

Transient Ischemic Attack (TIA)

A transient ischemia attack (TIA) causes symptoms similar to a stroke - but they last less than 24 hours. The cause is usually a tiny blood clot. Aspirin is the usual treatment following a TIA. This reduces the risk of a stroke or heart attack in the future. Other medicines, and / or surgery, are advised in some cases.

What is a transient ischemic attack (TIA)?

A transient ischemic attack (TIA) is a set of symptoms, which last a short time, and is due to a temporary lack of blood to part of the brain. It is sometimes called a 'mini stroke'. However, unlike a stroke, the symptoms are transient and soon go.

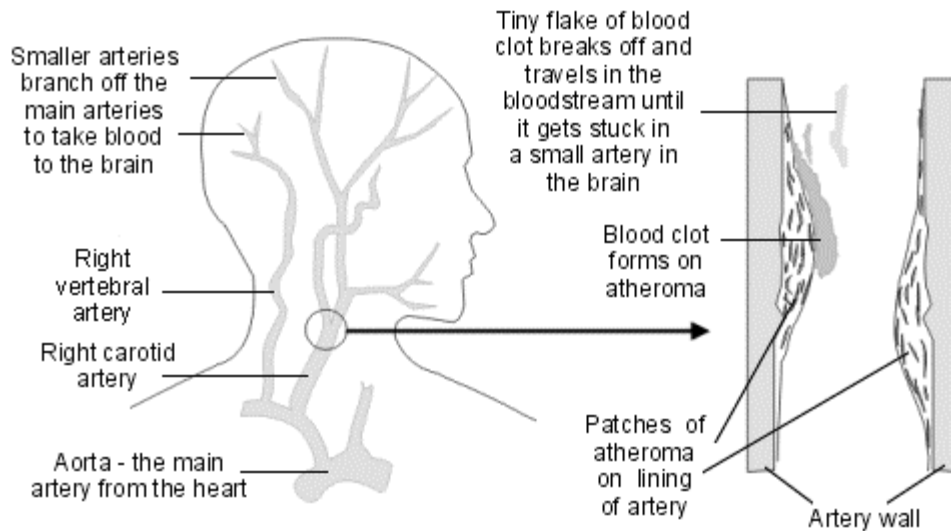
(Ischemic means a reduced blood and oxygen supply to a part of the body.)

What is the cause of a transient ischemic attack (TIA)?

A TIA is usually 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 clots either break up quickly, or nearby blood vessels are able to compensate.

(Rare causes of TIAs include blood-clotting problems; tiny bleeds into the brain, and other problems of the brain or its blood vessels. These are not dealt with further in this leaflet.)

Where does a blood clot come from to cause a TIA?



A transient ischaemic attack (TIA)

The common site for a blood clot to form is on a patch of atheroma in a main blood vessel in the neck. (Atheroma is explained below.) The carotid and vertebral arteries are the main arteries in the neck, which take blood to the brain. A tiny part of the blood clot breaks off and travels up one of these arteries until it becomes stuck in a smaller artery in the brain.

In some cases a small clot forms in a heart chamber and is carried in the bloodstream to the brain.

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.

- Atheroma plaques are like fatty lumps that develop on the inside lining of arteries.
- Platelets are tiny particles in the blood, which help the blood to clot when a blood vessel is cut.
- Platelets sometimes stick onto 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. For example, people with a condition called 'atrial fibrillation' have a turbulent (rough) flow of blood in the heart, which may cause a small blood clot to form.

What are the symptoms of a TIA?

Symptoms of a TIA are transient (temporary). They develop suddenly, and usually go within 30-60 minutes. Sometimes symptoms last up to 24 hours. The symptoms that develop depend on which part of the brain is affected, and 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.

How serious is a TIA?

In itself, a TIA does little harm and the symptoms go within 24 hours. However, a TIA indicates that you have a tendency to form blood clots in your blood vessels or heart. This means that if you have a TIA, you have a higher than average risk of developing a larger blood clot which may cause a stroke in the future. (A stroke causes permanent rather than temporary symptoms.)

Without treatment about 1 in 10 people who have a TIA have a stroke within the following year. This is 7 times the average risk of someone the same age as you who have not had a TIA. Also, within a year of having a TIA, about 3 in 100 people have a heart attack (myocardial infarction) due to atheroma in the blood vessels to the heart.

With treatment the above risks are reduced.

Are any tests usual after a TIA?

Tests are often advised after a TIA. Various routine blood and heart tests may be done. They aim to find if there is any problem of your heart or blood that may lead to blood clots forming. An ultrasound scan of your carotid arteries may also be advised. This to see if you have severe narrowing of one of these arteries caused by atheroma.

What is the treatment after a TIA?

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

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

REDUCING RISK FACTORS

As described, a common reason why blood clots form is because they develop over plaques of atheroma on the lining of blood vessels. One aim of treatment is to prevent a build up of atheroma is one aim of treatment. Certain 'risk factors' increase the chance of atheroma forming. The following risk factors may be relevant for some people who have had a TIA.

- **High blood pressure.** This usually causes no symptoms, but can be damaging to the arteries. If you have a TIA and have high blood pressure, treatment of the blood pressure is likely to have the greatest effect on reducing your risk of having a stroke.
- **Smoking** is a big risk factor. The chemicals in tobacco are carried in your bloodstream and can damage your arteries. Smokers can reduce their risk of having a stroke or heart attack by quitting smoking.
- **Cholesterol and blood lipids (fats).** A diet high in fats can lead to a build up of cholesterol and other fats in your bloodstream. This can contribute to atheroma forming. Diet sheets showing which foods are best, and which to avoid, are commonly available. Medication may also be advised to lower your cholesterol level.
- **Exercise.** On average, people who exercise regularly are less prone to develop atheroma. Regular exercise is advised for most people. It does not matter how old you are, it is never too late to start building up fitness. Any exercise is good. A daily brisk walk for at least 30 minutes is a good start. (However, you may not be able to exercise if you have certain other medical problems.)

- **Diabetes** is a risk factor. If you have diabetes, good treatment to keep your blood sugar as near normal as possible is important.
- **Obesity** is a risk factor. Try to lose some weight if you are overweight.
- **Alcohol** in excess is a risk, but a moderate amount is beneficial. It is thought that 1-2 glasses of wine, or up to a pint of beer per day, helps to prevent heart and stroke disease.

MEDICATION

Medication reduces the risk of a further blood clots forming, and is usually advised for life. This is often called 'thinning the blood', although the blood is not actually made thinner.

Aspirin

Aspirin reduces the 'stickiness' of platelets, which reduces the chance of a blood clot forming. The risk of a stroke after a TIA is cut by about a quarter if you take a daily dose of aspirin. This means that about 1 in 4 strokes that would have occurred without aspirin treatment are prevented. The risk of a heart attack is also reduced. The usual dose is 75 mg daily.

Most people who take a small daily dose of aspirin have no side effects. But, a small number of people have side effects. These include:

- Bleeding of the stomach or guts is an uncommon side effect of aspirin. This is more common if you have a stomach or duodenal ulcer. See a doctor soon if you have a persistent stomach upset or pain, blood in vomit, or black faces (stools) whilst taking aspirin.
- Rarely, some people are allergic to aspirin.
- Aspirin sometimes makes breathing symptoms worse if you have asthma.

Warfarin

Warfarin is usually advised if you have a TIA where the source of the blood clot is from your heart. Warfarin works by reducing some of the chemicals in the blood that are needed to make the blood clot (it is an anticoagulant). The aim is to get the dose of warfarin just right so the blood is 'thinner' than normal (less clottable), but not so much as to cause bleeding problems. Therefore, regular blood tests are needed if you take warfarin.

Other medication

Clopidogrel is an alternative if you cannot take aspirin or warfarin. Research continues to find better medication to prevent blood clots.

SURGERY

Surgery is sometimes an option. About 1 in 20 people with a TIA have severe narrowing of the carotid artery due to a large build up of atheroma. Surgery to remove this may be an option. 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. A specialist will advise on the pros and cons of this operation if you are found to have severe narrowing of a carotid artery.

In summary

Symptoms of a TIA soon go. After a TIA, without treatment, you have about a 1 in 10 chance of having stroke or heart attack within the next year. The following reduces this risk.

- Lifestyle changes such as quitting smoking, changing eating habits, and exercising more

- Treating high blood pressure or high cholesterol level.
- Taking aspirin, warfarin, or similar medication to help prevent blood clots.
- Surgery is an option for about 1 in 20 people who have a TIA.