

# Cholesterol and stroke

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This guide is for anyone who wants to know more about cholesterol. It includes information about where cholesterol comes from, how it affects your risk of stroke, and what you can do to lower it.

This information is for people who have had a stroke or transient ischemic attack (TIA or mini-stroke) or are at risk of having one. For more information about diet, read '[Your guide to eating well after a stroke](#)'.

## This guide will cover:

- What is cholesterol?
- Why is managing your cholesterol important?
- How is cholesterol measured?
- How to reduce your cholesterol.
- Healthy eating tips for reducing your cholesterol.
- Where to get help and information.
- Other sources of help and information.
- About our information.

## What is cholesterol?

Cholesterol is an important substance in our bodies. It plays a part in our digestive and hormonal systems but can be harmful if levels get too high. Cholesterol is a fatty substance, called a lipid, which is found naturally in your blood.

High cholesterol is very common – more than one in five adults in the UK have it. It's important to check your cholesterol levels. If there's too much cholesterol in your blood it can damage your blood vessels, which may cause heart disease and stroke. But with the right treatment and support, high cholesterol can usually be managed well.

## Where does cholesterol come from?

Your body produces most of the cholesterol it needs in the liver. We also consume cholesterol in our diets. Your liver changes how it processes cholesterol if your diet is high in saturated fats. Excess cholesterol enters your bloodstream and can cause a build-up of fatty deposits in your arteries, which can become narrow and stiff. This is a process called atherosclerosis. The damage to the artery wall can lead to a clot forming, which may travel to the brain and cause a stroke.

You don't need to avoid eating foods that contain cholesterol, such as eggs or seafood. But you should try to reduce the amount of fat that you eat, especially saturated and trans fats. For more information about fats, read '[Your guide to eating well after a stroke](#)'.

### What are the different types of cholesterol?

Cholesterol moves around the body by attaching itself to proteins in the blood. This combination of cholesterol and protein is called a lipoprotein. There are two types of cholesterol which are known as 'good' cholesterol and 'bad' cholesterol. It's important to have the right balance of both in your body.

- **Good cholesterol** – HDL (high density lipoprotein) takes cholesterol away from cells and back to the liver. The cholesterol is then destroyed. Because of this, HDL is known as good cholesterol. You should aim to increase your levels of HDL.
- **Bad cholesterol** – non-HDL or LDL (low density lipoprotein) moves cholesterol to where it's needed in your cells. But if there is too much non-HDL cholesterol in your blood, it can end up as fatty deposits in your arteries. This will increase your risk of stroke. If you've been diagnosed with high cholesterol, it's likely that your LDL is high.

### What causes high cholesterol?

For many people, high cholesterol is caused by eating too much saturated fat, and not enough unsaturated fats. Other causes include:

- Being overweight.
- Not being active.
- Drinking too much alcohol.
- Smoking.

Your gender, age, general health and whether you have high cholesterol in your family can also affect your cholesterol levels.

### Familial hypercholesterolaemia

Some people have high cholesterol because of an inherited genetic condition. This is called familial hypercholesterolaemia (FH). This is when you have a very high level of cholesterol in your blood that is not caused by diet or lifestyle alone.

FH affects up to 200,000 people in the UK, but most people don't know they have it. It's important to get diagnosed and start treatment early in life if you have FH. Talk to your doctor if you're concerned about FH.

If you have a parent, child or sibling who has been diagnosed with a stroke, heart attack or angina before they are 60, it is very important to have a cholesterol test.

Anyone who has a total cholesterol over 7.5mmol/L should have an assessment for FH. Read more about how cholesterol is measured on **page 3**.

You can treat FH with cholesterol lowering drugs. Lifestyle changes, such as exercising, healthy eating and stopping smoking can also help manage FH (see **page 5**).

### What are the symptoms?

High cholesterol has no noticeable symptoms. So, you need to have your cholesterol levels checked to find out if you have it. It's also important to know if you're at an increased risk of having high cholesterol (see below).

Your GP and some pharmacists can check your cholesterol level with a simple blood test (see **page 3**).

### How do I know if I have it?

As well as regular cholesterol checks, it's also important to be aware of your risk.

You're at risk of high cholesterol if you are over 40 and have any of the following risk factors:

- A history of heart disease or high cholesterol in your family.
- You're overweight.
- You have high blood pressure or diabetes.

Contact your GP surgery or talk to a pharmacist if you're worried about cholesterol.

## Why is managing your cholesterol important?

It's important to know if you have high cholesterol. If cholesterol is not managed it could lead to long-term health problems which could be serious.

If you have high levels of 'bad' cholesterol (non-HDL or LDL), your risk of stroke may increase by 10%. If you have both high cholesterol and high blood pressure, your risk of a stroke is nearly three and a half times higher.

If you've had a stroke or TIA you should be offered cholesterol treatment, regardless of what your cholesterol level is. Any reduction in your cholesterol may help to prevent another stroke. Treatment can reduce your risk of another stroke by more than 10%.

## How is cholesterol measured?

Cholesterol levels are checked with one of the following types of blood test:

- **A full lipid profile test.** Some blood is taken from your arm with a needle. The blood is sent to a lab and you'll usually get the results in a few days. For some tests you may be asked to not eat or drink anything for 12-14 hours before, although this isn't very common.
- **A finger prick test.** A small drop of blood from your finger is placed on a strip of paper and tested in a machine. You'll get the results straight away.

Contact your GP surgery or talk to a pharmacist about getting your cholesterol checked. They'll talk to you about which test is best for you.

## What are normal levels of cholesterol?

Cholesterol is measured in mmol/L, which is the amount of cholesterol per litre of blood. Generally, your total cholesterol level should be below 5mmol/L, and the level for non-HDL (bad cholesterol) should be below 4mmol/L.

However, if you've had a stroke or you're at risk of having a heart attack, there is not a set level at which cholesterol is considered normal. Instead, your doctor may try reducing your cholesterol to a level that is safe and healthy for you.

## How often should I check my cholesterol?

How often you check your cholesterol levels will depend on your age and if you have other health conditions. Your doctor will suggest how often you should have it checked based on your individual situation.

If you're on cholesterol-lowering medication, it's important to get your cholesterol checked at least once a year.

You should contact your GP surgery for a cholesterol test if any of the following applies to you:

- You're over 40.
- You're overweight.
- You have a family history of stroke, high blood pressure or other medical conditions such as heart disease or diabetes.

If you're aged between 40 and 74 years, you may be offered an NHS health check. This will include a cholesterol test. The NHS website has more information.

Your cholesterol results will help your GP assess your risk of stroke and heart attack. They will talk to you about things you can do to prevent them in the future.

### How to reduce your cholesterol

There are different ways to reduce your cholesterol levels. This section describes the different treatments available to help lower cholesterol. It also talks about the changes you can make to your diet. For more information about diet, read '**Your guide to eating well after a stroke**'.

If you have high cholesterol, or you're worried about your risk, contact your GP surgery. They will be able to suggest things that are suitable for you. What is right for one person won't necessarily be right for someone else.

#### Treatments

Treatments can work well at lowering cholesterol levels. Your doctor may suggest you take treatment long-term to help manage your cholesterol. In this section, we talk about the different types of treatments.

#### Statins

Statins are the main type of medication given to reduce the risk of stroke and heart attack. If you've had a stroke caused by a clot (ischaemic stroke) or a TIA, your doctor may prescribe statins to help prevent another stroke or TIA. This treatment will usually start before you leave hospital after a stroke. If you were taking statins before your stroke, you should continue to take them.

Taking statins can help to reduce your risk of an ischaemic stroke by over 10%. It can also reduce your risk of another stroke by more than 10% in people who have already had an ischaemic stroke. Statins work for people of any age, even those over the age of 75.

Statins reduce levels of 'bad' cholesterol. This helps prevent fatty deposits (atherosclerosis) forming on the walls of your arteries and blocking them.

There are many types of statins that your doctor can prescribe. Atorvastatin is usually the first treatment option that will be recommended. Your doctor can talk to you about other statins available, and which one is most suitable for you.

Always read the information which comes with your medication or ask your doctor or pharmacist if you have any questions.

If you're prescribed statins, your doctor may suggest you make some lifestyle changes too. For example, eating healthily and reducing the amount of alcohol you drink. Your doctor may also refer you to a dietitian who can give you specialist support and information.

#### Other lipid-lowering drugs

If you cannot take statins, there are other types of drugs available. But, these may not be given to someone who has had a stroke. The main alternative to statins is selective cholesterol absorption inhibitors, such as ezetimibe. These are often prescribed to people with familial hypercholesterolaemia.

If statins have not worked for you, there are newer medications such as inclisiran and bempedoic acid which may be available. These are likely to become more widely used over the next few years. Talk to your doctor about if these medications are suitable for you.

#### Other treatments

Plant sterols and stanols are naturally found in foods such as fruit and vegetables, nuts, seeds and vegetable oils. They can help reduce cholesterol in your blood when taken as supplements alongside a healthy diet.

You can buy products such as yoghurts, margarines and mini drinks which contain stanols and sterols. You need to consume about 2-3g of plant sterols each day to lower your cholesterol.

You can use plant sterols and stanols alongside cholesterol lowering medication. But they should not replace your medication. Although sterols and stanols can reduce cholesterol, they do not reduce your stroke risk in the same way as statins.

### Changing your diet

What you eat is linked to your cholesterol levels. For example, eating an unhealthy diet can lead to weight gain.

Being overweight or obese increases your risk of developing health conditions such as high cholesterol.

For more information about diet, read '**Your guide to eating well after a stroke**'.

#### Check out our online cooking videos

For more information about cooking, and healthy recipe ideas, watch our videos online. The videos show you how to cook healthy meals after you've had a stroke. Your family and friends may also find them useful.

### Other ways to manage your cholesterol

As well as treatments and diet, there are some lifestyle changes you can make to help lower your cholesterol. These include:

- Being active and exercising.
- Stopping smoking.
- Managing your weight.
- Reducing how much alcohol you drink.

## Healthy eating tips for reducing your cholesterol

Making the following changes to your diet can help to lower your cholesterol:

- Cut down on foods high in saturated fat such as full-fat dairy, fatty meat, and cakes, pastries and biscuits. Also try to reduce foods high in coconut oil, palm oil or ghee.
- Eat foods high in soluble fibre such as oats, beans, peas, pulses, nuts, fruit and vegetables.
- Eat oily fish such as salmon, mackerel, sardines, trout or fresh tuna. Aim for 2 portions each week.
- Eat five or more portions of a variety of fruit and vegetables each day.
- Use olive or rapeseed oil for salad dressings, or an oil that is high in polyunsaturated fats like sunflower oil.
- Try to include soya-based products in your diet such as tofu, edamame beans, soya milk or yoghurt.

Cholesterol from eggs, liver and kidneys, and some seafoods does not affect your blood cholesterol levels, unless you eat very large amounts.

### Where to get help and information

#### From the Stroke Association

##### Helpline

Our Helpline offers information and support for anyone affected by stroke, including family, friends and carers.

Call us on **0303 3033 100**,  
from a textphone **18001 0303 3033 100**  
Email **helpline@stroke.org.uk**

##### Read our information

Log onto **stroke.org.uk**, where you can find easy-to-understand information, videos and an online community to support you.

You can also call the Helpline to ask for printed copies of our guides.

### Other sources of help and information

#### Action on Salt

Website: **actiononsalt.org.uk**

Telephone: **020 7882 5941**

Information about salt and how it affects your cholesterol levels.

#### British Dietetic Association

Website: **bda.uk.com**

Telephone: **0121 200 8080**

Provides factsheets on various aspects of diet and nutrition, including cholesterol.

#### British Heart Foundation

Website: **bhf.org.uk**

Telephone: **0300 330 3311**

Information and support for people affected by familial hypercholesterolaemia.

#### Heart UK

Website: **heartuk.org.uk**

Email helpline: **ask@heartuk.org.uk**

Information and support for people affected or worried about high cholesterol, including a specialist email helpline.

#### NHS website

Website: **nhs.uk**

Information from the NHS about food, diet and cholesterol.



### About our information

We want to provide the best information for people affected by stroke. That's why we ask stroke survivors and their families, as well as medical experts, to help us put our publications together.

#### How did we do?

To tell us what you think of this guide, or to request a list of the sources we used to create it, email us at [feedback@stroke.org.uk](mailto:feedback@stroke.org.uk)

#### Accessible formats

Visit our website if you need this information in audio, large print or braille.

#### Always get individual advice

This guide contains general information about stroke. But if you have a problem, you should get individual advice from a professional such as a GP or pharmacist. Our Helpline can also help you find support. We work very hard to give you the latest facts, but some things change. We don't control the information provided by other organisations or websites.

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