

Seizure & Epilepsy Overview



What is epilepsy?

Epilepsy is a neurological disease that causes people to have recurrent seizures. A seizure is a brief disruption of electrical activity in the brain.

- Epilepsy is not contagious.
- Epilepsy is not a mental illness.
- Epilepsy is not a developmental disability.



What causes epilepsy?

More than half the time, the cause is unknown. When a cause can be found, it is most often one of these:

- Head injury
- Infection of the brain
- Stroke
- Brain tumor
- Alzheimer's disease
- Malformation of an area of the brain
- Genetic factors

Who has epilepsy?

In the United States, 3.4 million people live with epilepsy, and over 150,000 new cases are diagnosed each year. One in 26 people will develop epilepsy at some point in their life. Epilepsy doesn't discriminate. It affects children and adults, men and women, and people of all races, religions, ethnic backgrounds, and social classes. While epilepsy is most often diagnosed either in childhood or after the age of 65, it can occur at any age.



How is epilepsy diagnosed?

Medical history, neurological examination, blood work, and other tests are important in diagnosing epilepsy. Eyewitness accounts of a person's seizures are very important in helping determine the type of seizure(s) a person has. An electroencephalograph (EEG) is a commonly used test to help diagnose seizures. An EEG records the brain's electrical activity during the test. Some patterns of activity are unique to particular types of seizures. In some situations, CT scans, MRIs, and PET scans may be used to look at the internal structure and function of the brain. These tests may help pinpoint causes of seizures and epilepsy.



How is epilepsy treated?

Medication – Drugs used to treat epilepsy are called anti-seizure medication. More than 30 anti-seizure medications are currently approved to treat epilepsy. About 7 in 10 people achieve good seizure control on one or more of these medications. Other treatments are available if medicines don't work.

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How to handle a seizure

- Don't panic - stay calm and help others around you remain calm.
- Note time when the seizure starts and when it ends.
- Direct the person away from hazards or remove objects that may present a danger.
- If the person is having a convulsive seizure, turn the person on one side and cushion his or her head.
- Remove glasses and loosen tight clothing.
- Do NOT put anything in the mouth.
- Do NOT give liquids or medication.
- Do NOT restrain.
- Stay with the person until they are awake and aware of their surroundings.

When to call 911

Most seizures are not medical emergencies, but an ambulance should be called if:

- The seizure lasts longer than 5 minutes or one seizure immediately follows another.
- The person does not resume normal breathing after the seizure ends.
- There is no medical ID and no known history of seizures.
- There is an obvious or suspected injury.
- The person is pregnant or has diabetes.
- The seizure happens in water.
- The person requests an ambulance.



For additional information about epilepsy, or to locate the Epilepsy Foundation nearest to you, visit

www.epilepsy.com

or call 1-800-332-1000

Surgery – Certain types of surgery may be used for people whose seizures do not respond to medication. Surgery may be recommended when a seizure focus can be determined and removal of all or part of the affected area can be performed without hurting vital functions like speech or movement.

Vagus Nerve Stimulation (VNS) – A small device is implanted under the skin in the left side of the chest. A lead (small thin wire or electrode) goes from the device under the skin and attaches to the vagus nerve in the left side of the neck. The benefits of the VNS appear to improve over time. For example, after one or two years, up to 4 or 5 out of 10 people who have the VNS may see their seizures decrease by 50% or more.



Responsive Neurostimulation (RNS) – A small device for the RNS is placed under the scalp in a small area of the skull or bone surrounding the brain. One or two wires from the device are placed under or on the surface of the brain where seizures start. The device is able to sense a seizure and sends small pulses of electrical current through the wires to help stop or lessen seizure activity. Like the VNS, the RNS does not cure epilepsy and it may not work right away. Yet it can help stop or lessen the number of seizures a person has by 40% to 60% after one to three years.

Dietary Therapies – Dietary therapies are used primarily in children, but some can also be very helpful in adults with seizures that do not respond to medications. The most common dietary therapy is the ketogenic diet. This is a medically supervised high fat and low carbohydrate diet. It can help control seizures in about 2 out of 3 children who stay on the diet. Other less strict diets may also help to lessen seizures in some people.

Seizures can take many different forms, not just the convulsive type that most people associate with epilepsy.

Types of seizures

Common types of seizures include:

Generalized Onset - Tonic-Clonic (Grand Mal) – Convulsions, rigid muscles, jerking; typically lasts 1 to 3 minutes and followed by period of confusion.

Generalized Onset - Absence (Petit Mal) – Blank stare lasting only a few seconds; sometimes with blinking or chewing motions.

Focal Onset - Impaired Awareness (Complex Partial) – Staring and dazed facial expression; person is not aware of what is going on or will not remember; person may perform repetitive random movements and may not be able to talk normally; typically lasts 1 or 2 minutes and may be followed by confusion.

Focal Onset - Aware (Simple Partial) – Jerking in one or more parts of the body or sensory or perceptual changes that may or may not be obvious to onlookers; the person is aware of what occurs during the seizure.

Atonic (Drop Attacks) – Sudden collapse with recovery within a minute.

Myoclonic – Sudden, brief, massive jerks involving all or part of the body.

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This fact sheet is designed to provide general information about epilepsy and seizures to the public. It is not intended as medical advice. People with epilepsy should not make changes to treatment or activities based on this information without first consulting their health care team.

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