

# Seizures and epilepsy after stroke

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This guide looks at post-stroke seizures and epilepsy, and how they can be diagnosed and managed.

## Seizures after stroke

A first seizure after stroke often occurs within the first few days, but it can happen two years or more after a stroke. You are more likely to have a seizure if you had a stroke caused by bleeding in the brain (a haemorrhagic stroke).

Seizures can also be more likely if you had a severe stroke, or a stroke in the cerebral cortex, the large outer layer of the brain where vital functions like movement, thinking, vision and emotion take place.

If you have a seizure after a stroke, it does not necessarily mean you have epilepsy, or will go on to develop it. Overall, your risk of having a seizure reduces over time after a stroke.

Some people will have repeated seizures, and be diagnosed with epilepsy. The chances of this happening may depend on where the stroke happens in the brain, and the size of the stroke.

## What is a seizure?

Cells in the brain send electrical signals to one another. The electrical signals pass along your nerves to all parts of the body. A sudden abnormal burst of electrical activity in the brain can lead to the signals to the nerves being disrupted, causing a seizure. This electrical disturbance can happen because of stroke damage in the brain.

A seizure can affect you in many different ways such as changes to vision, smell and taste, loss of consciousness and jerking movements. For more information see 'Types of seizure' later in this guide.

## Seizures and epilepsy

Epilepsy is a condition that means you have repeated seizures. People can develop epilepsy at any age, and in around half of all cases there is no obvious reason for it to happen. Epilepsy can be due to a brain injury or other condition such as stroke, an infection or a growth in the brain. Overall, stroke is the cause in around 10% of adults newly diagnosed with epilepsy.

### Types of seizure

Seizures can vary, ranging from tingling sensations or 'going blank' for a few seconds, to shaking and losing consciousness. Some people have only one type of seizure, and some have more than one type.

There are three main types of seizure.

#### Focal onset seizures

Some seizures only occur in part of the brain, known as focal onset seizures. There are two kinds of focal seizures, motor (physical signs like moving arms or falling), and non-motor (affects senses, awareness and emotions).

#### Generalised onset seizures

A generalised seizure involves the whole brain and affects the whole body. Motor (physical) signs can include losing consciousness and muscle spasms. A non-motor seizure could be a brief period of absence or blankness, where the person stops moving, and looks as if they are staring into space.

#### Unknown onset seizure

If it's not possible to tell where the seizure began in the brain, doctors may describe your seizure as motor or non-motor. Motor (physical) signs might include losing consciousness and having jerking movements, and non-motor signs can affect emotions and sensations.

### How is epilepsy diagnosed?

A seizure may take place very soon after the stroke. If you are in hospital at the time you should have help from the medical team on the ward. If you have already left hospital and think you have had a seizure, contact your GP.

You should be referred to see a specialist within two weeks. The specialist is usually a neurologist, an expert in the brain and nervous system. While you are waiting for the appointment, it is best to avoid any activities that could put you, or others, in danger if you have another seizure. For example, don't go swimming, and have showers rather than a bath. You must not drive if you have had a seizure.

You may not be able to remember the seizure, so if someone else witnessed it, they could visit the specialist with you. Or they could send a written account or, if possible, a video of the seizure. It may help to keep a seizure diary recording the date and time of your seizures, what happened and any possible triggers such as stress or drinking alcohol.

The specialist will ask you questions about what happened. This may be enough to make a diagnosis. Further tests may be needed, particularly if the seizure did not involve convulsions. These tests do not prove whether you have epilepsy, but they can give information about the possible cause, and the type of epilepsy you have.

## Tests used in diagnosing epilepsy

### Electroencephalogram (EEG)

A common test for epilepsy is an EEG. It is a painless test which involves placing electrodes on your scalp. These measure electrical activity in your brain, and can identify any unusual patterns. The test only shows what is happening in your brain at the time it is done, so a normal EEG does not necessarily mean that you do not have epilepsy.

An EEG usually takes about one hour and can be done at an outpatient clinic.

### Magnetic resonance imaging (MRI)

An MRI scan can find problems inside the brain which might cause epilepsy, including the damage left by a stroke.

### Blood tests

You may be given blood tests or have other checks to look for health problems that can cause similar symptoms, such as diabetes, migraine and panic attacks.

## How is epilepsy treated?

Treatments for epilepsy include:

- Anti-epileptic drugs (AEDs).
- Surgery.
- Vagus nerve stimulation therapy.
- Ketogenic diet.

This guide can only give general information. You should always get individual advice about your own health and any treatment you may need from a medical professional such as a GP or pharmacist.

## Anti-epileptic drugs (AEDs)

Medication can usually reduce seizures and allow you to lead a normal life. The treatment you have will depend on:

- What type of seizures you have.
- Your age and sex.
- How frequent your attacks are.
- Other effects of your stroke, like swallowing problems.
- Other medication you are taking.

There are several different types of medication available for epilepsy. These are called anti-epileptic drugs or AEDs. They usually work by changing the levels of chemicals in the brain.

In some cases the normal activity of the brain may also be affected, leading to drowsiness, dizziness, confusion and other side effects. Once your body is used to the medication, these side effects may go away. Your doctor might start you on a low dose and increase it gradually to reduce the chances of you having side effects. If they are severe or last a long time, your doctor may change the dose or try a different medication.

Everyone is different, and some people experience side effects from a particular medication even at a low dose. However, you can usually try a different type if this happens, as there are many safe and reliable AEDs available.

You might be given a single drug or a combination of two or more. The type you are given depends on the type of seizures, and any side-effects you have from a particular drug or combination.

If you have symptoms like feeling unsteady, having poor concentration or vomiting, your dose could be too high and you should contact your GP or specialist.

### Surgery

Surgery may be an option if anti-epileptic drugs do not help you, and if your epilepsy is due to a physical cause in your brain, such as scarring or stroke damage. Whether you can have surgery depends partly on where the problem lies inside your brain, and whether a surgeon can reach it safely. Having surgery in your brain can be very risky. You can work with your doctor to understand the risks and possible benefits to you before choosing to go ahead.

### Vagus nerve stimulation therapy

A small electrical device is implanted in the neck, and connects to the left vagus nerve. The device sends regular electric signals to the brain via the vagus nerve, which can help regulate electrical activity in the brain that causes epilepsy.

### Ketogenic diet

This treatment is used for children (and occasionally adults) who don't respond to AEDs, and involves a high-fat, low-carbohydrate diet. This changes the way the brain uses energy, which may reduce seizures. It should only be used with the help of a specialist doctor and dietician.

## First aid for seizures

What you can do if someone is unconscious and making jerking movements.

- Protect the person from injury by removing any harmful objects nearby and cushioning their head.
- Loosen any tight clothing from around their neck.
- Look for any identity card or jewellery that might give you advice on what to do.
- Do not attempt to restrain the person or bring them round.
- Do not move them, unless they are in danger.
- Do not put anything into their mouth.
- After the seizure has finished, turn them on their side to help them breathe more easily.
- Do not give them anything to eat or drink.
- Be calm and reassuring, stay with them until they have completely recovered.
- Make a note of how long the seizure lasted.

Call **999** if:

- One seizure follows another without the person recovering in between.
- The seizure continues for more than five minutes.
- The person is injured or seems to need urgent medical attention.
- You think it is the person's first seizure.

## Driving

If you have had a seizure, you must stop driving and notify the DVLA (England, Scotland and Wales) or the DVA (Northern Ireland) as well as your insurance company. For more information read our guide 'Driving after a stroke' and visit the DVLA website [gov.uk/epilepsy-and-driving](http://gov.uk/epilepsy-and-driving).

## Where to get help and information

### From the Stroke Association

#### Helpline

Our Helpline offers information and support for anyone affected by a stroke. This includes friends and carers.

Call us on **0303 3033 100**, from a textphone **18001 0303 3033 100**  
Email [helpline@stroke.org.uk](mailto:helpline@stroke.org.uk).

#### Read our information

Get more information about stroke online at [stroke.org.uk](http://stroke.org.uk), or call the Helpline to ask for printed copies of our guides.

#### My Stroke Guide

The Stroke Association's online tool My Stroke Guide gives you free access to trusted advice, information and support 24/7. My Stroke Guide connects you to our online community, to find out how others manage their recovery.

Log on to [mystrokeguide.com](http://mystrokeguide.com) today.

### Other sources of help and information

#### Driver Vehicle Licensing Agency (DVLA) (England, Scotland, Wales)

Website: [gov.uk/dvla](https://www.gov.uk/dvla)

Tel: 0300 790 6806

Contact the DVLA by phone or online to tell them about a medical condition that affects your driving such as stroke and seizures.

#### Driver and Vehicle Agency (DVA) (Northern Ireland)

Website: [nidirect.gov.uk/motoring](https://nidirect.gov.uk/motoring)

Tel: 0300 200 7861

Email [dva@infrastructure-ni.gov.uk](mailto:dva@infrastructure-ni.gov.uk)

Contact the DVA to tell them about a medical condition that affects your driving.

#### Epilepsy Action

Website: [epilepsy.org.uk](https://www.epilepsy.org.uk)

Helpline: 0808 800 5050

Email helpline: [helpline@epilepsy.org.uk](mailto:helpline@epilepsy.org.uk)

Provides advice and information about epilepsy, and seizure diaries. Has a local resource network which holds social events.

#### Epilepsy Society

Website: [epilepsysociety.org.uk](https://www.epilepsysociety.org.uk)

Helpline: 0149 4601 400

Provides information about epilepsy and specialist residential care for people with severe epilepsy.

#### Epilepsy Scotland

Website: [epilepsyscotland.org.uk](https://www.epilepsyscotland.org.uk)

Helpline: 0808 800 2200

Provides information, training and community support services to assist people to live independently.

#### Epilepsy Wales

Website: [epilepsy.wales](https://www.epilepsy.wales)

Helpline: 0800 228 9016

Email: [info@epilepsy.wales](mailto:info@epilepsy.wales)

Provides information, runs support groups and training, and works to raise awareness.



### About our information

We want to provide the best information for people affected by stroke. That's why we ask stroke survivors and their families, as well as medical experts, to help us put our publications together.

#### How did we do?

To tell us what you think of this guide, or to request a list of the sources we used to create it, email us at [feedback@stroke.org.uk](mailto:feedback@stroke.org.uk).

#### Accessible formats

Visit our website if you need this information in audio, large print or braille.

#### Always get individual advice

This guide contains general information about stroke. But if you have a problem, you should get individual advice from a professional such as a GP or pharmacist. Our Helpline can also help you find support. We work very hard to give you the latest facts, but some things change. We don't control the information provided by other organisations or websites.

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