

Blood-thinning medication and stroke

Stroke Helpline: 0303 3033 100
or email: helpline@stroke.org.uk

Blood-thinning medicines can reduce your risk of a stroke by helping to prevent blood clots. This guide explains the types available, how they work and how to take them.

What are blood-thinning medications?

There are several types of blood-thinning medication that work in different ways. Despite the name, they don't make your blood thinner. But they do reduce the risk of clots forming in your blood.

Why are they used?

If you have a stroke due to a clot in the brain (known as an ischaemic stroke) or a transient ischaemic attack (TIA), you will probably need to start taking blood-thinning medication. This is a long-term treatment to reduce your risk of having another stroke.

People with heart conditions such as atrial fibrillation (irregular heartbeat), may be given blood-thinning medications to reduce their risk of a stroke.

If you have any questions or need support with your treatment, talk to your GP, pharmacist or specialist stroke nurse.

What is a stroke?

A stroke happens when the blood supply to part of your brain is cut off, killing brain cells. For more information about all aspects of stroke visit stroke.org.uk/what-is-stroke.

About stroke and blood clots

Why does blood clot?

Clotting helps the body to protect itself. When skin or a blood vessel is cut or damaged, a blood clot naturally forms at the site of the injury. This stops the bleeding and helps prevent infection.

Clots and stroke

If a blood clot forms inside a blood vessel or in the heart, it can travel to the brain and cause a stroke or TIA.

Why clots happen

Some of the main ways clots form in the body include:

- **Blocked blood vessels:** fatty deposits can build up on the inner lining of blood vessels, making them stiffer and narrower. This process is called atherosclerosis.

The lining of the blood vessels is damaged, which can cause a clot to form.

- **Heart problems:** a clot can form inside the heart if you have a heart problem such as atrial fibrillation (irregular heartbeat).
- **Arterial dissection:** a tear in the lining of a major artery in the neck due to injury or illness. A clot can form in the damaged artery lining, leading to a stroke.

Benefits and risks of blood-thinning medication

Benefits

Taking blood-thinning medication is often one of the main ways you can reduce your risk of a stroke if you have had a stroke or TIA, or have a heart condition. By reducing the risk of clots forming, they give you a much greater chance of recovering and staying healthy after a stroke.

Risks

Blood-thinning medications carry an increased risk of bleeding. This can be mild, such as small cuts or injuries taking slightly longer than usual to heal. There is also a small chance of more serious bleeding, such as bleeding in or around the brain (haemorrhagic stroke).

What's right for you?

You will only be offered medication if the benefits to your health outweigh the risks. You are carefully assessed to work out which treatment is right for you. This depends on:

- The type of stroke you had.
- What caused the stroke.
- Other health conditions you have.
- Other medications you're on.
- Your age.

Doctors discuss your options with you, and you'll be monitored when you start taking medication.

Your dose or the type of medication may be changed, and you might be given a combination of medications.

Side effects and what to look out for

Tip: you can find a full list of side effects in the patient leaflet that comes with your medication.

Like all medications, blood-thinning medications can cause side effects, which may be mild or more serious.

Serious side-effects

- If you have any stroke symptoms always call **999** immediately.
- If you have blood in your wee, poo or vomit, severe bruising, chest pain, wheezing or difficulty breathing, contact your GP immediately or go to your nearest accident and emergency (A+E) department.

Other side-effects

These vary between types of medication, but the most common include:

- Indigestion
- Diarrhoea, constipation or nausea.
- Itchy skin.
- Headaches.

Don't stop taking your medication if you're having side effects, as this can increase your risk of a stroke.

Do contact your GP, pharmacist or call **111** to get help and advice.

You can report side effects using the Yellow Card scheme run by the Medicines and Healthcare products Regulatory Authority (MHRA) online at yellowcard.mhra.gov.uk.

Dental and medical treatment

Before any dental treatment or surgical procedure, tell your dentist or doctor you are taking blood-thinning medication.

You might need to stop taking it before the procedure, but only with medical advice. You may need an alternative medication such as heparin for a short time.

If you need an emergency operation while taking warfarin, you may need treatment to reverse the effects of warfarin.

You should be given an anticoagulant alert card to carry in case you need emergency medical treatment.

Taking other medications?

Some other medications can affect the way blood-thinning medications work. This can put you at greater risk of a stroke or excessive bleeding.

These include some types of:

- Antibiotic.
- Antidepressant.
- Steroid.
- Epilepsy drugs.
- Non-steroidal anti-inflammatory (NSAID) such as ibuprofen.
- Some supplements and herbal medicines, such as St John's Wort and Chinese medicine.

If you are taking any other prescription medications or over-the-counter medicines or supplements, let your doctor or pharmacist know.

Getting support with taking your medication

It can sometimes take a while to adjust to taking a long-term medication. You will have regular checks while taking blood-thinning medication, and you might need to try different doses or new types of medication before finding what's right for you. Your pharmacist can give you advice and support with taking medicines, such as practical tips for taking tablets, and advice about side effects.

Pharmacy-based support service (England only)

In England, you can join the New Medicines Service (NMS) by asking your local pharmacist. This gives you three appointments with your pharmacist in a private consultation room. The service helps you with getting started, and supports you with solving any problems.

Periods and pregnancy

Heavy periods and vaginal bleeding

Some women find that blood-thinning medication can give them heavy periods or vaginal bleeding between periods. Trans men who have periods might also have vaginal bleeding or heavy periods.

A heavy period could mean bleeding more heavily or for much longer than usual. You might need to change a pad or tampon every hour or two, leak blood, or pass blood clots.

How can heavy periods be managed?

Heavy periods can lead to low iron levels in your blood (anaemia). This needs to be treated with medication and sometimes blood transfusions. If your bleeding suddenly becomes much heavier, get medical help as soon as possible.

Your GP or pharmacist can discuss options for reducing bleeding with you. Some women find that using an intrauterine system (IUD or contraceptive coil) reduces the bleeding. You might be able to go onto a slightly lower dose, as long as the doctor thinks your risk of a clot or stroke is under control.

Pregnancy

You can't take most types of anticoagulants while you're pregnant or breastfeeding. So if you are pregnant or planning to have a baby, speak to your GP or midwife. You'll need help to manage your risk of a stroke or blood clots while pregnant. This may include having an injectable anticoagulant such as heparin.

Types of blood-thinning medication

There are two main types of blood-thinning medication:

- Antiplatelets.
- Anticoagulants.

Both types reduce the risk of clots in your blood vessels, but they work in different ways.

Antiplatelets: how they work

Platelets are small, sticky cells in your blood. They are an important part of the clotting process because they can clump together at the site of a wound, such as a cut on your skin. This protects the wound and stops bleeding. But if platelets clump together inside an artery and form a clot, it can travel to the brain and cause a stroke.

Antiplatelet medications make it harder for the platelets to stick together, so that a clot is less likely to form.

When they are used

Antiplatelet treatment is often used after a stroke or TIA if you have atherosclerosis, which means having a build-up of fatty material inside your arteries. Some common antiplatelet drugs are aspirin and clopidogrel.

Anticoagulants: how they work

Anticoagulants interfere with fibre-forming substances in your blood which are part of the clotting process (coagulation). These fibres knit together, and often combine with platelets, to form a clot.

When they are used

Anticoagulants are often used for people with heart conditions like atrial fibrillation or a metal heart valve replacement. The main anticoagulants are apixaban, dabigatran, edoxaban, rivaroxaban and warfarin.

Which medication will I be given?

Antiplatelet medication is often the first blood-thinner used after a TIA or ischaemic stroke. This could include aspirin, clopidogrel and sometimes dipyridamole. Later, you might change to anticoagulants or stay on antiplatelets. Some people will start on anticoagulants straight away.

You should have a checkup at least once a year to make sure the medication is working and check your other stroke risk factors. You will need more frequent checks if you are on some types of anticoagulant.

This guide can only give general information. You should always get individual advice about your own health and any treatment you may need from a medical professional such as a GP or pharmacist.

Taking antiplatelets

Aspirin

You may know aspirin as a painkiller, but it is also used in low doses to reduce blood clotting.

Who can and can't take it

Pregnant women may be prescribed low-dose aspirin if they have a risk of blood clots or stroke. Aspirin can pass into breast milk in very small amounts, so ask for advice about taking aspirin while breastfeeding from your midwife, pharmacist or GP.

Aspirin may not be suitable for people with:

- Liver or kidney problems.
- Asthma.
- A blood-clotting disorder.
- Allergy to other nonsteroidal anti-inflammatory drugs (NSAIDs) like ibuprofen or naproxen.

How to take it

It's usually taken once a day. Take aspirin with food to reduce stomach upsets. Don't take extra aspirin as a painkiller, as this can cause bleeding. Paracetamol can be used as a painkiller.

Possible side effects

As well as the common side effects mentioned in the 'Side effects' section above, a common side effect of aspirin is mild indigestion.

More serious effects to watch out for:

- Painful joints in hands and feet can be a sign of high levels of uric acid in the blood.
- Your skin or eyes turning yellow can be a sign of liver problems.

Clopidogrel

Clopidogrel is an antiplatelet often used with, or instead of aspirin.

Who can and can't take it

If you're pregnant or breastfeeding you might not be able to use clopidogrel, but it can be used if necessary. A doctor will discuss the options with you.

Clopidogrel may not be suitable for people with:

- Liver or kidney problems.
- Blood-clotting disorders.
- Stomach ulcer.

Medications for acid reflux (heartburn) called proton pump inhibitors can make clopidogrel less effective.

How to take it

It's usually taken once a day, at the same time each day. It can be taken with or without food.

Dipyridamole (Persantin)

Dipyridamole, also known by the brand name Persantin®, is a less commonly prescribed antiplatelet.

If your doctor recommends using it, they will discuss your treatment options with you to help you make your decision.

Taking anticoagulants

There are several types of anticoagulant. Your doctor will discuss your options with you, including the risks and benefits of any medication. You should then decide together which anticoagulant would be the most suitable for you.

Who can and can't take anticoagulants

Most anticoagulants aren't suitable while you are pregnant or breastfeeding (see 'Heavy periods and pregnancy' on **page 3**). If you had a haemorrhagic stroke (due to bleeding in or around the brain) you'll be assessed to help decide if and when you should take anticoagulants.

You might not be able to take some types of anticoagulant if you have:

- Liver or kidney problems.
- Thyroid problems.
- Blood-clotting disorders.
- Stomach ulcer.

Monitoring and check-ups while you're on anticoagulants

Direct oral anticoagulants (DOAC)

The most common type of anticoagulants are direct oral anticoagulants (DOAC). There are several types of DOAC including apixaban, dabigatran, edoxaban and rivaroxaban.

Before starting on a DOAC, you will have blood tests to check for problems such as liver, kidney and blood clotting disorders. Once you are taking them you will have a follow-up check at one month.

After that checks could be around three to six months apart depending on your age and health.

The check-up looks at side effects including bleeding, and any help you need with taking your medication. You should have an annual kidney and liver function blood test.

Warfarin

Warfarin is an older type of medication which needs more monitoring than DOACs, but is still the best treatment for certain conditions. For full details of how warfarin is prescribed and monitored, see the 'Warfarin' section later in this guide.

Quick guide to the different types of blood-thinning medication

Apixaban (Eliquis)

Apixaban makes the blood less likely to clot by blocking a protein (Factor Xa) in the blood. You will not need to have regular blood tests.

How to take it

Try to take apixaban at a regular time of day. It's usually taken twice a day, with or without food.

Possible side effects

As well as the common problems mentioned in the 'Side effects and what to look out for' section above, other side effects of apixaban may include:

- Anaemia.
- Feeling dizzy or lightheaded.
- A mild rash.

Dabigatran etexilate (Pradaxa)

How it works

Dabigatran etexilate attaches itself to a protein (called thrombin) in your blood, making your blood less likely to form a clot. You should take dabigatran exactly as your doctor prescribes.

How to take it

Try to take dabigatran at a regular time of day. It's usually taken twice a day, with or without food.

Possible side effects

As well as the common problems mentioned in the 'Side effects and what to look out for' section above, other side effects of dabigatran may include:

- Stomach pain.

Edoxaban (Lixiana)

How it works

Edoxaban, like apixaban and rivaroxaban, makes the blood less likely to clot by blocking a blood protein called factor Xa. You will not need to have regular blood tests.

How to take it

Try to take edoxaban at a regular time of day. It's usually taken once a day, either with or without food.

Possible side effects

As well as the common problems mentioned in the 'Side effects and what to look out for' section above, other side effects of Edoxaban may include:

- Itchiness.
- Nausea.

Rivaroxaban (Xarelto)

How it works

Rivaroxaban makes the blood less likely to clot by blocking a protein (Factor Xa) in the blood. This protein plays a key role in the blood clotting process.

How to take it

Try to take rivaroxaban at a regular time of day. It's usually taken once or twice a day, and it's best to take it just after a meal or a snack to help you absorb the dose.

Possible side effects

As well as the common problems mentioned in the 'Side effects and what to look out for' section above, other side effects of Rivaroxaban may include:

- Dizziness.
- Mild rash.

Warfarin

How it works

Warfarin blocks vitamin K, which is a substance that helps to create the protein fibres that make up blood clots. Reducing these proteins slows down clot formation.

How to take it

Try to take warfarin at a regular time of day. It's often taken in the evening. It's usually taken once a day, either with or without food.

Before starting warfarin, you will have tests to check for problems such as liver, kidney, blood clotting and thyroid disorders.

While you are taking warfarin, you have regular blood tests which measure how long your blood takes to clot. This is called the international normalised ratio (INR). At the start, you have frequent tests, and your dose is adjusted until the target INR is achieved. After that tests can be around 12 weeks apart but some people need more frequent checks.

You might be able to use a self-testing kit at home. Speak to your GP to find out if this is possible for you.

Food and drink on warfarin

Food

Vitamin K can affect warfarin. It's found in healthy foods such as green leafy vegetables, chickpeas, avocado and olive oil. Try to keep your diet fairly steady over time. If your diet changes speak to your GP or pharmacist.

Drink

Drinking grapefruit or pomegranate juice, or having large amounts of alcohol can raise the risk of bleeding.

Possible side effects

The main side effect of warfarin is bleeding. Less common side effects of warfarin may include:

- Rashes.

For more information visit stroke.org.uk

What is a clot-busting medication?

Clot-busting medication (alteplase) is a one-off emergency stroke treatment given in hospital. It breaks down clots to allow the blood to reach the brain cells and reduce damage in the brain. To learn more visit stroke.org.uk/ischaemic-stroke.

Where to get help and information

From the Stroke Association

Helpline

Our Stroke Helpline is for anyone affected by a stroke, including family, friends and carers. The Helpline can give you information and support on any aspect of stroke.

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

Read our information

Get more information about stroke online at stroke.org.uk, or call the Helpline to ask for printed copies of our guides.

My Stroke Guide

The Stroke Association's online tool My Stroke Guide gives you free access to trusted advice, information and support 24/7. My Stroke Guide connects you to our online community, to find out how others manage their recovery.

Log on to mystrokeguide.com today.

Other sources of help and information

Arrhythmia Alliance

Website: hearhythmalliance.org/aa/uk

Tel: **01789 867 501**

Support for people with all types of heart arrhythmias.

Atrial Fibrillation Association

Website: hearhythmalliance.org/afa/uk

Tel: **01789 867 502**

A charity that supports people with AF.

NHS UK

Website: nhs.uk

This website covers all aspects of health including information on different types of blood-thinning medicines.

NHS Inform (Scotland)

Website: nhsinform.scot

Provides information on health conditions, treatments and health services in Scotland.

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.

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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