



**IRISH HEART
FOUNDATION**
Fighting Heart Disease & Stroke

A HEALTHY CHOLESTEROL

to reduce your risk
of heart disease
and stroke



A healthy cholesterol

You probably already know that cholesterol has something to do with heart disease and stroke. 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 answer your most commonly asked questions about cholesterol.

One of the best ways to prevent heart disease and stroke is to keep your cholesterol at a healthy level.



First, a few facts

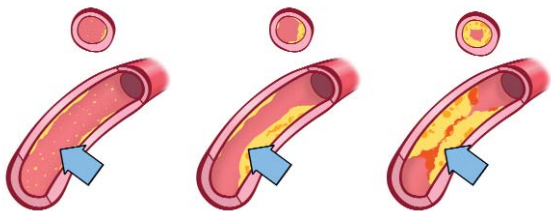
- Your blood vessels - arteries and veins - and your heart are together called your cardiovascular system. Diseases that affect the cardiovascular system are called cardiovascular diseases. These include angina, heart attacks and strokes. For convenience we will mostly use the terms heart disease and stroke in this booklet.
- The main cause of cardiovascular disease is called hardening of the arteries or atherosclerosis.
- Cardiovascular disease is the biggest cause of death in Ireland for both men and women. However, for many people heart disease and stroke can be delayed or even prevented. Healthy eating, being physically active and not smoking all help to reduce your chances of these diseases.
- One of the best ways to prevent heart disease and stroke is to keep your cholesterol at a healthy level. This booklet will outline ways to help you do this.
- Cardiovascular disease can be inherited, so if someone in your family has the disease, it is likely you may also get it.
- Having high cholesterol affects people of all ages.
- If you already have heart disease, or there is a history of heart disease or stroke in your family, making small healthy changes now can make a difference to your life today and in the future.

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 and stroke.

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 your artery walls to form atheroma or plaque.



Cholesterol in the blood sticks to artery walls to form plaque. This plaque 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 9 and 10).



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.

If you do not have a high blood cholesterol level, you can eat up to 7 eggs a week. However if you have been diagnosed with a high cholesterol level, you should eat no more than 4 eggs a week.

Confused about cholesterol?

The relationship between cholesterol and heart disease, stroke and diseases of the blood vessels 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) and 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 your liver where it is broken down and passed out of your body.

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

High levels of HDL cholesterol can protect you against having a heart attack or a stroke.

LDL

LDL cholesterol travels from your liver through your arteries to other parts of your 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 and stroke.

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 and stroke.

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.

Choose 6 or more servings of pasta, rice, potatoes or cereals



Confused about fats?

Fats in food are a mixture of:

- saturated fats;
- unsaturated fats which can be either mono-unsaturated fats or polyunsaturated fats; and
- trans fats

Saturated fats

Saturated fats are found in foods like butter, hard margarine, lard, cream, cheese, fatty meat, cakes, biscuits and chocolates. Vegetable oils such as coconut oil and palm oil are also high in saturated fat. Check the food labels on processed and ready-made meals for the amount of saturated fats.

What effect do they have?

Saturated fats can raise your LDL (bad) cholesterol and increase your chances of heart disease or having a stroke.

Monounsaturated fats

Monounsaturated fats are found in many foods but the main sources include olive, peanut and rapeseed (canola) oil, spreads that contain these oils, as well as avocados, seeds and some nuts (for example cashews, almonds and peanuts).

What effect do they have?

Monounsaturated fats can help lower the amount of LDL (bad) cholesterol in your blood and reduce your chances of heart disease and stroke.

Polyunsaturated fats

There are two main types of polyunsaturated fats: omega 3 fats and omega 6 fats. These fats are sometimes called essential fats because our bodies cannot make them and we have to get them from the food we eat.

Omega 3 fats

Omega 3 fats are found in oily fish such as salmon, mackerel, trout, herring and sardines. Tuna is also an oily fish. However, if you're using tinned tuna, make sure the label says that omega 3 fats have been replaced, as these healthy fats are normally lost during the tinning process.

What effect do they have?

Omega 3 fats can help your heart to keep a healthy rhythm and prevent blood clots. They can also help to lower another type of fat in the blood called triglycerides (see page 6).



Omega 6 fats

Omega 6 fats are found mainly in vegetable oils such as sunflower, safflower, corn, soya bean and sesame oils. Soya beans and some nuts, for example walnuts, hazelnuts and brazil nuts, also contain Omega 6 fats.

What effect do they have?

Omega 6 fats can help to lower LDL (bad) cholesterol and reduce your chances of heart disease and stroke.

Trans fats

Trans fats are mainly found in processed foods such as cakes, biscuits, pastries and deep-fried foods. If a food's list of ingredients contains the words 'hydrogenated oils' or 'hydrogenated fat', it is likely to contain trans fats.

What effect do they have?

Trans fats lower your HDL (good) cholesterol and raise the level of LDL (bad) cholesterol in the blood.

Use the Food Pyramid to plan your healthy food choices every day and watch your portion size

Choose **very small** amounts

Fats, High
Use sparingly
Only have small



Choose any **2**



Choose any **3**



Choose any **5**



Choose any **6+**



Drink water regularly -
at least 8 cups a day



Fat/Sugar Snacks, Foods and Drinks

Choose fats high in monounsaturates or polyunsaturates. Limit fried foods to 1-2 times a week. Limit small amounts of high fat/sugar snacks and drinks and not too often.



Meat, Fish, Eggs & Alternatives

Choose lean cuts of meats. Eat oily fish.



Milk, Cheese & Yogurt

Choose low fat varieties.



Fruit & Vegetables

Choose green leafy vegetables and citrus fruit frequently. Fruit juice only counts for one serving, each day.



Bread, Cereals & Potatoes

Eat these foods at each meal – high fibre is best.



FOLIC ACID - An essential ingredient in making a baby. You can get folic acid from green leafy vegetables but if there is any possibility that you could become pregnant then you should be taking a folic acid tablet (400 micrograms per day).

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 to your doctor.

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 (good) or LDL (bad) 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 at or below 2.5 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 pages 5 and 6.

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	Healthy levels mmol/l
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Total cholesterol	No more than 5
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LDL cholesterol	No more than 3
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HDL cholesterol	More than 1
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Triglycerides	No more than 2
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For people with established heart disease or diabetes	
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Total cholesterol	No more than 4.5
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LDL cholesterol	No more than 2.5
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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.
- Be more physically active every day.
- Eat oily fish twice a week.
- Eat more fruit and vegetables.
- Eat more wholegrain varieties of cereals, breads, pasta and rice. Choose jacket potatoes.
- 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.
- Be more physically active every day.



Cholesterol-lowering foods

If you have high cholesterol, there is 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, but 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.

Cholesterol-lowering foods are not a replacement for cholesterol-lowering medicine prescribed by your doctor and are not a replacement for following a healthy diet and lifestyle.

If you are taking medicine for high cholesterol, it is important that you do not replace your medicine with these products and to still have a healthy diet to reduce your risk.



What if I have low HDL?

If your blood test showed that your HDL cholesterol is below the recommended levels (on page 11), you will need to increase this level to reduce your risk of heart disease and stroke.

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 can I do if my triglycerides are too high?

- Follow the general advice for lowering your blood cholesterol on page 12 - 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 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 or ideally try to reduce the amount of sugar you add to food and drinks.

Check out the other risk factors for heart disease and stroke. In addition to high cholesterol, the other risks are:

- smoking;
- high blood pressure;
- being overweight;
- diabetes;
- not being active;
- stress that you cannot control;
- your family history; and
- 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 good heart health:

- 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 for at least 30 minutes 5 days a week;
- drink less alcohol;
- learn to relax - take time out for yourself; and
- 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.

Mid-morning

- Fruit or wholemeal bread or a scone.

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.

Mid-afternoon

- Fresh fruit.

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.

Supper

- Wholemeal bread or a scone.

Have about 8 to 10 glasses (1.5 litres) of fluids a day, preferably water.

Please make a donation today

The Irish Heart Foundation is Ireland's only charity dedicated to the reduction of death and disability from heart disease and stroke. Over 90% of our funding comes from public and business donations. We depend on your goodwill and generosity to continue our work.

If you found this booklet useful, please help our charity to continue to provide heart and stroke information by donating today.

You can make your donation today:

By post: Irish Heart Foundation,
c/o 4 Clyde Road, Ballsbridge, Dublin 4

Online: www.irishheart.ie

By phone: 01 6685001

Personal Details

Name: _____

Address (required for direct debit) : _____

Email Address: _____

Phone: _____

Mobile: _____

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Amount:

€25 €50 €100 €250* Other € _____

Card Number:

Laser Only

Exp Date: / Security Code**:

Signature: _____ Date: ____ / ____ / ____

The Irish Heart Foundation is committed to best practice in fundraising and adheres to the **statement of guiding principles for fundraising** promoting transparency, honesty and accountability. Any personal information you provide will be held in accordance with the Data Protection Acts 1988 and 2003.

Direct debit (monthly donation)

Amount: €10 €15 €18 €21*
 Other € _____ per month

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Sort Code: _____ Account No: _____

Signature: _____ Date: _____

* If you are a PAYE tax payer, gifts of €250 in one year (€21 per month) could be worth up to an extra 70% to us at no extra cost to you.

** Last 3 digits on the signature strip on the reverse of your card.

Do you need a postal receipt: Yes No
(saves cost of postage)

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I would like to volunteer to help the Irish Heart Foundation

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- You can instruct your Bank to refuse a Direct Debit payment by writing in good time to your Bank.
- You can cancel the Direct Debit Instruction by writing in good time to your Bank.



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Funding:

The Irish Heart Foundation is the national charity fighting heart disease and stroke and relies on charitable donations for 90 per cent of its funding. We support, educate and train people to save lives, campaign for patients, promote positive health strategies, support research and provide vital public information. We need your support - through donations, as a volunteer or on our training courses.

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Health Service Executive

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