

View this article online at: [patient.info/transient-ischaemic-attack](https://patient.info/transient-ischaemic-attack)

# Transient Ischaemic Attack

---

A **transient ischaemic attack** (TIA) causes symptoms similar to a stroke. Some people call a TIA a mini-stroke. With a TIA, the symptoms go completely within 24 hours (whilst with a stroke, the symptoms are usually more permanent). The most common cause is a tiny blood clot in a blood vessel in the brain.

Call 999/112/911 if you have symptoms of a stroke or TIA - act FAST. Unless the symptoms get better within a few minutes you need emergency treatment, as the cause might be a stroke rather than a TIA.

It is important that you don't wait too long to see if the symptoms get better on their own. If your symptoms have got better quickly and completely, you need to arrange to see your GP urgently for further investigations and treatment.

---

What is a transient ischaemic attack?

A transient ischaemic attack (TIA) is a set of symptoms that lasts a short time and occurs because of a temporary lack of blood to part of the brain. It is sometimes called a mini-stroke. However, unlike a stroke, the symptoms are short-lived and soon go. This means that you recover fully, back to normal. (The word ischaemic means a reduced supply of blood and oxygen to a part of the body.)

## What is the cause of a transient ischaemic attack?

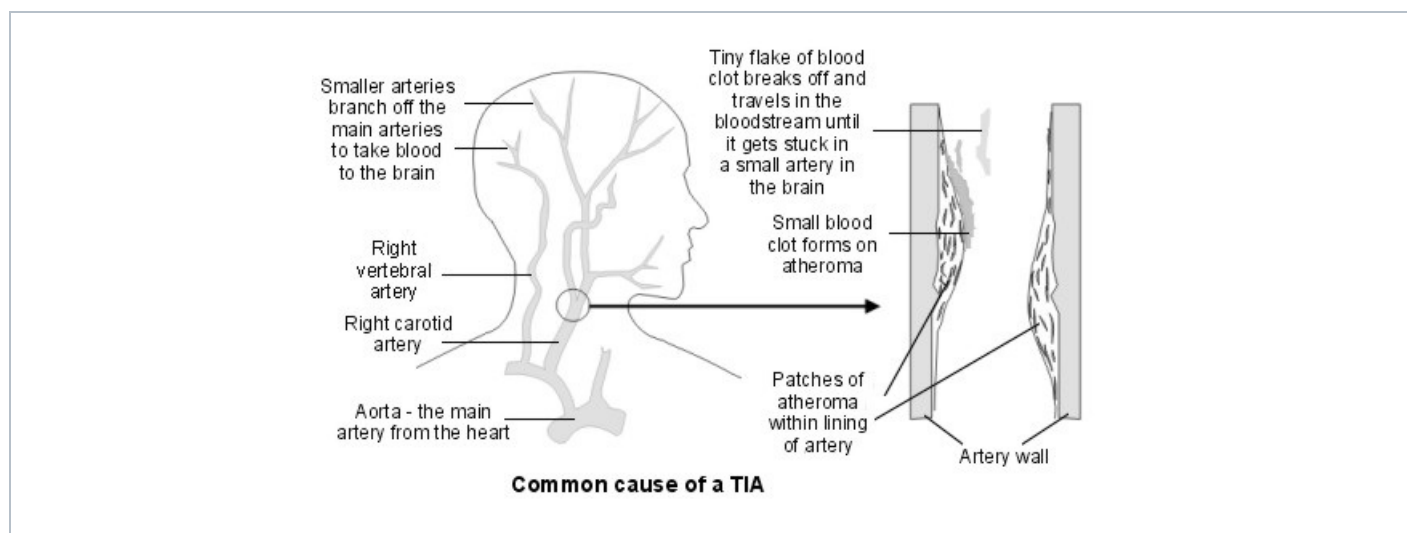
In most cases, a TIA is caused by a tiny blood clot that becomes stuck in a small blood vessel (artery) in the brain. This blocks the blood flow, and a part of the brain is starved of oxygen. The affected part of the brain is without oxygen for just a few minutes, and soon recovers. This is because the blood clot either breaks up quickly, or nearby blood vessels are able to compensate.

There are other uncommon causes of a TIA. These include:

- Blood clotting problems.
- Tiny bleeds into the brain.
- Blood disorders such as polycythaemia and sickle cell anaemia where the blood is very thick.
- Spasm of a small artery in the brain.
- Other uncommon problems of the brain or its blood vessels.

However, these are not dealt with further in this leaflet.

## Where does a blood clot come from to cause a transient ischaemic attack?



The common site for a small blood clot to form is on a patch of atheroma in a main artery in the neck. The carotid and vertebral arteries are the main arteries in the neck which take blood to the brain. Either the small blood clot may break off from the atheroma, or a tiny part of the blood clot may break off. This is then carried in the bloodstream, towards the brain. The arteries become progressively narrower and the clot travels until it becomes stuck. When it becomes stuck, it blocks the artery and stops the blood supply.

In some cases a small clot forms in a heart chamber and is carried in the bloodstream to the brain. This can happen with a condition called atrial fibrillation - often known by many people as an irregular heartbeat. [See separate leaflet called Atrial Fibrillation for more details.](#)

A small blood clot is likely to break up quickly when it gets stuck. Therefore, no permanent damage is done to the brain during a TIA, and symptoms soon go.

A stroke occurs when part of the brain tissue dies (permanent brain damage) due to a lack of oxygen. Oxygen is needed for cells in the body to live and work. The blood carries oxygen from the lungs to the tissues (such as the brain). The most common type of stroke happens when the blood supply to that part of the brain is suddenly, and completely, cut off by a blood clot (an ischaemic stroke). It happens in the same way as a TIA, the difference being that the blockage is permanent. [See separate leaflet called Stroke for more details.](#)

## Why does a blood clot form in a blood vessel or heart chamber?

A blood clot can form if platelets stick to a patch (plaque) of atheroma.

- Platelets are tiny particles in the blood which help the blood to clot when a blood vessel (an artery or vein) is cut.
- Atheroma plaques are like fatty lumps that develop within the inside lining of arteries (a bit like the furring up with scale that occurs inside your kettle).
- Platelets sometimes stick on to an atheroma plaque inside an artery and form a clot.

A common site for atheroma to develop and a blood clot to form, is in a large artery in the neck. A blood clot may also form as a complication of some heart conditions, such as atrial fibrillation. [See separate leaflet called Atheroma for more details.](#)

## What are the symptoms of a transient ischaemic attack?

Symptoms of a TIA are temporary (transient). They develop suddenly and usually peak in less than a minute. The duration of symptoms varies; however, symptoms usually go within an hour (typically within 2-15 minutes). Sometimes symptoms last up to 24 hours. The symptoms that develop depend on which part of the brain is affected. Different parts of the brain control different parts of the body. Therefore, symptoms may include one or more of the following:

- Weakness or clumsiness of a hand, arm, or leg.
- Difficulties with speech.
- Difficulties with swallowing.
- Numbness or pins and needles of a part of the body.
- Brief loss of vision, or double vision.

**Note:** headache is **not** a typical feature of a TIA (or of a stroke).

## A quick guide for the general public to remember: act FAST

Both a stroke and a TIA are medical emergencies and need immediate medical attention. As a way of helping the general public become more aware of the symptoms of a stroke or a TIA, a simple symptom checklist to remember has been devised and publicised. This is to think of the word **FAST**. That is:

**F**acial weakness. Has their face fallen on one side? Can they smile?

**A**rm weakness. Can the person raise both arms and keep them there?

**S**peech disturbance. Is their speech slurred?

**T**ime. Time to call 999/112/911 if you see **any single one** of these signs.

**The aim is to get people to think of stroke and TIA as emergencies. So, rather like a heart attack, they are thought of as brain attacks.** The FAST checklist does not cover every possible symptom of stroke or TIA. However, it is easy to remember. It is estimated that about 8 or 9 in 10 people with a stroke or TIA will have one or more FAST symptoms.

**If you have symptoms of a stroke, you need to be seen in a hospital immediately** (even if you later turn out to have a different problem, or a TIA).

Occasionally, there are exceptions to this rule. Generally, however, these are only in people who are already extremely unwell or perhaps terminally ill. For those people, transfer to a hospital would not be in their best interests.

## How common is a transient ischaemic attack?

The exact number of cases is not known. This is because many people who have a TIA do not report it to their doctor, as the symptoms go away. The importance of the symptoms is therefore not recognised. However, it is estimated that a first ever TIA occurs in about 50 per 100,000 people each year in the UK. About 1 in 5 people who have a stroke have had a TIA in the past.

## How serious is a transient ischaemic attack?

In itself, a TIA does no harm or permanent damage to the brain, and the symptoms soon go. However, a TIA indicates that you have a tendency to form blood clots in your blood vessels or heart. Therefore, if you have a TIA you have a higher-than-average risk of developing a larger blood clot which may cause a stroke or heart attack in the future. [See separate leaflet called Heart Attack \(Myocardial Infarction\) for more details.](#)

- **Without treatment** - about 1-2 in 10 people who have a TIA have a stroke within the following year. This is much higher than the average risk of someone of the same age having a stroke who has not had a TIA. The most risky time is within the first month following a TIA - which is why treatment is advised as soon as possible after you have a TIA. Also, within a year of having a TIA, about 3 in 100 people have a heart attack (myocardial infarction) due to a blood clot in a blood vessel of the heart.
- **With treatment** - the above risks are reduced. For example, in one research study published in 2007, the conclusion stated ... "Early initiation of existing treatments after TIA or minor stroke was associated with an 80% reduction in the risk of early recurrent stroke."

**Therefore, see your GP urgently if you suspect that you have had a TIA**

A scoring system is often used to assess your risk of stroke early after having a TIA. It scores things such as your age, blood pressure and whether you have diabetes. It also looks at the symptoms you had and how long they lasted for. People with a high score or who have repeated episodes of TIA are at the highest risk of a stroke in the following 48 hours. This is especially the case if you have had two or more TIAs in the previous week. In this situation, the TIAs can be thought of as the alarm bells, warning of an impending problem. Admission to hospital is the best plan in these circumstances. Hospital admission is also advised if your symptoms of TIA have happened and you are taking warfarin (see below for more information).

People with lower scores can usually be seen urgently in a specialist TIA clinic. Your GP can refer you to one of these. Tests should be carried out quickly (within days of the TIA event) and treatment started promptly.

## What tests are usual after a transient ischaemic attack?

After a suspected TIA, you will normally be advised to have several tests. Some of these will be done in a hospital, and others can be done in your GP surgery. Where they happen depends on whether you have been referred immediately (as an emergency) into hospital, or whether your GP is referring you to a TIA clinic.

The tests usually done are:

- A scan of your brain. This will be either a **CT scan** or an **MRI scan**. This is done to make sure that you have not had a stroke rather than a TIA. In a few cases, a stroke can occur with complete and quick recovery. The scan is also done to make sure there are no other brain problems (for example, a brain tumour) that may have given you symptoms that mimic a TIA. If you were already taking warfarin when you had the symptoms of a TIA, you need an urgent brain scan to make sure that you haven't had a bleed (haemorrhage) in the brain. This would be called a haemorrhagic stroke (or intracerebral bleed).
- An **ultrasound scan of your carotid arteries**. This is to see if you have severe narrowing of one of these arteries, caused by atheroma. Atheroma plaques are like fatty lumps that develop within the inside lining of arteries. Narrowing (stenosis) of the carotid arteries is a risk factor for TIA and stroke.
- An **electrocardiogram (ECG)** to check for abnormal heart rhythms such as an irregular heartbeat (atrial fibrillation). This might be done at your GP surgery.
- Blood tests. These might be done at your GP surgery. Your blood will be tested to make sure that you don't have diabetes or high cholesterol (these are risk factors for TIA and stroke). It will also be tested to make sure that you are not lacking in iron (are anaemic) and do not have kidney problems. Other blood tests are sometimes done; however, these are the main important ones.
- Blood pressure measurement. Although this is not strictly speaking a test, it is important that your blood pressure should be checked. High blood pressure is a risk factor for TIA and stroke and it needs to be treated.

The main aim of these tests is:

- To check for any underlying problems that might have caused the TIA.
- To check if you have a problem that increases your risk of blood clots forming.
- To make sure that you haven't had a stroke rather than a TIA.

## What is the treatment if you have a transient ischaemic attack?

The aim of treatment after a TIA is to reduce your risk of having a stroke, heart attack, or further TIAs. Aspects of treatment include the following:

- Medication to reduce the risk of blood clots forming.
- To reduce any risk factors that you may have.
- Surgery (but this is only suitable in some cases).

### Medication

Medication reduces the risk of further blood clots forming.

#### Antiplatelet medication

Platelets are tiny particles in the blood which help blood to clot. **Antiplatelet medication** is usually advised if you have had a TIA. Antiplatelet medication reduces the stickiness of platelets. This helps to prevent blood clots forming inside arteries, which helps to prevent a further TIA or a stroke.

Immediately after a TIA, you will probably be started on a daily dose of aspirin until your hospital investigations have been completed. If you were already taking low-dose (75 mg) aspirin, you will usually be advised to continue it at this dose.

**Aspirin** is usually given immediately if a TIA or stroke is suspected. The most commonly used long-term antiplatelet medicine following a stroke or TIA is **clopidogrel**.

Sometimes medication to protect your stomach lining may be used alongside aspirin. This might be the case if you have a lot of indigestion, especially with anti-inflammatory medicines (such as aspirin and ibuprofen). It may also be the case if you are considered as being at high risk for stomach problems caused by aspirin.

#### Oral anticoagulants

An oral anticoagulant medicine (**warfarin**, **dabigatran**, **apixaban**, **edoxaban** or **rivaroxaban**) is usually advised if you have a TIA where the source of the blood clot is from your heart (usually if you have the condition atrial fibrillation). Oral anticoagulant medicines work by reducing some of the chemicals in the blood that are needed to make blood clot. The aim is to get the dose just right so the blood is 'thinner' than normal (less able to form clots) but not so much as to cause bleeding problems.

See separate leaflet called **Preventing Stroke when you have Atrial Fibrillation** for more information.

### Reducing risk factors

To try to lessen the chances of having a TIA or stroke, it is important to reduce your risk factors. The risk factors are the things that make the build-up of atheroma in blood vessels (arteries) happen more readily. Atheroma is a bit like the scale that furs up the inside of your kettle. Atheroma increases your risk of having serious problems such as TIA, stroke and heart attacks. The risk factors that can be changed are:

- **Smoking.** If you smoke, you should **make every effort to stop**. The chemicals in tobacco are carried in your bloodstream and can damage your arteries. If you smoke, stopping smoking can greatly cut your risk of having a stroke (and also many other diseases such as heart attacks and lung cancer).
- **High blood pressure.** Make sure your blood pressure is checked at least once a year. If it is high it can be treated. **High blood pressure usually causes no symptoms** but can be damaging to the arteries. If you have high blood pressure, treatment of the blood pressure is likely to have the greatest effect on reducing your risk of having a stroke. Even if your blood pressure is normal, you may be considered for treatment with an angiotensin-converting enzyme (ACE) inhibitor (such as perindopril) and/or a thiazide medication (such as indapamide). If you have diabetes, tight blood pressure control is essential.
- **If you are overweight or obese losing weight is advised.** This can be achieved by eating fewer calories, eating more healthily and exercising more. If you are obese and you are finding it difficult to lose weight through these lifestyle measures, it is worth discussing this further with your GP. Some areas have weight loss programmes, some people benefit from seeing a dietician and others lose weight by taking weight loss medication. In extreme cases, weight loss (bariatric) surgery may be advised if all other methods have failed.
- **A high cholesterol.** High cholesterol levels can be lowered with medication, usually a statin. If you have had a stroke, a statin should be started whether or not your cholesterol level is high. This is because it reduces your overall risk of blood vessel (vascular) diseases - such as stroke, TIA and heart attack. See separate leaflets called **Cholesterol** and **Statins and Other Lipid-lowering Medicines** for more details.
- **Inactivity.** **Lack of physical activity** increases your risk of developing atheroma. You should aim to do some moderate physical activity on most days of the week for at least 30 minutes. Examples of suitable activities include brisk walking, swimming, cycling, dancing and gardening. Ask your doctor or nurse if you are not sure which exercises and how much exercise would be best for you.
- **Diet.** You should aim to eat a healthy diet. Briefly, **a healthy diet means:**
  - AT LEAST five portions, or ideally 7-9 portions, of **a variety of** fruit and vegetables per day.
  - A THIRD OF MOST MEALS should be starch-based foods (such as cereals, wholegrain bread, potatoes, rice, pasta), plus fruit and vegetables.
  - NOT MUCH fatty food such as fatty meats, cheeses, full-cream milk, fried food, butter, etc. Use low-fat, mono-unsaturated or polyunsaturated spreads.
  - INCLUDE 2-3 portions of fish per week. At least one of these should be oily (such as herring, mackerel, sardines, kippers, pilchards, salmon, or **fresh** tuna).
  - If you eat meat it is best to eat lean meat, or poultry such as chicken.
  - If you do fry, choose a vegetable oil such as sunflower, rapeseed or olive.
  - Try not to add salt to food. Limit foods which are salty.
- **Alcohol.** **Do not drink more than the recommended safe limits.** That is, men should drink no more than 14 units of alcohol per week, no more than four units in any one day, and have at least two alcohol-free days a week. Women should drink no more than 14 units of alcohol per week, no more than three units in any one day, and have at least two alcohol-free days a week. Pregnant women should not drink at all. One unit is in about half a pint of normal-strength beer, or two thirds of a small glass of wine, or one small pub measure of spirits.
- **Diabetes** is a risk factor. **If you have diabetes**, treatment to keep your blood sugar as near normal as possible is important.

See separate leaflet called **Preventing Cardiovascular Diseases** for more details.

## Surgery

About 1 in 20 people with a TIA have severe narrowing of the carotid artery (carotid stenosis) due to a large build-up of atheroma. It might be suspected by listening with a stethoscope to the blood flow in your neck. Blood flow through a narrowed artery is turbulent and this causes a noise called a bruit (carotid bruit). There is a good chance that you have significant narrowing of the carotid arteries if you have a carotid bruit. A type of ultrasound scan of the neck (called a duplex ultrasound scan) can diagnose this narrowing accurately. There are also other types of scans which can be done for the same reason.

Surgery to remove this narrowing caused by atheroma may be an option in *some people*. It depends on several factors, such as:

- How bad the narrowing is.
- Whether you have had symptoms (such as a TIA or stroke).
- What your general fitness is like (in terms of the risks of having major surgery).

The National Institute for Health and Care Excellence (NICE) guidelines recommend that if you have a TIA, you should have a scan of the carotid arteries within a week of the event and be operated on within another week. Although the best medical evidence suggests that urgent surgery prevents strokes, in reality this short timeframe for surgery is not always achieved.

The main surgical procedure is called **carotid endarterectomy** (another procedure called carotid artery angioplasty and stenting is sometimes used for blocked carotid arteries).

Endarterectomy is an open operation. This means the surgeon has to open up the artery (via a cut in the skin) to remove the atheroma inside the artery. Angioplasty is a less invasive operation. Usually it is done by threading a small wire up to the neck from a puncture in the groin (in the femoral artery). In simple terms, it is a bit like using a pipe cleaner to clean and unblock a blocked pipe. A stent is a tiny mesh tube that folds up telescopically. It can be inserted into the carotid artery to hold the walls of the artery open and to prevent blockage.

A medical study showed that the angioplasty and stenting procedure leads to more short-term (within 30 days) complications, compared with carotid endarterectomy. The complications included stroke and death. At present, only carotid endarterectomy is recommended after TIA or stroke. Further medical trials are being performed comparing the two operations.

Successful surgery reduces the risk of a future stroke by about a half. However, like all operations, there is a small risk from the operation itself. One of these risks is of causing a stroke. A specialist (vascular surgeon) will advise on the pros and cons of the different operations if you are found to have severe narrowing of a carotid artery.

## Transient ischaemic attack and driving

If you've had, or currently have, a medical condition or disability that may affect your driving you must tell the Driver and Vehicle Licensing Agency (DVLA). The DVLA has a guide to the 'Medical Standards of Fitness to Drive'. This includes a TIA.

Following a TIA you will have to stop driving for a specified period, often at least a month. This will depend on the type of driving licence you have. The rules are different if you drive lorries or buses. So-called 'Group 2' drivers have much higher medical standards to reach. Return to driving depends on a satisfactory recovery to normal or minimal nerve (neurological) impairment. Every individual case is different. This is why it is important to obtain advice directly from the DVLA (see below).

You should also contact your motor insurance company for advice.

## Other advice

If you have had a TIA or stroke and plan to travel, you need to ensure that you have adequate medical cover on your travel insurance. This will mean informing your insurer of your pre-existing medical conditions. Never withhold medical information or fail to declare medical illnesses - if you do so, your insurance may be invalidated. Invalid insurance leaves you open to having to pay full costs (often extremely high) if you need to seek medical attention when abroad.

## Further reading & references

- [Management of patients with stroke or TIA: assessment, investigation, immediate management and secondary prevention](#); Scottish Intercollegiate Guidelines Network - SIGN (December 2008)
- [Stroke and transient ischaemic attack in over 16s: diagnosis and initial management](#); NICE Clinical Guideline (July 2008)
- [Stroke Guidelines](#); Royal College of Physicians, 2016
- [Stroke and TIA](#); NICE CKS, December 2013 (UK access only)

**Disclaimer:** This article is for information only and should not be used for the diagnosis or treatment of medical conditions. Patient Platform Limited has used all reasonable care in compiling the information but makes no warranty as to its accuracy. Consult a doctor or other healthcare professional for diagnosis and treatment of medical conditions. For details see our [conditions](#).

Author: Dr Colin Tidy	Peer Reviewer: Dr John Cox	
Document ID: 4443 (v43)	Last Checked: 15/02/2017	Next Review: 15/02/2020

View this article online at: [patient.info/transient-ischaemic-attack](http://patient.info/transient-ischaemic-attack)

Discuss Transient Ischaemic Attack and find more trusted resources at [Patient](#).

---

## Ask your doctor about Patient Access

---

- 🔑 Book appointments
- 🔑 Order repeat prescriptions
- 🔑 View your medical record
- 🔑 Create a personal health record (iOS only)



Simple, quick and convenient.  
**Visit [patient.info/patient-access](http://patient.info/patient-access)  
or search 'Patient Access'**