smoking all help to reduce your chances of heart disease.
- ♥ One of the best ways to prevent heart disease is to keep your cholesterol at a healthy level. This booklet will outline ways to help you do this.
- ♥ Heart disease can be inherited, so if someone in your family has the disease, it is likely you may also get it.
- ♥ If you already have heart disease, or there is a history of heart disease in your family, making small healthy changes now can make a difference to your life today and tomorrow.

Why is cholesterol important?

Having high cholesterol levels in your blood is one of the risk factors which increases your chances of getting heart disease.

What is cholesterol?

Cholesterol is a type of fat found in your blood. You need a certain amount of cholesterol for all your body cells and to produce important hormones. However, if there is too much cholesterol in your blood, it sticks to the inner lining of your artery or blood vessels to form atheroma.



Cholesterol in the blood sticks to artery walls to form atheroma.

This atheroma builds up and may block the artery.

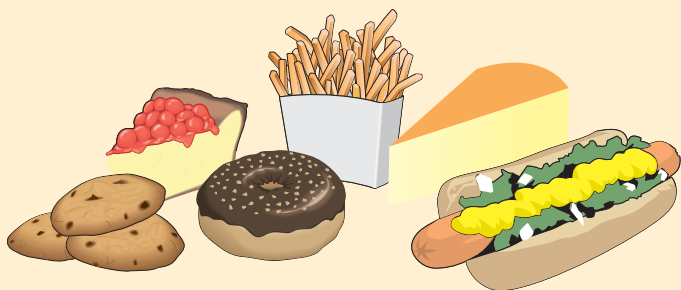
As a result of this build-up on the artery walls, your arteries become narrowed. This process is called hardening of the arteries or atherosclerosis.

- ♥ If an artery supplying the heart muscle becomes blocked completely, the heart muscle becomes damaged. This is known as a heart attack.
- ♥ If an artery to the brain is completely blocked, it damages the brain. This is called a stroke.

Where does cholesterol come from?

Cholesterol is made in the body mainly by the liver. This is often called blood cholesterol. The body can produce all the cholesterol it needs to carry out its many functions and can usually maintain a healthy level of blood cholesterol. However, sometimes the balance goes wrong and there is an increase in blood cholesterol. This may result from inherited problems or from eating too much saturated (animal) fat or too many foods from the top shelf of the Food Pyramid (see pages 8 and 9).

The level of cholesterol in your blood is affected by the amount of saturated fats you eat every day.



Some foods such as eggs, liver and shellfish contain cholesterol. However, the amount of cholesterol in these foods does not greatly affect the amount of cholesterol in your blood. You can eat foods that contain cholesterol in moderation as part of a healthy varied diet.

Confused about cholesterol?

The relationship between cholesterol and heart disease is very complicated but it helps to look at how cholesterol is carried around in the bloodstream.

There are two main types of cholesterol - HDL cholesterol (high density lipoprotein) LDL cholesterol (low density lipoprotein)

HDL

HDL cholesterol is called good cholesterol or healthy cholesterol, because it mops up cholesterol left behind in your arteries and carries it to the liver where it is broken down and passed out of the body.

Regular physical activity and exercise can help increase your HDL level.

High levels of HDL cholesterol can protect you against getting heart disease.

LDL

LDL cholesterol travels from the liver through the arteries to other parts of the body. LDL is called bad cholesterol because it sticks to the walls in your arteries – making them narrow. This reduces the blood supply to your heart or brain.

Eating too many foods high in saturated fat can raise your LDL cholesterol.

High levels of LDL cholesterol increase your risk of heart disease.

Confused about fats?

Fats in food are a mixture of saturated and unsaturated fats.

Polyunsaturated and monounsaturated fats are unsaturated fats that can help lower the amount of LDL cholesterol in your blood and reduce your chances of getting heart disease.

Polyunsaturated and monounsaturated fats are found in most pure vegetable oils like sunflower, olive and rapeseed oils. You also find them in the spreads and margarines made from these oils, as well as in many types of nuts.

You also find polyunsaturated fats in oily fish such as sardines, mackerel, trout and salmon (tinned or fresh).



Saturated fats can raise your LDL cholesterol and increase your chances of getting heart disease.

You find saturated fats in foods like butter, hard margarine, lard, cream, cheese, fatty meat, cakes, biscuits and chocolates. Check the food labels on processed and ready-made meals for the amount of saturated fats. Check also for the word hydrogenated which means that the food contains trans-fats. Trans-fats can also raise the level of LDL cholesterol. Foods containing trans-fats are found on the top shelf of the Food Pyramid (see pages 8 and 9), so reduce the amount of these foods that you and your family eat.

Have a healthy cholesterol



Top shelf.
Very small amounts.

Meat, poultry, fish (especially oily fish) and nuts. Choose any 2.

Milk, cheese and yoghurt. Choose any 3.
Teenagers and pregnant or breastfeeding mothers need five portions.

Fruit and vegetables. Choose any 5 or more.

Bread, cereals, potatoes, pasta and rice. Choose any 6 or more.

– The Food Pyramid way

Choose sunflower, olive or rapeseed oil and spreads made from these.

Use only very little oil in cooking.

Eat cakes, chocolate, biscuits, puddings and savoury snacks occasionally, not every day.

Choose two medium servings a day, in other words, four ounces (100 grams) of **lean** meat or poultry or six ounces (150 grams) of fish. Eat oily fish, for example, sardines, mackerel, trout or salmon, twice a week.

Choose three servings each day. One third of a pint of low-fat milk; one ounce (30 grams) of cheese - choose lower-fat cheeses like Edam, Blarney or light cheddar and one average pot of low-fat yoghurt.

Eat plenty of fruit and vegetables, at least five or more portions every day. Fruit and vegetables contain vitamins A, C and E which can help protect against cholesterol building up in the blood vessels.

Oats and cereals made from oats, such as porridge, can help reduce cholesterol. This happens because the fibre in these foods clings to the cholesterol and helps take it out of the body.

Have six or more servings choosing from bread (one slice); cereals (one bowl); potatoes (one medium sized); pasta or rice daily (three dessert spoons). Choose wholegrain and high fibre options often.

Is your cholesterol level too high?

Your cholesterol can be measured by your doctor, who knows your family history. If a family member has high cholesterol, heart disease or has had a stroke, it's really important you ask your doctor to do this test. You can do this on any visit.

If your results show a blood cholesterol level greater than five mmol/l (the measurement used for cholesterol levels) or your doctor is concerned about your HDL or LDL cholesterol, he or she will arrange for another test. You will need to fast for 12 hours to get more information on your HDL and LDL cholesterol.

If you already have had a heart attack, bypass surgery or angioplasty, it is very important that you keep your LDL below 2.6 mmol/l. Your doctor will most likely suggest medication together with healthy eating and other lifestyle changes outlined in this booklet.

As well as HDL and LDL levels, the more detailed test will show triglyceride levels - another type of fat - see table below and details on page 13.

If you need to change any aspects of your cholesterol or triglyceride levels, your doctor will advise you on changes in lifestyle and may recommend medication. If you are prescribed medication, it is important that you follow the instructions carefully.

Cholesterol and triglycerides

	<u>Healthy levels mmol/l</u>
<u>Total cholesterol</u>	no greater than 5
LDL cholesterol	no greater than 3
HDL cholesterol	greater than 1
Triglycerides	no greater than 2

How can I lower my cholesterol?

- ♥ Get down to a healthy weight - being overweight means your heart has to work harder to pump blood around the body.
- ♥ Eat oily fish twice a week.
- ♥ Eat more fruit and vegetables.
- ♥ Eat more wholegrain cereals and breads, plenty of jacket potatoes and rice and pasta.
- ♥ Choose lean meats. Trim fat off meat and skin off chicken. Drain oil from cooked dishes containing minced meat.
- ♥ Choose low-fat dairy products.
- ♥ Choose low-fat spreads made from sunflower or olive oil.
- ♥ Choose less foods from the top shelf of the Food Pyramid.
- ♥ Use low-fat healthy ways of cooking, like grilling or oven-baking, instead of frying.



Cholesterol-lowering foods

If you have high cholesterol, there are now a range of foods which can help lower your cholesterol. These include spreads, yoghurts and milk. These foods have ingredients which stop your body absorbing cholesterol.

If you have high cholesterol levels, you may benefit from using these products as part of a healthy varied diet. If you have high cholesterol, you should ask your doctor or dietitian to advise you, as these products can be expensive.

Cholesterol-lowering foods are not suitable for children under five years or for pregnant or breastfeeding mothers.

What if I have low HDL?

If your blood test showed that your HDL cholesterol is below the recommended levels (on page 10), you will need to increase this level to reduce your risk of heart disease.

You can increase the healthy HDL levels by:

- being more active;
- reducing your weight; and
- if you smoke, by stopping smoking.

Your doctor may also prescribe medication to raise your HDL levels.

What are triglycerides and how do they affect my heart?

Triglycerides are another type of fat found in your blood. Too much triglyceride in your blood can increase your chances of getting heart disease.

Could I have high triglycerides?

Yes, anyone can have high levels, but it is more likely if you:

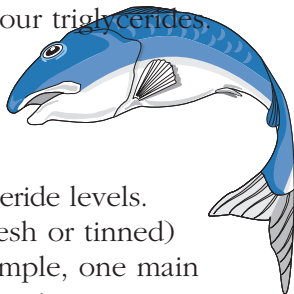
- ♥ are overweight;
- ♥ drink too much alcohol;
- ♥ eat lots of sugary foods; or
- ♥ are not very active.

Ask your doctor to check your triglyceride levels.

What can I do if my triglycerides are too high?

- ♥ Follow the general advice for lowering your blood cholesterol on page 11 – this will also help lower your triglycerides.

- ♥ Oily fish, such as sardines, mackerel, trout or salmon can help lower your triglyceride levels. Try to eat oily fish (fresh or tinned) twice a week, for example, one main meal and one lunch serving.



Oily fish, which contains n-3 or omega 3 fatty acids, improves the blood circulation, reduces the stickiness of the blood and prevents your blood from clotting.

- ♥ If you drink alcohol, take no more than one drink (such as a small glass of wine or a half pint of beer) a day and go some days without any alcohol.
- ♥ Watch the amount of sweet foods you eat from the top shelf of the Food Pyramid, like biscuits, cakes, chocolate, sweets, fizzy drinks, jams, marmalades and sugars. Choose low-sugar or sugar-free fizzy drinks, mixers and tinned fruits in their own juice. Instead of sugar try artificial sweeteners.

Check out the other risk factors for heart disease

High blood cholesterol is not the only risk factor for heart disease. Other risk factors are:

- ♥ smoking
- ♥ high blood pressure
- ♥ being overweight
- ♥ diabetes
- ♥ not being active
- ♥ stress that you cannot control
- ♥ your family history
- ♥ your age

If you have high cholesterol plus any of these risk factors, it is important that you talk to your doctor.

For a healthy cholesterol and a happy heart:

- ♥ eat more fruit and vegetables and wholegrain foods
- ♥ eat less fatty foods
- ♥ eat oily fish twice a week
- ♥ if you smoke, try to stop
- ♥ be a healthy weight
- ♥ be more physically active every day
- ♥ drink less alcohol
- ♥ learn to relax – take time out for yourself
- ♥ have a regular blood pressure and cholesterol check with your doctor.

Sample menu

Breakfast

- High-fibre cereal with low-fat milk.
- Wholemeal bread or toast, with a thin layer of polyunsaturated or monounsaturated spread.
- Fruit juice or fresh fruit.
- Tea or coffee.



Mid-morning

- Fruit or wholemeal bread or a scone.
- Tea, coffee, water or a diet drink.

Lunch

- Large serving of salad or cooked vegetables.
- Small serving of low-fat cheese, egg, lean meat, poultry, sardines or salmon.
- Wholemeal bread or roll.
- Low-fat yoghurt or glass of low-fat milk.
- Fresh fruit.
- Tea, coffee or water.

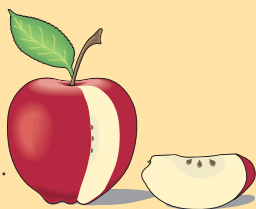


Mid-afternoon

- Fresh fruit.
- Tea, coffee or diet drink.

Main meal

- Large serving of salad or cooked vegetables.
- Moderate serving of fish (preferably oily), poultry, lean meat or low-fat vegetarian alternatives.
- Potato, rice or pasta.
- Glass of low-fat milk.
- Fresh fruit, cooked fruit, tinned fruit in its own juice, fruit-based dessert or low-fat milk pudding.
- Tea or coffee.



Supper

- Tea or water.
- Wholemeal bread or a scone.

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- ♥ be a healthy weight
- ♥ be more physically active every day
- ♥ drink less alcohol
- ♥ learn to relax – take time out for yourself
- ♥ have a regular blood pressure and cholesterol check with your doctor.

Local contact:

For more information contact:

Your local HSE Office or

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