

Transient ischaemic attack (TIA)

A transient ischaemic attack (TIA) is similar to a stroke, but the symptoms do not last as long. However, it should still be treated as a medical emergency. This factsheet explains how to recognise a TIA using the FAST test, the assessments and treatments you should have afterwards and what you can do to reduce your risk of a further TIA or stroke.

A transient ischaemic attack (TIA) is often called a mini stroke or mild stroke. **The symptoms are very similar to those of a full-blown stroke, but they only last for a short time**, anything from a few minutes up to 24 hours. If you have had a TIA you will recover completely within about a day. If your symptoms have lasted longer than 24 hours, you may have had a stroke rather than a TIA.

A TIA is a sign that part of your brain is not getting enough blood and you are at risk of having a stroke in the future. Each year around 46,000 people in the UK have their first TIA. There is no way of telling whether you are having a TIA or stroke when the symptoms first start. **If you think you or someone you know is having a TIA, it is a medical emergency so call 999.**

Though the symptoms may be caused by something else such as low blood sugar, migraine or an epileptic fit, the sooner they are investigated, the sooner a doctor will be able to say whether or not it was a TIA.

What are the symptoms of a TIA?

The FAST test helps people to quickly recognise the key symptoms of a TIA or stroke.

F **acial weakness**
Can the person smile?
Has their mouth or eye drooped?

A **rm weakness**
Can the person raise both arms?

S **peech problems**
Can the person speak clearly and understand what you say?

T **ime to call 999**

A stroke is a medical emergency.
If you see any one of these signs, seek immediate medical attention.

Other symptoms of a TIA or stroke may include:

- sudden weakness, numbness, clumsiness or pins and needles on one side of your body, for example in your arm, leg or face

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- sudden loss of vision or blurred vision in one or both eyes
- sudden memory loss or confusion
- slurred speech or difficulty finding some words
- sudden dizziness, unsteadiness or a sudden fall, especially with any of the other symptoms
- a sudden, severe headache.

What causes a TIA?

An adequate blood supply is vital for our brains to function properly. This blood supply brings oxygen, glucose and other nutrients to our brain cells, and removes waste products such as carbon dioxide.

During a TIA, one of the small blood vessels in the brain becomes blocked, usually by a **blood clot**. When this blockage occurs, the blood flow to your brain is disrupted. With a TIA, the blockage is temporary and the blood supply soon returns to normal, so you recover quickly. With a full-blown stroke, the blood flow to your brain is disrupted for much longer. Without a constant supply of blood, your brain cells begin to die.

Sometimes a TIA occurs when a blood clot forms in another part of the body and then travels in the bloodstream and causes a blockage in a blood vessel in the brain. This is called an embolism. Rarely, symptoms of a TIA can be due to bleeding (haemorrhage) in the brain.

TIA in the eye

Occasionally a TIA happens that only affects

your eye. This happens when a blood vessel leading directly to one of your eyes becomes blocked and causes a temporary loss of vision in that eye. This is sometimes called amaurosis fugax or transient monocular blindness.

What tests will I have?

The doctor will ask you some questions about your symptoms and your general health to find out if you are at risk of a stroke or TIA, and to rule out other conditions. If they suspect you have had a TIA, you will also be given a **score of your risk of having a stroke**. This is done using a system called the ABCD² scale. It stands for age, blood pressure, clinical features (symptoms), duration of symptoms (how long they have lasted for) and diabetes. Risk scores range from 0 (low risk) to 7 (high risk):

- A - age (1 point if you are aged 60 or over)
- B - blood pressure (1 point if it is 140/90mmHg or higher)
- C - clinical features (2 points for weakness on one side; 1 point for speech problems without weakness)
- D - duration of symptoms (2 points for 60 minutes or longer; 1 point for 10-59 minutes)
- 1 point is added if you have diabetes.

If your risk of stroke is assessed as high (4 or above) after a TIA, you should be referred on to a **specialist** (a stroke physician or neurologist) and, wherever possible, receive an MRI brain scan. The referral and brain scan should both

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be **within 24 hours** of your symptoms. If your score is low (3 or below), you should be seen by a specialist within seven days. This will usually be at a specialist TIA clinic.

TIA clinics are usually run in hospitals. In Scotland they may be called neurovascular clinics. In some areas, particularly rural areas, telemedicine is sometimes used. This means that stroke specialists can carry out their consultations using a video link, making sure that everyone can be assessed and treated as quickly as possible.

Following a TIA, you may have some or all of the following tests:

- a brain scan, either an MRI (magnetic resonance imaging) scan or CT (computed tomography) scan
- your blood pressure measured
- blood tests to check how your blood clots, and your blood sugar and cholesterol levels
- an electrocardiogram (ECG) to look for an irregular heart rhythm
- a chest x-ray to rule out any other health problems
- an ultrasound (Doppler scan) of the carotid arteries in your neck to check the blood flow through them. This should happen within one week of your symptoms if the specialist thinks your carotid artery may be partially blocked
- an echocardiogram to check for any heart disease.

What treatments are available?

If the specialist confirms you have had a TIA, you will be given treatment to reduce your risk of having another TIA or stroke.

The treatment you are given will depend on any specific risk factors you have.

As well as being advised to make changes to your lifestyle, (see *What can I do to lower my risk?* section), it is likely that you will be prescribed at least one of the following medications:

- blood-thinning medication
- high blood pressure medication
- high cholesterol medication.

Blood-thinning medication

After a TIA or a stroke, many people are prescribed drugs to reduce the risk of clots forming in their blood, reducing their risk of stroke.

The majority of people will be given **aspirin** (300mg) or **clopidogrel** (300mg) immediately.

In the longer term, you should be prescribed:

- clopidogrel, 75mg daily or
- aspirin, 75mg daily plus dipyridamole, 200mg twice daily (if you cannot take clopidogrel) or
- aspirin, 75mg daily (if you cannot take clopidogrel or dipyridamole) or
- dipyridamole, 200mg twice daily (if you cannot take clopidogrel or aspirin).

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If you have had a TIA due to a **blood clot from your heart** (often due to an irregular heart rhythm called atrial fibrillation), you are likely to be prescribed a different type of medication called an anticoagulant. The most commonly used drug is **warfarin**, but there are now other newer medications available such as dabigatran etexilate and rivaroxaban.

See our factsheet *F11, Blood-thinning medication after stroke* for more information.

Medication for high blood pressure

After a TIA, you will usually be given medication to reduce your blood pressure to under 130/80mmHg. You may have further tests, for example urine tests and an echocardiogram, so that the doctor can decide on the best blood pressure medication for you.

There are many different types of medication available and it may take a while to find the right drug at the right dose to suit you. If you have any problems with the drug you are taking, **talk to your doctor**, who may be able to change your dose or try a different one. Many people take two or three different types of blood pressure medication to control their blood pressure. See our factsheet *F6, High blood pressure and stroke* for more information.

Medication for high cholesterol

If you have had a TIA, you should be prescribed a **statin** (for example simvastatin, 40mg daily). This will help to lower your cholesterol level and reduce your risk of a further TIA or stroke, regardless of what your cholesterol level is. The aim will be to reduce your total cholesterol level to under 4mmol/L

or your LDL cholesterol level (sometimes called 'bad' cholesterol) to less than 2mmol/L. These levels will be monitored with blood tests. You should also be given advice on how to **reduce the amount of fat in your diet**.

If you are worried about the side effects of your medication, talk to your GP. There is usually an alternative you can try instead. Never stop taking your medication without talking to your doctor first.

Will I need surgery?

If an ultrasound scan shows the arteries in your neck (carotid arteries) are partially blocked, you may be advised to have an operation called a **carotid endarterectomy**. This should happen as soon as possible, ideally within one week of your TIA, to lower your risk of having a stroke.

Fatty material may have built up on the walls of one or both of your arteries, and blood cells and other debris may have become stuck to the surface. This makes the artery much narrower, and debris can break off and be carried in the bloodstream to the brain where it could cause a blockage (a stroke).

Carotid endarterectomy involves removing the blockages and part of the lining of the damaged artery to improve the blood flow and reduce the risk of debris breaking off. It is recommended for people who have a severe, but not total blockage. Though the results are usually very good, carotid endarterectomy carries with it a small risk of stroke. As with any major surgical procedure, discuss the situation with your doctor before making a decision.

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Carotid endarterectomy is the most established and proven procedure to remove blockages in the carotid arteries, but there are two alternatives, **carotid stenting** and **carotid angioplasty**. These operations are carried out under local anaesthetic and are less invasive.

See our factsheet *F40, Carotid artery disease* for more information on all these procedures.

What can I do to lower my risk?

Anyone who has had a TIA is at a higher risk of having another TIA or stroke. Your risk is highest within the first few weeks, and reduces over time. There are several things you can do yourself to reduce your risk:

- **Give up smoking.** Smoking makes your arteries narrower and your blood more likely to clot. Giving up can be difficult, so ask your GP about attending a stop-smoking clinic or for other help.
- **Eat at least five portions of fruit and vegetables each day.** There is some evidence that a diet rich in fruit and vegetables, which contain protective substances called antioxidants, reduces your risk of stroke by protecting blood vessel walls from damage.
- **Reduce your salt intake.** Salt raises blood pressure. Don't add salt to your food and avoid processed foods that contain a lot of salt.
- **Reduce the amount of fat you eat.** Try to reduce the amount of fat you use in cooking and stick to vegetable, seed and nut oils, rather than margarine and butter. Avoid fatty foods such as pies, pastries and ready meals.
- **Reduce your sugar intake.** Natural sugars found in fruit are healthy, but those added to food and drinks can be high in calories and often have no nutritional benefit. Always check the label; more than 15g of sugar per 100g is a high level.
- **Reduce your alcohol intake and avoid binge drinking.** Drinking too much alcohol can raise your blood pressure and increase your risk of stroke. The current recommended guidelines are two to three units for women and three to four units for men per day. (A standard glass of wine is about two units, a single measure of spirit is one unit and a pint of five per cent beer or lager is three units.)
- **Be more active.** Regular exercise can reduce your risk of stroke by lowering your blood pressure, helping you to lose weight and altering the balance of fats in your blood. Half an hour of activity five days a week is enough to reduce your risk of stroke. This can be one 30 minute session or several shorter sessions a day.
- **Take any medication you are prescribed** as directed by your doctor, and have regular check-ups.

We have publications with more information about these topics. Contact us for copies.

Useful organisations

All organisations listed are UK wide unless otherwise stated.

Stroke Association

Stroke Helpline: 0303 3033 100

Email: info@stroke.org.uk

Website: stroke.org.uk

Contact us for information about stroke, emotional support and details of local services and support groups.

Atrial Fibrillation Association (AFA)

Tel: 01789 451 837

Website: www.atrialfibrillation.org.uk

Provides information and support for people with atrial fibrillation (AF).

Blood Pressure Association

Tel: 0845 241 0989

Website: www.bpassoc.org.uk

Has a wide range of information on high blood pressure including treatments and lifestyle advice.

British Heart Foundation (BHF)

Heart Helpline: 0300 330 3311

Website: www.bhf.org.uk

Provides information on heart conditions and maintaining a healthy lifestyle.

Diabetes UK

Diabetes Careline: 0845 120 2960

Website: www.diabetes.org.uk

Information and support about living with diabetes, including details of local support groups and healthy eating ideas.

Heart UK - The Cholesterol Charity

Helpline: 0845 450 5988

Website: www.heartuk.org.uk

Information on lifestyle and diet to reduce cholesterol, inherited high cholesterol and cholesterol-lowering medications. Their helpline is staffed by specialist nurses and dietitians.

Disclaimer: The Stroke Association provides details of other organisations for information only. Inclusion in this factsheet does not constitute a recommendation or endorsement.

Glossary of terms

ABCD² = a scale to predict the risk of a stroke following a TIA.

Carotid angioplasty = an operation to widen the carotid artery to reduce the risk of stroke.

Carotid endarterectomy = operation to remove the blockages and inner lining in an artery to reduce the risk of stroke.

Carotid stenting = an operation to widen the carotid artery to reduce the risk of stroke.

CT = computerised tomography (a type of brain scan).

Doppler scan = an ultrasound scan.

Echocardiogram = a test that uses sound waves to scan your heart.

Electrocardiogram (ECG) = a test that records the electrical impulses produced when the heart beats.

Embolism = something travelling within the bloodstream which should not be present, such as a blood clot or fat globule.

Haemorrhage = a bleed.

Ischaemic = interruption to blood flow caused by a blockage.

MRI = magnetic resonance imaging (a type of brain scan).

TIA = transient ischaemic attack.

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For sources used, visit stroke.org.uk

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