



strokefoundation

Stop stroke. Save lives. End suffering.

Make yourself strokesafe™

understand and prevent stroke



 **strokesafe**
for life

Brought to you by the National Stroke Foundation

About us

The National Stroke Foundation is a not-for-profit organisation that works with the public, government, health professionals, patients, carers and stroke survivors to reduce the impact of stroke on the Australian community.

Our challenge is to save 110,000 Australians from death and disability due to stroke over 10 years.

We will achieve this by:

- Educating the public about the risk factors and signs of stroke and promoting healthy lifestyles
- Working with all stakeholders to develop and implement policy on the prevention and management of stroke
- Encouraging the development of comprehensive and coordinated services for all stroke survivors and their families
- Encouraging and facilitating stroke research.

Our campaign - **strokesafe™**

In 2004, the National Stroke Foundation developed **strokesafe™**, a public health campaign to address the escalating rise of stroke in Australia. Over recent years, the rate of stroke has increased due to an ageing population and it is now the second biggest killer in the community.

strokesafe™ was developed in response to research showing that many people did not know the causes of stroke or how to prevent one.

The **strokesafe™** campaign promotes awareness of stroke and how people can make themselves safe from stroke, through mass media advertising, resources, information and events for the community, National Stroke Week events and activities and the **strokesafe™** awards program.

The campaign aims to get the message out to the community that stroke is treatable and preventable.

What is a stroke?

A stroke is not a heart attack. Also known as cerebrovascular disease, a stroke occurs when the supply of blood to the brain is suddenly disrupted. Blood is carried to the brain by blood vessels called arteries. Blood may stop moving through an artery because the artery is blocked by a clot or plaque, or because the artery breaks or bursts.

When blood stops flowing, the brain does not receive the oxygen it needs, and therefore brain cells in the area die and permanent damage may be done. Some strokes are fatal while others cause permanent or temporary disability. Some people are able to make a full recovery after a stroke.

Stroke is the second single greatest killer and one of the leading causes of disability amongst adults in Australia.

Imagine:

- Waking up one morning and being permanently paralysed on one side of your body
- Being perfectly able to understand words, but unable to speak or write
- Having to re-learn how to perform the simplest activities of daily living - eating, dressing and bathing
- Your life, and the lives of your family and friends being rearranged
- These are just some of the life-altering ways stroke can affect those it strikes.

Statistics on stroke

- Australians will suffer more than half a million first ever strokes in the next 10 years
- One in three people die within a year of having a stroke
- Stroke kills more women than breast cancer
- Almost one in five people who experience a stroke are under the age of 55
- Men are more likely to suffer a stroke and at a younger age.

What can I do?

Here are some simple ways to help prevent stroke:

- Keep your blood pressure and cholesterol low
- Exercise and eat a healthy diet
- Limit alcohol consumption
- Do not smoke.

Other risk factors for stroke include age, diabetes and irregular heart beat. More information on these can be found in the brochures on:

- High blood pressure and stroke
- Irregular heart beat and stroke
- High cholesterol and stroke
- What is a Transient Ischaemic Attack (TIA)?

What is a Transient Ischaemic Attack (TIA)?

A Transient Ischaemic Attack (TIA) happens when the blood supply to the brain is interrupted for a short period of time.

It is often called a “mini-stroke”. The signs are the same as those of a stroke, but they do not last as long. The signs of a TIA may disappear in a few minutes and last no longer than 24 hours. They are often a warning of impending stroke.

A TIA should never be ignored

TIA episodes usually last only a few minutes but may last for several hours. They generally disappear quickly and unfortunately, are often ignored. Just like a stroke, a TIA will require emergency treatment. About one in five people who have a TIA will have a major stroke within the next three months. TIAs should be regarded as a warning sign that the person is at risk of a stroke and should be investigated promptly.

It is important, therefore, that if transient stroke symptoms occur you see a doctor immediately, even if the signs go away and you feel completely better. The doctor will try to find the underlying cause of the TIA and then organise treatment to lower your risk of another TIA or stroke.

Recognising signs of stroke or TIA

The **FAST** test is an easy way to remember and recognise the signs of stroke. **FAST** stands for **F**acial weakness, **A**rm weakness, **S**peech difficulty, **T**ime to act. Using the **FAST** test involves asking three simple questions:

Facial weakness – can the person smile?
Has their mouth or eye drooped?

Arm weakness – can the person raise both arms?

Speech difficulty – can the person speak clearly and understand what you say?

Time to act fast – call 000 immediately.

Stroke is a medical emergency. If you see the signs of stroke call 000 immediately.

All the signs of stroke include:

- Weakness, numbness or paralysis – in the face, arm or leg on either or both sides of the body
- Difficulty speaking or understanding
- Dizziness, loss of balance or unexplained fall
- Loss of vision, sudden blurred or decreased vision in one or both eyes
- Headache – usually severe and abrupt onset or a change in the pattern of headaches
- Difficulty swallowing.

The signs of stroke may occur alone or in combination and can last a few seconds or up to 24 hours and then disappear. When symptoms disappear within 24 hours, this episode is a mini stroke or Transient Ischaemic Attack (TIA). If you or someone else experiences the signs of stroke, no matter how long they last, seek immediate medical attention.

Why is stroke a medical emergency?

Emergency medical treatment is crucial for three reasons:

1. Only a doctor can decide whether you are suffering a stroke. There are a number of conditions that can mimic stroke and these need to be ruled out urgently.
2. Some treatments for stroke must be given within three hours of the stroke starting.
3. You will need to be assessed by a doctor who will look at treatments to prevent another stroke.

If you are suffering a stroke, emergency medical treatment could save your life and reduce the likelihood of permanent brain damage. The longer a stroke remains untreated, the greater the chance of stroke related brain damage. Emergency medical treatment soon after stroke symptoms begin, improves the chances of survival and successful rehabilitation.

Stroke is **always** a medical emergency. Even if the symptoms don't cause pain or go away quickly - call **000** immediately.

How does a stroke happen?

A stroke can happen in two main ways. Either there is a blood clot or plaque that blocks a blood vessel in the brain, or a blood vessel in the brain breaks or ruptures.

1. A blocked artery

A stroke that is caused by a blood clot is called an **ischaemic stroke**. In everyday life, blood clotting is beneficial. When you are bleeding from a wound, blood clots work to slow and eventually stop the bleeding. In the case of stroke, however, blood clots are dangerous because they can block arteries and cut off blood flow.

There are two ways an ischaemic stroke can occur:

1.1 Embolic stroke

If a blood clot forms somewhere in the body (usually the heart) it can travel through the bloodstream to the brain. Once in the brain, the clot travels to a blood vessel that's too small for it to pass through. It gets stuck there and stops blood from getting through. These kinds of strokes are called embolic strokes.

1.2 Thrombotic stroke

As the blood flows through the arteries, it may leave behind cholesterol-laden 'plaques' that stick to the inner wall of the artery. Over time, these plaques can increase in size and narrow or block the artery and stop blood getting through. In the case of stroke, the plaques most often affect the major arteries in the neck taking blood to the brain. Strokes caused in this way are called thrombotic strokes.

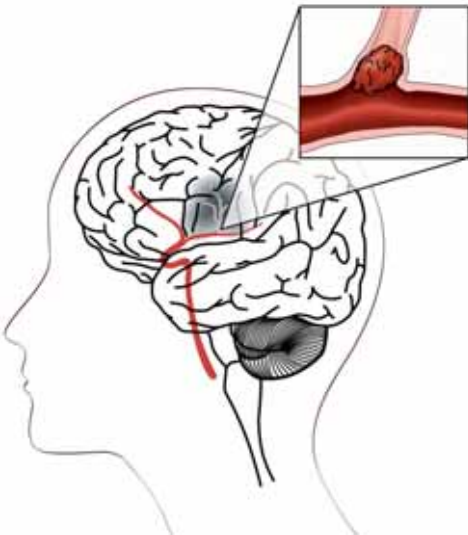


Diagram 1: Ischaemic stroke
(Embolitic and Thrombotic)

2. A bleed in the brain

Strokes caused by a break in the wall of a blood vessel in the brain are called **haemorrhagic strokes**. This causes blood to leak into the brain, again stopping the delivery of oxygen and nutrients.

Haemorrhagic stroke can be caused by a number of disorders which affect the blood vessels, including long-standing high blood pressure and cerebral aneurysms.

An aneurysm is a weak or thin spot on a blood vessel wall. The weak spots that cause aneurysms are usually present at birth. Aneurysms develop over a number of years and usually don't cause detectable problems until they break.

There are two types of haemorrhagic stroke: subarachnoid and intracerebral.

These two terms refer to areas of the brain where the stroke has occurred.

In a **subarachnoid haemorrhage**, bleeding occurs under the thin, delicate membrane surrounding the brain.

In an **intracerebral haemorrhage**, bleeding occurs within the brain itself.

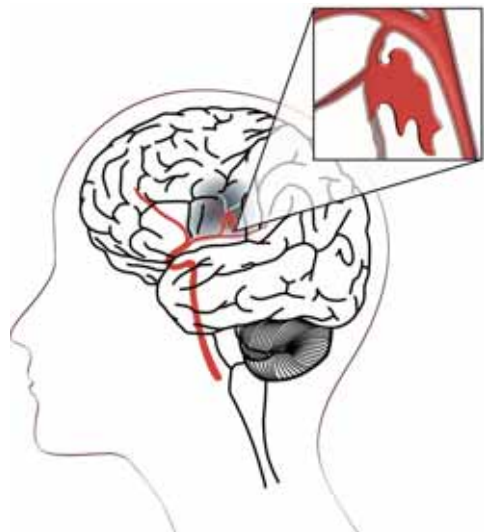


Diagram 2: Haemorrhagic stroke
(Subarachnoid and Intracerebral)

How can I prevent stroke?

Know the risk factors

Some of the risk factors for stroke cannot be controlled. These include age, gender and a family history of stroke.

However, there are a number of risk factors for stroke you can control to reduce your chance of having a stroke.

Control the risk factors

Transient Ischaemic Attack (TIA)

People who have a TIA or mini-stroke are at greater risk of a future stroke. Early identification of symptoms and treatment by your doctor greatly reduces the chances of a major stroke.

High blood pressure

High blood pressure, medically known as 'hypertension', is the most important known risk factor for stroke. High blood pressure can result in damage to blood vessel walls eventually leading to a stroke. You can control your blood pressure by changing your diet and lifestyle, particularly through regular exercise and maintaining a healthy weight, or your doctor may prescribe medication.

Normal blood pressure is around 120/80, if your blood pressure is consistently over 140/90 you have high blood pressure. The lower your blood pressure, the lower your risk of stroke.

Smoking

Smoking can increase your risk of stroke by increasing blood pressure and reducing oxygen in the blood. Seek advice on how to quit smoking as soon as possible by calling the QUIT line on **13 18 48**.

High cholesterol level

High cholesterol is a contributing factor to blood vessel disease often leading to stroke. To reduce cholesterol in your blood, eat foods low in saturated fat. Choose lean meats and low-fat dairy products; limit your intake of eggs. Your doctor may prescribe medication to lower your cholesterol but diet changes and exercise are still important.

Diet and exercise

A diet low in fat and salt will reduce your risk of stroke. A balanced diet eating fresh foods where possible is recommended. Avoid processed or canned foods as they can be high in sodium/salt; check the content on the list of ingredients on the label (low salt food has a level of less than 120 mg/100 g).

A good balance between exercise and food intake is important; this helps to maintain a healthy body weight. People who participate in moderate activity are less likely to have a stroke. Try and build up to at least 30 minutes of moderate physical activity most days of the week. Talk to your doctor about an exercise program as people with high blood pressure should avoid some types of exercises.

Obesity

Being overweight or obese can increase the risk of stroke. Too much body fat can contribute to high blood pressure, high cholesterol and can lead to heart disease and Type 2 diabetes. If you are unable to maintain your weight within recommended levels, ask a doctor or nutritionist for help.

Diabetes

Diabetes, Type 1 (usually occurs from a young age and is treated with insulin injections) or Type 2 (usually occurs from 30 years onwards and is treated with either tablets or in some cases insulin) can damage the entire circulatory system and is a risk factor for stroke. Talk to your doctor about controlling diabetes if you are diabetic.

Alcohol

Your risk of stroke can be reduced with moderate alcohol intake (1-2 glasses a day). However, excessive amounts of alcohol can raise blood pressure and increase your risk of stroke.

Irregular pulse (Atrial fibrillation)

You are more at risk of stroke if you have an irregular pulse due to the condition atrial fibrillation or AF. Your doctor can diagnose this condition and advise you on how best to manage this if it happens. If you experience symptoms such as palpitations, weakness, faintness or breathlessness, it is important to see a doctor for diagnosis and treatment.

Surgery to reduce your risk of stroke

The two carotid arteries are the main arteries carrying blood to the brain. They can become narrowed at a point in the neck by a build up of cholesterol and other fatty material termed “plaque”. If your carotid arteries have become partially blocked, resulting in reduced blood flow to the brain, you may be advised to have an operation called a carotid endarterectomy.

Carotid endarterectomy involves removing the plaque from the area of narrowing and opening the artery. This improves blood flow to the brain and lowers the risk of blood clots or pieces of plaque breaking off and blocking blood flow. It is useful for people who have severe, but not total, blockage of their carotid arteries.

Sometimes both carotid arteries need surgery, but they are usually done one at a time in separate operations. Though the results are usually very good, the carotid endarterectomy operation itself carries with it a small risk of causing stroke.

In expert surgical hands, however, the benefits from the surgery outweigh the risks. As with any major surgical procedure, carefully discuss the situation with your doctors before making a decision.

Some treatment centres also remove of the blockage by using a catheter and placing a balloon and a stent to open the artery. The safety of this approach appears equivalent to surgery, however, the long term benefits of “stenting” are still under evaluation.

Stroke prevention drugs

Research has shown several drugs to be extremely effective in the fight to prevent stroke. The most effective proven medical approaches to stroke prevention fall into three categories:

1. Antihypertensives to reduce blood pressure
2. Antiplatelet agents
3. Anticoagulants which both prevent blood clots from forming or growing.

Antihypertensives

Lowering blood pressure to normal ranges can reduce the risk of stroke dramatically. Blood pressure lowering reduces the risk of both types of stroke, ischaemic and haemorrhagic. When blood pressure cannot be controlled through lifestyle modification alone, your doctor may prescribe medication to lower your blood pressure (anti-hypertensives).

There are many antihypertensive drugs from which your doctor can choose. If you have already had a stroke or a TIA, the use of the blood pressure lowering drug perindopril in combination with indapamide has been shown to reduce the chance of having a further stroke significantly. This is even true for stroke survivors who have 'normal' blood pressure.

Antiplatelet agents

Platelets are a component of the blood which stick together to form a plug. This platelet plug then grows to form a blood clot that is important in stopping bleeding. Antiplatelet drugs play a key role by keeping the platelets from sticking together and forming abnormal clots.

Aspirin, which is probably in your medicine cabinet right now, is the antiplatelet drug most commonly prescribed to help prevent stroke. It is not recommended for use in haemorrhagic stroke. Although aspirin is a non-prescribed drug, some people can't take aspirin because of a bleeding tendency or for other reasons. It is important to consult your doctor before taking aspirin on a regular basis to prevent stroke.

Other antiplatelet drugs include dipyridamole, ticlopidine or clopidogrel. These medications need to be prescribed by a doctor and are for people who have had a previous stroke or TIA. Dipyridamole may be given with aspirin but clopidogrel is usually prescribed on its own. These medications can be particularly useful for people who cannot take aspirin.

Anticoagulants

Anticoagulant drugs interfere with the production of certain blood components that are necessary for the formation of blood clots. The most effective anticoagulant drug for ischaemic stroke prevention is warfarin.

Warfarin helps prevent stroke by keeping existing blood clots from growing larger and by helping to keep new clots from forming. The drug is typically prescribed for older patients with atrial fibrillation (an irregular pulse).

Myths about stroke

Common myths about stroke include:

Myth: Stroke and heart attack are the same.

Reality: Stroke occurs in and affects the brain. This confusion may have come about because both of these health problems involve the circulatory system and can be caused by blood clots. They are only similar in that both require emergency treatment. Think of stroke as a brain attack.

Myth: Stroke is unpreventable. People have no control over it.

Reality: Early detection and effective control of stroke risk factors can greatly reduce the chances of having a stroke.

Myth: Stroke hits without warning.

Reality: Many strokes are preceded by brief episodes of stroke symptoms, also known as Transient Ischaemic Attacks (TIAs). These are temporary interruptions of the blood supply to an area of the brain.

Myth: Stroke only happens to older people.

Reality: Around a third of stroke patients are under age 65. Taking steps to prevent stroke should begin early in life and continue over your lifespan. A stroke that happens after age 65 is the likely result of a long-term process that started with untreated medical conditions, lifestyle choices and health habits formed in young adulthood. Stroke can also occur in children.

Myth: During stroke, brain cells die immediately, causing instant brain damage.

Reality: Brain cells don't die all at once during stroke. Cells in the infarct (the area directly affected by the blood vessel blockage or breakage) begin dying within minutes to a few hours. However, brain cells in the infarct aren't the only ones in danger. Through a process called secondary injury, dying brain cells set off a "chain reaction" of electrical and chemical events. These events endanger, and can kill, brain cells in the surrounding area. As a result, the stroke survivor may experience more severe disability. These damage processes can potentially be treated if patients present to hospital within three hours of stroke onset.

Myth: Stroke is not a medical emergency.

Reality: An emergency response to stroke is critical. At the hospital, doctors will confirm the diagnosis of stroke and perform tests - including a CT scan - to determine the size, location, and cause. This is important because medical and surgical treatment options will vary depending on whether the stroke resulted from a blocked artery or a haemorrhage. Some medications must be given within the first three hours of the stroke. If the stroke symptoms prove to be a TIA, doctors can determine the underlying cause and work with you to prevent a potentially fatal or disabling stroke.

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Partner:



You can help make Australia strokesafe

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