



What is epilepsy?

Epilepsy is a disruption of the normal electrical activity of the brain that results in seizures. Under certain circumstances anyone can have a seizure. It is only when there is a tendency to have recurrent seizures that epilepsy is diagnosed.

What is a seizure?

The brain is made up of millions of nerve cells. These cells, called neurons, normally generate electrochemical impulses, sending messages to other regions of the body to produce thoughts, feelings and actions. A seizure is a disruption in the normal pattern of these impulses, caused by the neurons firing all at once and at a much faster rate. This can cause changes in sensation, awareness and behaviour, or sometimes convulsions, muscle spasms or loss of consciousness, depending on where the seizure starts and spreads in the brain. Seizures can last a few seconds to a few minutes. Most seizures are over in less than three minutes.

Can anyone get epilepsy?

Epilepsy can affect anyone regardless of age, level of intelligence, gender, culture or background. It is a common brain condition affecting approximately 1-2% of Australians.

What causes epilepsy?

There are many causes for seizures and a thorough medical examination should be undertaken to determine diagnosis. **However, up to 50% of people with epilepsy have no known cause for their seizure disorder.** Anything that results in damage to the brain tissue or causes scarring on the brain may lead to abnormal electrochemical patterns within the brain, resulting in seizures. In some cases epilepsy is caused by:

- ❖ Head injury
- ❖ Stroke or brain haemorrhage
- ❖ Lack of oxygen to the brain for a prolonged period (e.g. birth trauma, cardiac arrest, drug overdose)
- ❖ Brain infections
- ❖ Brain malformations
- ❖ Brain tumours
- ❖ Genetic factors
- ❖ Conditions affecting the brain (e.g. Alzheimer's disease)
- ❖ Chronic alcohol or drug abuse

Recognising seizures

There are many different types of seizures. Three of the most common are:

- ❖ Tonic clonic
- ❖ Complex partial
- ❖ Absence

Tonic clonic seizures (previously called 'grand mal') are the most universally recognised seizures. They begin with a sudden loss of consciousness and often with a cry. If standing, the person will fall to the ground. The body becomes stiff (tonic) shortly followed by jerking of the muscles (clonic). Breathing is shallow or temporarily suspended causing

the lips and complexion to look grey/bluish. Saliva may come of the person's mouth with blood if they have bitten their tongue, and there may be loss of bladder control. The seizure usually lasts approximately two minutes. It is followed by a period of confusion, agitation or sleep. Headaches and soreness are also common afterwards.

Complex partial seizures vary widely, depending on where they start and spread within the brain. Consciousness or awareness is altered, producing a vague, confused or dreamlike appearance. The person may respond, often inappropriately, and display strange, random and repetitive behaviour. This behaviour commonly presents as chewing, fidgeting, taking off clothes, walking around, or mumbling. There is often a period of confusion after the seizure and little, if any, memory of the event. These seizures can last approximately 30 seconds to three minutes.

Absence seizures (previously called 'petit mal') can occur in adults but they usually start in childhood. They are characterised by staring, loss of facial expression, unresponsiveness, cessation of activity and sometimes eye blinking or upward eye movements. They start and end abruptly, lasting from two to 20 seconds. The person usually recovers mental function and resumes previous activities, with no memory of the event. Absence seizures are often mistaken for daydreaming or lack of concentration. They can disrupt learning by creating gaps in information received, especially if the condition isn't treated, although the person has normal cognitive function and intelligence.

Triggers

Avoiding triggers helps to reduce the risk of seizures in people with epilepsy. Common triggers for seizures are:

- ❖ Lack of sleep
- ❖ Missed medication
- ❖ Extreme fatigue or physical exhaustion/stress
- ❖ Emotional stress e.g. conflict, death, fear and anxiety, emotional upsets, money concerns
- ❖ Hormonal fluctuations during the menstrual cycle
- ❖ Drug toxicity e.g. too much antiepileptic medication
- ❖ Boredom, lack of activity or interest
- ❖ Consumption of alcohol or drug abuse
- ❖ Fever associated with colds and infections

First aid for seizures

- ❖ Stay calm and remove hazards or anything that may cause injury.
- ❖ Only move the person if they are in danger.
- ❖ Check the time the seizure begins and record how long it lasts.
- ❖ For a tonic clonic seizure, put something soft under the person's head or support their head with your hands. When the jerking stops, gently roll the person onto their side with their top leg bent at the knee (coma position).
- ❖ Gently guide the person away from obstacles if they are having a complex partial seizure.
- ❖ Stay with the person and comfort them as they regain consciousness. Ask them a few questions so you know they have actually regained consciousness.
- ❖ **DO NOT** put anything in the person's mouth.
- ❖ **DO NOT** try to restrain the person during a tonic clonic seizure.

Dial 000 to call an ambulance if:

- ❖ You are in any doubt.
- ❖ The seizure occurs in water.
- ❖ You arrive after the seizure has started.
- ❖ Injury has occurred.
- ❖ There is food, drink or vomit in the person's mouth during the seizure.

- ⚡ The jerking lasts longer than five minutes or longer than normal for that person.
- ⚡ Another seizure follows quickly.
- ⚡ A complex partial seizure lasts longer than 15 minutes.
- ⚡ The person has breathing difficulties after the jerking stops.
- ⚡ The person is pregnant and is having a tonic clonic seizure.
- ⚡ It is the first known seizure.

A promising outlook

Generally people with epilepsy can live a full and active life. The majority of people with epilepsy achieve good seizure control with regular antiepileptic medications and a sensible lifestyle. Many become seizure free.

Epilepsy need not necessarily limit expectations or achievements. Some of the greatest achievers have had epilepsy: Julius Caesar, Charles Dickens and Leonardo da Vinci and Hugo Weaving, to name just a few.

Medical treatment is improving all the time. In recent years many new medications have been developed and technological breakthroughs in scanning techniques are allowing for more specific diagnoses. Doctors now recognise that many conditions involving epileptic seizures occur and differ in outlook and treatment.

This information is given to provide accurate, general information about epilepsy. Medical information and knowledge changes rapidly and you should consult your doctor for more detailed information. This is not medical advice and you should not make any medication or treatment changes without consulting your doctor.