



# Epilepsy Facts

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Epilepsy is a common neurological disorder caused by disturbances in the normal electrochemical functions of the brain. In normal brain function, orderly electrochemical information is passed via nerve cells in the brain to other parts of the body. In patients with epilepsy, this pattern is interrupted by sudden and synchronized bursts of electrical energy, which, if intense enough, may briefly affect a person's consciousness, bodily movements or sensations. These physical changes are called epileptic seizures. About 2.5 million people in the United States have epilepsy, and as many as 9 percent of the entire population may experience a seizure at some point in their lives. There are many types of epilepsy – a few common types are described below.

## Types of Epilepsy

**Partial (or focal) epilepsy** is the most common type of epilepsy and begins in only part of the brain. The patient may be awake. These seizures may become generalized if the electrical activity spreads to the rest of the brain.

**Idiopathic generalized epilepsy** often starts during childhood or adolescence, although it may not be diagnosed until adulthood. In this type of epilepsy, there are no nervous system (brain or spinal cord) abnormalities other than seizures. The brain is structurally normal. This condition is generally treated with medications and may be outgrown.

**Idiopathic partial epilepsy** affects children, usually between the ages of 5 and 8, and may have a genetic cause. Children frequently outgrow this mild form of the condition by the time they reach adolescence.

## Diagnosis

Diagnosis is made by a neurosurgeon based on symptoms, physical signs, and results of tests such as an electroencephalogram (EEG), computed tomography (CT or CAT scan), or magnetic resonance imaging (MRI).

It is essential that the type of epilepsy and the type of seizures are both diagnosed properly. There are several major classifications of seizures, and most are associated with specific forms of the disorder.

## Treatment

Epilepsy may be treated with drug therapy,

surgery, biofeedback or a ketogenic diet. The wide range of antiepileptic drugs (AEDs) remains the cornerstone of treatment.

AEDs treat the symptoms of epilepsy (the seizures), rather than curing the underlying condition. The drugs act on the brain to prevent the seizures from starting by reducing the tendency of the brain cells to send excessive and confused electrical signals.

Brain surgery may be a viable alternative for some people whose seizures cannot be controlled by medication. A person who has been given adequate dosages of several seizure medications, for an appropriate period of time without good results, is unlikely to achieve complete seizure control with any other medication.

Epilepsy surgery can benefit patients who have seizures associated with structural brain abnormalities, such as benign brain tumors, malformations of blood vessels (including disorders known as arteriovenous malformations, and cavernous angiomas), and strokes.

Improved technology has made it possible to identify more accurately where seizures originate in the brain (epileptogenic regions), and advances in surgery have made operative management safer. The benefits of surgery should always be weighed carefully against its risks, because there is no guarantee that it will be successful in controlling seizures.

**For more detailed information, visit [www.NeurosurgeryToday.org](http://www.NeurosurgeryToday.org).**