

## Blood-thinning medication after stroke

Blood-thinning medicines are drugs that help to prevent clots forming in your blood. They are often prescribed after a transient ischaemic attack (TIA) or an ischaemic stroke. This factsheet explains the link between blood clots and stroke and the types of blood-thinning medication that you may be prescribed to help reduce your risk of having another ischaemic stroke or TIA.

### What is a stroke?

**A stroke is a brain attack.** It happens when the blood supply to part of your brain is cut off. It can be caused by **a blockage** in one of the blood vessels leading to your brain or by **a bleed** in your brain.

Blood carries essential nutrients and oxygen to your brain. Without blood your brain cells can be damaged or die.

Around 85% of strokes are caused by a blockage cutting off the blood supply to the brain. This is called an **ischaemic stroke**.

The blockage can be **caused by a blood clot** forming in an artery leading to your brain or within one of the small vessels deep inside your brain. This is known as cerebral thrombosis. Blockages in the brain can also be caused by a blood clot or other matter (such as an air bubble or piece of fatty debris) moving through the blood stream from another part of the body. This is called a cerebral embolism.

### What is a TIA?

A TIA is also known as a mini-stroke. It is the same as a stroke, except that the **symptoms last for a short amount of time** and no longer than 24 hours.

Although the symptoms may not last long, **a TIA is still very serious**. It is a sign that there is a problem and you are at risk of having a stroke. More than 1 in 12 people will have a stroke within a week of having a TIA. Because of this, a TIA is often called a **warning stroke**. Like ischaemic strokes, TIAs can be caused by blood clots.

### What are blood-thinning medicines?

When our blood vessels are cut or become broken a blood clot will naturally form to plug the hole until the blood vessel heals. This stops our vital organs and tissues from losing too much blood.

Sometimes, a blood clot can form within a blood vessel and cause a blockage. If this happens in an artery leading to your brain, it can cause a stroke.

Blood-thinning medication reduces your blood's ability to clot and therefore reduces your risk of having a stroke.

Some strokes (around 15%) are caused by bleeding in or around the brain. This is called a haemorrhagic stroke. **Blood-thinning medicines should not be prescribed after a haemorrhagic stroke** as they can make this type of stroke worse. However, if you've had a haemorrhagic stroke, but you also have a very high risk of having an ischaemic stroke, your doctor may recommend that the benefits of taking blood-thinning medication would outweigh the risks.

There are two types of blood-thinning medicines: **antiplatelets and anticoagulants**. They work in different ways:

- **Antiplatelets**

There are small cells in your blood called platelets. When a blood vessel becomes damaged, these platelets stick together to form a blood clot. Antiplatelet drugs stop platelets from sticking together as easily, which reduces the risk of blood clots forming. Some common antiplatelet drugs are aspirin, dipyridamole and clopidogrel.

- **Anticoagulants**

Anticoagulants also stop your blood from being able to clot as easily. They do this by stopping your blood from producing certain proteins, which platelets need to help them form a clot. Anticoagulants also make existing blood clots more stable and less likely to break off and travel to other parts of your body. Some common anticoagulants are warfarin, dabigatran etexilate, rivaroxaban and apixaban.

## What medication will I be given?

### Initial treatment

**If you have had a TIA you are at an increased risk of having a stroke.** If you are diagnosed as having had a TIA or your doctor suspects that you may have had one, it's likely that you will be given **aspirin or clopidogrel** to help reduce your risk.

If you have a stroke and your brain scan confirms that it has been caused by a blood clot, you will probably be given a daily dose of aspirin, which you will need to take for up to two weeks.

### Long-term treatment

In the longer term, you will usually be prescribed a different blood-thinning medicine to reduce your risk of stroke.

If you have had a **TIA**, you could be given:

- clopidogrel
- aspirin
- dipyridamole and aspirin together
- dipyridamole alone, if you can't take aspirin.

If you have had a **stroke**, you could be given:

- clopidogrel
- dipyridamole and aspirin together
- dipyridamole alone, if you can't take clopidogrel or aspirin.

**Atrial fibrillation (AF)** is a type of irregular heartbeat. If you have AF you will usually be **prescribed an anticoagulant** instead. This is because AF increases the risk of blood clots forming in your heart. By taking an anticoagulant, your blood is less likely to clot and so your risk of stroke is reduced.

### Types of blood-thinning medication

#### 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 **300mg of aspirin a day to begin with**. However, in the long-term, it's likely you'll be prescribed clopidogrel, or aspirin and dipyridamole together, unless there's a reason why you can't take them. In this case, you may be given aspirin on its own.

Aspirin can sometimes irritate your stomach, but **taking it with food** or straight after you've eaten can help to prevent this. You should also make sure that you drink plenty of water so that you don't become dehydrated.

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 when 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.

The most common **side effects** that aspirin causes are **indigestion and bleeding**. In a small number of people it can cause bleeding in the stomach. If you notice unusual bleeding, such as coughing up blood or if there is blood when you go to the toilet, you should see your doctor immediately.

#### Risk of bleeding

Because blood-thinning medication affects the way your blood clots, all blood-thinning medicines 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, if you are concerned by your bleeding, you should contact your doctor straight away.

Other, less common side effects include wheezing or breathing difficulties, nausea, rashes and dizziness.

**Some people develop ulcers** when they take aspirin for a long time because it damages the lining of your stomach. Your stomach is lined with special mucus that protects it from the acid it produces to digest food. If the lining is damaged, your stomach acid can start to erode the tissue underneath and cause an ulcer. If you have a **burning or gnawing pain in your stomach** this could be a sign that you have an ulcer and you should **go to see your doctor**.

#### Allergic reactions

If you are feeling breathless, have a runny nose, severe rash, itching or swelling in your throat, mouth or face, these could be signs that you are allergic to some of the medicines you are taking. If you notice any of these signs you should **contact your doctor immediately**.

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### Clopidogrel

Clopidogrel is an antiplatelet drug. Usually, if you are prescribed clopidogrel after a stroke or TIA, the dose is **75mg a day**. It can be taken with or without food, and you should take it at the same time each day.

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, or if you are taking other medicines. Clopidogrel **interacts with other medicines** such as aspirin, warfarin and proton pump inhibitors.

The main **side effects** of clopidogrel are **bleeding and bruising**. 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**. If you are prescribed dipyridamole after a stroke or TIA the dose is usually **200mg twice a day**, together with 75mg a day of aspirin. There is a tablet called Asasantin, which combines both aspirin and dipyridamole in one.

If you cannot take aspirin, you will probably be given dipyridamole to take on its own. You should take one dipyridamole tablet in the morning and one in the evening and it's best to take them with food.

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 on becoming 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**. Headaches can sometimes be improved by having your dose of dipyridamole reduced for a period of time, and then raising it back to your full dose again later. Other, less common side effects, include diarrhoea, bleeding, rashes, muscle pain and fainting.

### Warfarin

If you have atrial fibrillation (AF) or other heart problems you may be prescribed warfarin to help reduce your risk of having a stroke. It works by changing the way your liver uses **vitamin K**. Vitamin K plays an important role in the blood-clotting process. 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** if you take warfarin, 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 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 to 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 should receive a pack from your GP or hospital** which contains a credit-card sized alert card, a yellow booklet called Oral Anticoagulant Therapy, and a record card. You should **carry your alert card at all times** in case of a medical emergency.

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. **If you experience bleeding you should seek medical attention** and have an urgent blood test. Less common side effects of warfarin include rashes, vomiting and diarrhoea.

Some **medicines 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 or ulcer medicines.

### 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. Some research has shown that gaining or losing weight can affect your INR, so talk to your anticoagulant specialist about any changes to your weight.

**Foods that are very high in vitamin K** and are most likely to affect your INR are **green, leafy vegetables** such as spring greens, 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.

**It's best to avoid cranberries and grapefruits, including their juices**, 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 factsheet 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.

### Dabigatran etexilate (Pradaxa)

Dabigatran etexilate is known by the brand name Pradaxa. It is a new type of anticoagulant drug. It is usually prescribed at a dose of **150mg or 110mg to be taken twice a day** with or without food.

Dabigatran etexilate is not suitable if you are pregnant or breastfeeding. It can also interact with other medicines, including aspirin, clopidogrel, heparin, rivaroxaban and verapamil. It also interacts with the herbal remedy St John's Wort, so tell your doctor or pharmacist if you're taking this.

The most common **side effect** of dabigatran etexilate is **bleeding**. See your doctor immediately if you notice unusual bleeding. Other side effects include diarrhoea, indigestion, nausea and stomach pain.

### Rivaroxaban (Xarelto)

Rivaroxaban is also known by the brand name Xarelto. It is a new type of anticoagulant. It is usually prescribed at a dose of **20mg a day** and **must be taken with food**. If you have kidney problems, you may be given a smaller dose of 15mg. It's best to take it at the same time each day.

Rivaroxaban is not suitable if you are pregnant or breastfeeding. It also **interacts with other medicines** such as aspirin, clopidogrel, warfarin and the herbal remedy

St John's Wort. Side effects of rivaroxaban include bleeding, constipation, diarrhoea, dizziness and fainting.

### Apixaban (Eliquis)

Apixaban is known by the brand name Eliquis. It is a new type of anticoagulant. Apixaban is usually prescribed at a dose of **5mg to be taken twice a day**. It can be taken with or without food. If you have kidney problems, you will usually be given a smaller dose of 2.5mg. It's best to take it at the same time each day.

Apixaban is not suitable if you are pregnant or breastfeeding. It also interacts with other medicines such as aspirin, clopidogrel, warfarin and the herbal remedy St John's Wort. The main **side effect** of apixaban is **bleeding**.

Edoxaban is a new anticoagulant drug. The National Institute for Health and Care Excellence is due to publish guidance so that it can be used in the UK from August 2015.

## Which anticoagulant medicine should I take?

The most commonly prescribed anticoagulant is warfarin, but it does require careful monitoring.

The advantage of other anticoagulants (dabigatran, rivaroxaban and apixaban) is that their effect on your blood is more stable and they are not affected by any foods that you eat, so they do not need to be monitored as carefully. **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 have AF, the NHS has produced an online tool to help you think about which is the best option for you. You can find this decision aid at: **[sdm.rightcare.nhs.co.uk/pda/stroke-prevention-for-atrial-fibrillation](http://sdm.rightcare.nhs.co.uk/pda/stroke-prevention-for-atrial-fibrillation)**

### What else do I need to know?

- We've not listed all of the possible side effects and drug interactions in this factsheet. **Always read the patient information leaflet that comes with your medication**, as this will have a full list.
- **Tell your doctor about any new medication you are taking.** Your pharmacist may also be able to give you advice about your medication.
- **Never stop taking your medication** if you feel unwell. Always contact your GP for advice – stopping medication suddenly can be dangerous. In a medical emergency, always call 999.

If you are taking an anticoagulant, you must always check any new medication you plan to take with your GP or pharmacist before taking it. You should also read the patient information leaflet that comes with your medication.

You should be given a patient alert card before you start taking an anticoagulant. **Always carry your alert card with you in case of an emergency.** You should also tell your dentist you are taking anticoagulant medication before you have any treatment.

### How can I find out more?

#### Talk to us

Our Stroke Helpline can give you information about stroke and tell you about services and support available in your local area. Call us on **0303 3033 100** (Monday to Friday, 9am–5pm) or email **[info@stroke.org.uk](mailto:info@stroke.org.uk)**

#### Get online

We have lots of information about stroke and how to prevent it on our website.

Go to **[stroke.org.uk](http://stroke.org.uk)**

### Other useful contacts

If you're looking for more information the following organisations may also be able to help. All are UK wide unless otherwise stated. Please note that details of these organisations are for information only. We are not recommending or endorsing anyone by including them in this factsheet.

#### Anticoagulation Europe

**Website:** [www.anticoagulationeurope.org](http://www.anticoagulationeurope.org)

**Tel:** 020 8289 6875

They provide information and support for people on anticoagulant medication.

#### Arrhythmia Alliance

**Website:** [www.heartrhythmcharity.org.uk](http://www.heartrhythmcharity.org.uk)

**Tel:** 01789 867 501

They support people with all types of heart arrhythmias.

#### Atrial Fibrillation Association

**Website:** [www.atrialfibrillation.org.uk](http://www.atrialfibrillation.org.uk)

**Tel:** 01789 867 502

They support people with AF, offering a range of leaflets on AF, treatments and types of medication, plus details of AF specialists.

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## NHS Choices

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

This website provides general information on all aspects of health including stroke, as well as information on different types of blood-thinning medicines.

## NHS Inform (Scotland)

**Website:** [www.nhsinform.co.uk](http://www.nhsinform.co.uk)

**Helpline:** 0800 22 44 88

This website provides information on health conditions, treatments and health services in Scotland.

## Glossary of terms

**Anticoagulant** = a type of drug that helps to stop your blood clotting as easily.

**Antiplatelet** = a type of drug that helps to stop your blood clotting as easily. They work in a different way to anticoagulants.

**Embolism** = something that is travelling in your blood stream that should not be, such as a blood clot or an air bubble.

**INR** = international normalised ratio. This is a measure of how quickly your blood clots.

**Ischaemic stroke** = a stroke that is caused by a blockage cutting off the blood supply to your brain.

**NSAIDs** = nonsteroidal anti-inflammatory drugs. These are used to relieve pain and inflammation. Common NSAIDs include aspirin, ibuprofen and naproxen.

**Platelets** = small cells in your blood that stick together to form a blood clot.

**Proton pump inhibitors** = a type of drug that is used to treat stomach ulcers.

**Thrombus** = a blood clot.

**TIA** = transient ischaemic attack. A TIA is the same as a stroke, except that the symptoms last for a short amount of time and no longer than 24 hours.

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## About our information

We are committed to producing clear, accurate and unbiased information for stroke survivors and their families. To produce our publications we use information from professional bodies and other reliable sources including NICE, SIGN, Royal College of Physicians and medical journals. To request a list of sources used in this factsheet email [feedback@stroke.org.uk](mailto:feedback@stroke.org.uk)

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