

## Blood-thinning medication and stroke

Blood-thinning medicines help to prevent clots forming in your blood. They are often prescribed after a transient ischaemic attack (TIA) or a stroke. This guide looks at the different types of medication and how they can help reduce your risk of a stroke.

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### What are blood-thinning medications?

There are two main types of blood-thinning medication, which work in different ways to avoid clots forming in your blood. Despite the name, they do not make your blood thinner. But they do change the way some types of blood cells and blood proteins work.

### Why are they used?

After a stroke or TIA, most people will need to take a blood-thinning medication as a long-term treatment. They are also given to people with heart conditions such as atrial fibrillation (irregular heartbeat), to reduce the risk of a stroke.

Taking the medication is one of the main ways you can reduce your risk of a stroke. So keeping going with your treatment can be really important in your recovery and staying healthy.

If you are taking blood-thinning medication and need support with your treatment, talk to a medical professional like your doctor, pharmacist or specialist stroke nurse.

This guide is about medication used to prevent strokes. If you wish to learn about clot-busting drugs (alteplase) used to treat a stroke in hospital, read our guide 'Ischaemic stroke' or visit our website [stroke.org.uk](http://stroke.org.uk).

### Why does blood clot?

Clotting is a really important way for the body to protect itself. When our blood vessels are cut or damaged, a blood clot will naturally form to plug the hole until the blood vessel heals. This stops the bleeding and helps prevent infection.

### Clots and stroke

Sometimes, a blood clot forms inside a blood vessel or in the heart. If this clot travels into your brain, it can cause a stroke or transient ischaemic attack (TIA).

Clots can happen for a number of reasons. The arteries can become narrowed by a build-up of fatty deposits known as plaques, or atheroma. This can damage the lining of the blood vessels and cause a clot to form.

A clot can form inside the heart if you have a heart condition such as atrial fibrillation (irregular heartbeat) or patent foramen ovale

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(a hole in the heart). Damage to the main arteries inside the neck (arterial dissection) can also cause a clot.

Blood-thinning medication makes clots less likely to form in your blood, and therefore reduces your risk of having a stroke.

### What is a stroke?

A stroke is a brain attack. It happens when the blood supply to part of your brain is cut off, killing brain cells. A TIA is the same as a stroke, but the symptoms last a short amount of time. Around 85% of strokes are due to a clot (ischaemic stroke).

### Bleeding in the brain

Some strokes (around 15%) are caused by bleeding in or around the brain. This is called a haemorrhagic stroke. Blood-thinning medicines can increase the risk of this sort of bleeding, or make it worse.

If you are already taking blood-thinning medication (anticoagulant) and are diagnosed with a haemorrhagic stroke, you should be given medication immediately to reverse its effects.

## Types of blood-thinning medication

There are two main types of blood-thinning medicines: antiplatelets and anticoagulants. Both 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. You are most likely to be put on long-term antiplatelet treatment if you have atherosclerosis, which means having a build-up of fatty material (plaques or atheroma) inside your arteries. Some common antiplatelet drugs are aspirin, dipyridamole and clopidogrel.

### Anticoagulants: how they work

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

You are more likely to be given an anticoagulant if you have a heart condition like atrial fibrillation. Some common anticoagulants are warfarin, dabigatran, rivaroxaban, apixaban and edoxaban.

## What medication will I be given?

Most people are given anti-platelet medication immediately after a TIA or ischaemic stroke. This could include aspirin, clopidogrel and dipyridamole, or a combination of aspirin and dipyridamole.

After two weeks you might stay on the same type of medication, or move to an anticoagulant. This depends on whether you have a heart condition and some other medical conditions.

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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.

### Antiplatelets

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.

Because blood-thinning medication affects the way your blood clots, they increase your risk of bleeding. So if you cut or injure yourself, it may take slightly longer than usual for the bleeding to stop. This shouldn't cause too many problems for small cuts and injuries. However, you will have a slightly higher risk of having a haemorrhagic stroke (bleeding in or around the brain).

So if you have any stroke symptoms, or if you have blood in your wee, poo or vomit, always call **999** immediately.

### Aspirin

Aspirin is often used to treat pain and reduce fever, but it is also an antiplatelet and in low doses it can help to prevent blood clots.

After a stroke or TIA, it's likely that you'll be prescribed a daily dose of aspirin to begin with. Sometimes this is combined with clopidogrel. However, in the long term, your prescription is likely to change to clopidogrel alone, or (less commonly) aspirin and dipyridamole together, unless there's a reason why you can't take one of them. In that case, you may be given aspirin on its own, or dipyridamole on its own.

Aspirin can sometimes irritate your stomach, but taking it with food can help to prevent this. You should also make sure that you drink plenty of water so that you don't become dehydrated. Follow the instructions in the leaflet or label that comes with your medicine.

Aspirin is not suitable for everyone. If you have liver or kidney problems, asthma, a blood-clotting disorder or if you've ever had an ulcer in your stomach you may not be able to take it. It's not usually prescribed if you're pregnant and you won't be able to take it if you're allergic to other nonsteroidal anti-inflammatory drugs (NSAIDs) like ibuprofen or naproxen. These drugs can interact with aspirin, so you should check with your doctor before taking them.

The most common side effects that aspirin causes are indigestion and bleeding. Less common side effects include wheezing or breathing difficulties, nausea, rashes and dizziness. Unusual bleeding, such as blood when you go to the toilet, is a symptom of bleeding in the stomach. If you have any stroke symptoms, call **999**.

Some people develop stomach ulcers when they take aspirin for a long time because it damages the lining of your stomach. If you have a burning or gnawing pain in your stomach this could be a sign that you have an ulcer and you should see your doctor

### Clopidogrel

Clopidogrel is an antiplatelet drug, and is the one most commonly prescribed for long-term use following a stroke or a TIA. It can be taken with or without food, and you should take it at the same time each day.

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Clopidogrel is not suitable for everyone. It is not recommended if you are pregnant or breastfeeding. You also need to tell your doctor if you have liver or kidney problems, a bleeding disorder, a stomach ulcer, or if you are taking other medicines. Clopidogrel may interact with other medicines such as non-steroidal anti-inflammatories (NSAIDs) like aspirin, ibuprofen and naproxen. Drugs for acid reflux (heartburn) called proton pump inhibitors can interact with clopidogrel, so talk to your doctor or pharmacist if you are taking other medication.

The main side effects of clopidogrel are bleeding and bruising. Like aspirin, there is a very small risk of bleeding in the brain. Some people experience diarrhoea, stomach pain, indigestion or heartburn when taking clopidogrel. Other side effects include nausea, vomiting, headaches, dizziness, constipation, itching and sore throat.

### Dipyridamole (Persantin)

Dipyridamole is also known by the brand name Persantin. It is an antiplatelet drug that is often prescribed with aspirin. You may be given a tablet which combines both aspirin and dipyridamole.

If you cannot take aspirin, you will probably be given dipyridamole to take on its own. If you are taking medicine for indigestion, do not take it at the same time as your dipyridamole prescription.

Dipyridamole is not suitable for everyone, especially people with heart problems. If you've had a heart attack, have heart disease, angina or heart valve problems you may not be able to take it. It can also react with other medicines such as anticoagulant, antiplatelet and blood pressure drugs. So it's

important that your doctor knows your full medical history, including all the medication that you're taking, before you start taking dipyridamole.

You should also tell your doctor if you are pregnant, planning to become pregnant, or breastfeeding, as you should only take dipyridamole in these circumstances if it's essential for you to do so.

Common side effects of dipyridamole include nausea and an upset stomach, dizziness, indigestion and headaches. Less common side effects include diarrhoea, bleeding, rashes, muscle pain and fainting.

### Anticoagulants

Anticoagulant medication is often used to reduce your risk of stroke if you have a heart condition like atrial fibrillation (irregular heartbeat). There are several kinds of anticoagulants which work in a range of different ways. Your doctor should talk to you about all the available options, along with their risks and benefits. You should then decide together which anticoagulant would be the most suitable for you.

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

### 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.

Apixaban can be taken with or without food. If you have kidney problems, you will usually be given a reduced dose. Apixaban is not usually recommended if you are pregnant

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or breastfeeding. If you are taking any other prescribed medicines, or herbal remedies, please check with your doctor whether it is safe to continue doing so.

The main side effects of apixaban are bleeding and anaemia. Seek urgent medical attention if you experience any unusual bleeding.

### Dabigatran etexilate (Pradaxa)

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.

If you take dabigatran etexilate, you do not need to have regular blood tests, as it works in a different way to warfarin. However, you may need to have occasional blood tests. Your doctor will tell you when these tests should take place. It is not usually prescribed if you are pregnant or breastfeeding.

Some types of medication can interact with dabigatran etexilate. Check with your doctor or pharmacist if it is safe to take any other prescribed or herbal remedies, such as anti-inflammatory medication or St John's wort.

Side effects include bleeding, diarrhoea, indigestion, nausea and stomach pain. You should seek urgent medical attention if you experience any unusual bleeding. If you are having an operation or dental treatment, ensure the medical professionals are aware that you are taking dabigatran etexilate.

### Edoxaban (Lixiana)

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. Edoxaban is taken once a day, either with or without food. The drug is not used if you are pregnant or breastfeeding. It can interact with other medicines, although always check with your doctor whether it is safe to continue taking other prescribed medicines or herbal remedies.

The main side effect of edoxaban is bleeding, but patients may also experience nausea or itchiness. Seek urgent medical attention if you experience any unusual bleeding.

### Rivaroxaban (Xarelto)

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. It works in a different way to warfarin so you will not need to have regular blood tests. Rivaroxaban should be taken once daily with food, exactly as prescribed by your doctor. If you have kidney problems, you will usually be given a reduced dose.

Rivaroxaban is not usually recommended to be used if you are pregnant or breastfeeding. Ask your doctor whether it is safe to take Rivaroxaban with any other prescribed medicines or herbal remedies you may be taking.

Side effects of rivaroxaban include bleeding, constipation, diarrhoea, dizziness and fainting. You should seek urgent medical attention if you experience any unusual bleeding, high temperature or rash.

### Warfarin

Warfarin works by changing the way your liver uses vitamin K. Vitamin K plays an important role in the blood-clotting process. It helps to produce a protein called prothrombin, which helps your blood to clot. Warfarin slows down the way vitamin K is made, which increases the time it takes for your blood to clot.

Warfarin is given in tablet form and the dose needs to be tailored to you individually. This is because people respond to warfarin differently and it is not easy to predict. It should be taken at the same time every day.

You need to have regular blood tests to make sure that your blood is not becoming too thin. The test checks how quickly your blood clots at a particular stage in the process and compares it to a normal sample. The result is called the international normalised ratio (INR). INR is expressed as a number.

A normal INR value for blood (when you are not taking anticoagulants) is around one. If you have AF and are on warfarin your blood should be two to three times thinner than normal, so you should have an INR value of between two and three.

You will need to have a blood test at least every week when you first start taking warfarin, as your dose will need to be adjusted to suit you. When your INR is stable, you will probably need a blood test every six to eight weeks.

When you are first prescribed warfarin you may receive a pack which contains a credit-card sized alert card, a yellow booklet and a record card.

Warfarin is not suitable for everyone and should not be taken if you have very high blood pressure or stomach ulcers. It should also be avoided if you are pregnant. The main side effect of warfarin is bleeding. The most serious type of bleeding is in the brain, though this is very rare. If you experience symptoms of another stroke, you should call 999. Less common side effects of warfarin include rashes, vomiting and diarrhoea.

Some medicines and supplements such as St John's wort can interact with warfarin and affect your INR. Always tell your doctor or pharmacist if you are on warfarin before taking any new medication, particularly antibiotics, antidepressants, aspirin, statins, ulcer medicines, or herbal supplements.

### Warfarin and food

If you are taking warfarin, you need to be mindful of the foods you are eating. Your warfarin dose is usually adjusted to the level of vitamin K in your diet. So you shouldn't make sudden changes to the amount of vitamin K that you eat, as this could affect your INR.

This doesn't mean that you should avoid foods that are high in vitamin K, as these are an important part of a healthy diet. Equally, you shouldn't change the amount you eat without talking to your anticoagulant specialist first.

Foods that are very high in vitamin K and are most likely to affect your INR are green, leafy vegetables such as spring greens, broccoli, spinach and kale. Olive oil, rapeseed oil, soya oil and soya flour are also high in vitamin K. These can be found in salad dressings, mayonnaise and pre-cooked foods. Keep your intake of vitamin K from these products stable.

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It's best to avoid cranberries and cranberry juice because they can affect the way that warfarin works. Some natural health food products and herbal remedies can also affect warfarin, so check with your pharmacist or doctor before taking anything like this.

Alcohol can increase your INR, so you need to keep within the recommended limits. See our guide 'Alcohol and stroke' for more information.

When you're taking warfarin, the main things to remember are:

- Eat a healthy diet.
- Keep the amount of vitamin K in your diet the same from week to week.
- Talk to your anticoagulant specialist about any changes you want to make to your diet or weight.

### What else do I need to know?

#### Read the patient information

Always read the patient information leaflet that comes with your medication to help you understand how to take it safely.

#### Talk to your doctor

Tell your doctor about any new medication you are taking if you are on anticoagulants.

Never stop taking your medication if you feel unwell. Always contact your GP for advice before stopping. If you have any stroke symptoms, always call **999**.

You should also tell your dentist you are taking anticoagulant medication before you have any treatment.

#### Talk to your local community pharmacist

Tell your pharmacist about any newly prescribed medication, supplements

including herbal or Chinese medication, or any over the counter medication as these may interact with your current medication. Your pharmacists can offer you a Medication Use Review (MUR) or New Medicines Service (NMS) on newly prescribed medication to help you stick to your treatment and offer support.

#### Alert card

You should be given a patient alert card when you start taking an anticoagulant, or you can ask for one from your GP, pharmacist or anticoagulation clinic. Always carry your alert card with you in case of an emergency.

## Where to get help and information

### From the Stroke Association

#### Talk to us

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**, or email [helpline@stroke.org.uk](mailto:helpline@stroke.org.uk).

#### Read our information

Get detailed information about stroke online at [stroke.org.uk](http://stroke.org.uk), or call the Helpline to ask for printed copies.

#### My Stroke Guide

The Stroke Association's online tool My Stroke Guide gives you free access to trusted advice, information and support 24/7.

Log on to [mystrokeguide.com](http://mystrokeguide.com) today.

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## Other sources of help and information

### Anticoagulation UK

**Website:** [anticoagulationuk.org](http://anticoagulationuk.org)

They provide information and support for people on anticoagulant medication.

### Arrhythmia Alliance

**Website:** [heartrhythmalliance.org](http://heartrhythmalliance.org)

**Tel:** 01789 867 501

Support people with all types of heart arrhythmias.

### Atrial Fibrillation Association

**Website:** [heartrhythmalliance.org](http://heartrhythmalliance.org)

**Tel:** 01789 867 502

A charity that supports people with AF.

### NHS UK

**Website:** [nhs.uk](http://nhs.uk)

Detailed information on health including stroke and blood-thinning medicines.

### NHS Inform (Scotland)

**Website:** [nhsinform.scot](http://nhsinform.scot)

Information about health, 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](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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