Headway
the brain injury association

Epilepsy
after brain injury

This publication has been written to offer information on what epilepsy is and how it can be caused by brain injury. It also describes the ways in which epilepsy is diagnosed and treated, and provides important safety information for families, friends and carers of a brain injury survivor who has epilepsy.

www.headway.org.uk
0808 800 2244

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Introduction

Epilepsy is a condition that can commonly develop after brain injury. Epileptic seizures, or 'fits', are most frequent in the first week after brain injury and tend to become less common after this. However, it is still possible for people to be at risk of developing epilepsy weeks, months or even years after the injury. Epilepsy may improve over time, although some people may have ongoing problems with it and will require the use of medication to control their seizures.

This publication has been written to offer information on what epilepsy is and how it can be caused by brain injury. It also describes the ways in which epilepsy is diagnosed and treated, and provides important safety information for families, friends and carers of a brain injury survivor who has epilepsy.

Remember that you can also get help for any of the issues covered in this publication from the nurse-led Headway helpline on 0808 800 2244 or helpline@headway.org.uk.

The information in this publication does not replace clinical guidance from medical professionals. You should always get advice from your GP or other suitably qualified

professional for help with managing the effects of brain injury.

What is epilepsy?

Epilepsy is a condition that develops as a result of abnormal activity in the brain. Regular brain activity occurs through electrical signals that pass between cells in the brain called neurons. Usually these signals are passed from cell to cell in a systematic and controlled way, which results in all of our thoughts and feelings.

After a brain injury, however, some people may develop sudden onsets of random and erratic electrical activity in their brain. This is called a seizure, and can commonly cause symptoms such as a change in or loss of consciousness, shaking or convulsing, or tongue biting.

There are different types of epileptic seizures. These are described below.

Generalised tonic-clonic seizures

Many people recognise seizures in the form of generalised tonic-clonic seizures, sometimes referred to as ‘grand mal’ seizures. In this type of seizure, abnormal electrical activity occurs across most of or all of the brain. They are characterised by a sudden loss of consciousness and falling, followed by stiffening (tonic phase) and then rhythmic jerking of the whole body (clonic phase). The person may bite their tongue or lips, or be incontinent. Following the seizure, there may be a period of drowsiness, confusion or sleep.

Generalised tonic-clonic seizures are sometimes preceded by a strange taste, smell or other sensation, known as an ‘aura’. These tend to occur in the same way before each seizure.

Some people may learn to detect when they are about to have a seizure by the presence of an aura.

Partial seizures

Sometimes referred to as focal seizures. These affect only part of the brain.

Changes in consciousness and behaviours such as lip-smacking, picking at clothing, grimacing and unresponsiveness occur. These seizures can also have symptoms of sudden anger, panic, depression and other states of mind.

Sometimes the person having a partial seizure does not exhibit any unusual behaviours, but they stop responding to the environment and ‘blank out’. They will often have no recollection of it afterwards, and they might be very tired and wish to sleep. Although partial seizures only affect part of the brain, they may spread across the whole brain and lead to a generalised seizure.

Diagnosing epilepsy

There are a number of methods used to diagnose epilepsy. These methods rely on measuring bodily functions such as heart rhythm or brain activity. The main methods used are described in some detail below.

Electroencephalography (EEG)

This method measures electrical activity of the brain through a number of electrodes that are placed on the surface of the scalp. The electrodes are attached to a close-fitting cap that the person undergoing EEG needs to wear. A gel is often applied to the scalp to make it easier for the electrodes to detect brain signals.

An EEG can take approximately 20 minutes to conduct, although a person may be asked to stay awake the night before and have the EEG in hospital while falling asleep - this is called a ‘sleep deprived’ EEG.

Wearing the EEG electrodes for two or three days can help if a recording needs to be made during a seizure. In this case, the wires can be hidden and the recording made on a small device attached to a belt.

Electrocardiography (ECG)

This method records the electrical activity and rhythm of the heart. Changes in heart rhythm can sometimes trigger off attacks that are similar but nevertheless different to epileptic seizures. Therefore an ECG might need to be performed to rule out the possibility of heart problems.

Magnetic resonance imaging (MRI)

This method takes images of the brain with the use of very powerful magnets. The person having an MRI scan is asked to lie very still in a scanner while the images are taken. Having an MRI scan is not painful, although some people find it to be claustrophobic as the scanner is very narrow, and it can be noisy (although headphones are provided). In some cases, a sedative, or in rare cases an anaesthetic, may be given to help. MRI scans usually take around 20 minutes to perform.

Managing epilepsy

If you are liable to epileptic seizures, you may be able to recognise the ‘warning signs’ that one is about to occur, and you may have time to sit down or tell someone what is about to

happen. It may then be possible to prevent the seizure from becoming generalised by using a variety of techniques to reduce arousal levels. There is no single proven method of reducing the frequency of seizures or preventing the seizure from becoming generalised: different methods work for different people. It is therefore important to look at individual patterns of seizures and, in particular, any triggers such as tiredness, stress, caffeine and even relaxation.

It might help to keep a diary of details surrounding the seizure after one has taken place, for instance what you were doing before the seizure started, the time that the seizure began, and other such details. This might help with identifying patterns of triggers, allowing you to take more control of your epilepsy.

Anti-convulsant medication may be prescribed to control seizures that develop following a brain injury. Some people are given drug treatment for epilepsy following their brain injury before they have even had a seizure, in order to prevent potential seizures from developing - this is known as prophylaxis. The Epilepsy Society has a useful list on their website of different anti-epileptic medications that are commonly used to treat epilepsy. For more information, visit www.epilepsysociety.org.uk/list-anti-epileptic-drugs.

Remember that to have better control of anything, it is important to understand the thing as much as possible. Research the type of epilepsy that you have, while remembering that everyone's patterns of seizures will be different.

Epilepsy and driving

If you have had a seizure, regardless of how 'minor' it was or whether or not you have been diagnosed as having epilepsy, you have a legal responsibility to stop driving and inform the

Driver and Vehicle Licensing Agency (DVLA), or the Driver and Vehicle Agency (DVA) if you are in Northern Ireland. They will typically contact your doctor for a medical report. They may ask you to undergo an examination by one of their medical advisors.

Acknowledgements

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Useful organisations

The organisations listed below are provided for information purposes only. Their inclusion does not imply endorsement, recommendation, or approval by Headway. Users should make their own assessment of any organisation or service before engaging with them.

DVLA - information on driving with a medical condition
Web: www.gov.uk/browse/driving/disability-health-condition

Epilepsy Action
Web: www.epilepsy.org.uk
Tel: 0808 800 5050
Email: epilepsy@epilepsy.org.uk

Epilepsy Research Institute UK
Web: www.epilepsy-institute.org.uk
Tel: 020 3882 9438
Email: info@epilepsy-institute.org.uk

Epilepsy Society
Web: www.epilepsysociety.org.uk
Tel: 0300 102 0024
Email: helpline@epilepsysociety.org.uk

NHS - further information on epilepsy
Web: www.nhs.uk/conditions/epilepsy/

What to do if someone is having an epileptic seizure

During the seizure

- Move the person if they are in a dangerous place such as near a road
- Place something soft under their head if they are on the ground
- Loosen any tight clothing around the neck so that they can breathe freely
- Do not place anything in their mouth as this will likely cause more harm than good
- Talk to them gently and calmly, even if they are not responding
- Stay with them until they have recovered

It is not usually necessary to send a person who has a known history of epilepsy to hospital. However, medical help should be sought if:

- The seizures show no sign of stopping after five minutes
- This is their first seizure
- The person suffers a series of seizures
- The seizures are severe
- The person suffers a physical injury during the seizure

People liable to seizures sometimes carry a card issued by Epilepsy Action, or a note saying what should be done in the event of a seizure. It is a good idea to look for such a card or note if someone is experiencing a seizure, as it might give some helpful instructions.

After the seizure

- Gently turn the person over onto their side once they have stopped convulsing

- Do not give them anything to eat or drink until they have fully recovered

- Allow them to sleep if they wish

- The person may experience a headache or period of confusion which may last for a few hours. If this happens, allow them to sit or lie quietly until it improves.

- Make a note of how long the seizure lasted for, the time and the date.

We hope that this has been a helpful resource. Please consider sharing your feedback with us by scanning the QR code or by visiting our publication feedback survey https://uk.surveymonkey.com/r/hwpublications.

Learn more and support our work at www.headway.org.uk/get-involved.

This information was last reviewed in 2023.

We're here to listen.

If you need support, or have a question about brain injury, contact our free nurse-led helpline:

0808 800 2244
helpline@headway.org.uk

0115 924 0800 | enquiries@headway.org.uk
www.headway.org.uk

Head office: Bradbury House, 190 Bagnall Road,
Old Basford, Nottingham, NG6 8SF

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