

Understanding Stroke

THIS FACT SHEET explains what a stroke is, the causes, symptoms and diagnosis. It describes the effects of stroke, treatments and the recovery process.

What is Stroke?

A stroke is a sudden disturbance of blood supply to the brain that kills brain cells. This affects any parts of the body that were controlled by those brain cells, such as thinking, speech movement and other senses. Stroke is the most common form of acquired brain injury (ABI).

What Causes Stroke?

There are two main types of stroke:

- > Ischaemic stroke – when a clot or other debris in the blood stream blocks the blood supply to the brain.
- > Haemorrhagic stroke – when a blood vessel ruptures in the brain and bleeds (haemorrhages) into the surrounding area.

Ischaemic stroke: Most strokes are the result of atherosclerosis (hardening of the arteries), when deposits of a fatty substance build up on the inner walls of the arteries and break off, travelling via the blood stream to the brain where they lodge in an artery and block it. Or a clot may form on the roughened artery wall and break off, following the same path.

Two heart conditions – atrial fibrillation and disease of the heart valves – also cause clots of blood to form in the heart that may break off, travel to the brain and cause a stroke.

Haemorrhagic stroke: Bleeding in the brain can be caused by the bursting of a blister (an aneurysm) on a brain artery. Sometimes these blisters are

caused by atherosclerosis, but some are there from birth. Small arteries within the brain can also break down and bleed. Nobody is certain what causes this, but high blood pressure is one of the most common explanations – over many years, high blood pressure weakens the artery walls.

Who Does Stroke Affect?

About 48,000 people have a stroke in Australia each year and about one third of those have already had a stroke. Stroke is most common in older people – more than 50% occur in people over the age of 75, around 5% of strokes occur in people under the age of 45.

Symptoms

Early warning signs occur in at least half of all strokes and quick action may prevent a more serious one occurring.

If any of the following symptoms appear suddenly, get to a doctor or hospital immediately, even if the symptoms pass quickly, the earlier stroke treatment is initiated, the better the outcome.

- > Sudden changes to vision – blurring, blindness in one eye, persistent double vision.
- > Slurred, hesitant or garbled speech.
- > Persistent numbness or weakness in parts of the body.
- > Persistent pins and needles, loss of sensation in major parts of the body.
- > Persistent dizziness or loss of balance.

Diagnosis

No matter whether a person has had fleeting symptoms or a major stroke, their doctor will start with a careful examination, asking about when and how the symptoms first appeared.

The next step is usually a brain scan – a CT (Computerised Tomography) scan – to show whether the stroke is caused by a blocked artery or a bleed, as hospital treatment for the two is quite different. Other tests to provide more information on the type of stroke and its causes might include an MRI (magnetic resonance imaging) scan, an ultrasound examination of the neck vessels – the carotid arteries – and possibly angiography. These tests are described in the Fact Sheet 3: Tests and Technology.

Effects of Stroke

The effects of stroke depend on the part of the brain affected and the amount of damage and vary greatly from person to person. The impact of stroke can be quite debilitating and may require either part-time or full-time care, which can place a strain on main carer in the family.

Paralysis: The most common outcome of stroke is weakness or paralysis on one side of the body (hemiparesis or hemiplegia). This may affect the face, an arm, a leg or all three areas, and can range from mild weakness to total loss of movement.

Sensory awareness: There may also be changes in sensation and awareness on one side of the body. A person may not feel touch on the affected arm or leg or may be unaware of where their arm is. Some people lose total sense of one side of their body. Others find their vision is affected – they may not be able to see to one side of centre or they experience blurred or double vision (See Fact Sheet 12: Vision Problems).

Continence problems: Bladder and bowel problems are also common, particularly in the early stages (See Fact Sheet 9: Continence Problems).

Communication and swallowing: After stroke, many people experience problems communicating, from slurred speech to more severe difficulties such as using and understanding words, forming sentences or having trouble reading and writing.

Swallowing difficulties can be an issue in the early stages, but most people recover well in the first few weeks. For some however, swallowing difficulties persist. (See Fact Sheet 7: Speech and Communication Problems; Fact Sheet 8: Eating and Swallowing Problems.)

Balance and coordination: A stroke may affect balance, coordination or a person's ability to plan a sequence of movements, such as tying shoelaces.

Thinking and behaviour: Stroke may affect a person's thinking skills, concentration, memory, perceptions or result in behaviour or personality changes. Fatigue can be a major problem and sometimes people experience epileptic seizures. (See Fact Sheet 6: Changes in Thinking and Behaviour; Fact Sheet 11: Managing Fatigue).

Coping with Change: In the face of these challenges, grief and depression sometimes take hold of the person with stroke or their carer. It's very important to keep on top of these if you are both to manage the best possible recovery. (See Fact Sheet 19: Coping with Stress; Fact Sheet 18: Grief and Loss).

Vascular dementia: Sometimes a series of very small strokes can occur that are virtually unnoticeable by the person as they happen. This condition leads to a form of dementia known as vascular or multi-infarct dementia.

Treatment

The aims of treatment are to promote recovery and to prevent another stroke.

Treatment should involve a team approach, with doctors, occupational and speech therapists, a psychologist and social worker. The person with stroke and their carer are vital parts of this team.

Emergency treatment: Early treatment at a hospital emergency department can help to maximise recovery and minimise disability or death. Ideally, the hospital you attend will have stroke unit, staffed by stroke specialists. In some cases, new treatments called “clot busters” can minimise or even reverse the effects of a stroke if administered within three hours of symptoms occurring.

Initial treatment: A stroke can cause swelling in the surrounding brain. In the first few days, treatment aims to minimise this swelling and prevent complications. Once the swelling settles down after the first week or so, it leaves a central area of dead cells, with the surrounding cells still in recovery. Over the weeks and months that follow, some of these “stunned” cells may recover or other parts of the brain may take over some of their functions.

Prevention treatment: These treatments might include blood-thinning medication (to prevent new clots forming) and medication to control high blood pressure or to reduce high cholesterol. An assessment to determine the presence of diabetes or the person’s management of existing diabetes is also likely. An overall assessment of a person’s risk factors will be made and a treatment plan devised to prevent further stroke.

Rehabilitation: Rehabilitation helps to make the most of recovery. Patients who require it will move to a rehabilitation hospital where they may stay for anything from two weeks to four months or more.

Ongoing therapy: After rehabilitation, many people will continue with regular therapy or opt for episodes of therapy to maintain the skills and movement they have regained. This is usually available at a day therapy centre or community rehabilitation centre. Talk to your doctor or community health centre about what is available locally.

What is the Outlook?

About one third of people who have a stroke will recover completely over a few days, weeks or months. One third will be left with some degree of permanent disability (usually paralysis and/or thinking and/or speech problems). About one third will die within 12 months of the stroke. After the early months, improvement slows down. Nevertheless, patients may go on making smaller gains for up to two years and particularly in the area of speech difficulties, beyond two years.

Managing recovery: The challenge of learning to live with stroke and finding new and better ways to cope may continue for life. After stroke, a person needs to stay in touch with their doctor for regular check-ups to monitor their stroke risk factors to prevent another stroke occurring and to manage any complications that may arise.

Contact

Brain Link

54 Railway Rd, Blackburn, 3130

telephone: (03) 9845 2950,

freecall: 1800 677 579

fax: (03) 9845 2882

email: info@brainlink.org.au

internet: www.brainlink.org.au

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