

# Seizures and Epilepsy

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# Seizures

About 2.7 million people in the United States have some form of epilepsy, also called seizure disorder. For the vast majority of cases, no single cause has been determined. People with epilepsy often struggle to overcome low self-esteem and the stigma that is attached to having seizures. Some people mistakenly believe that epilepsy is a form of mental illness or mental retardation. The truth is that many people with seizure disorders lead productive and outwardly normal lives.

# What is a Seizure?

A seizure is rhythmic jerking of the body, or an involuntary change in body movement, sensation, awareness, or behavior. It can last from a few seconds to a few minutes.

Seizures are sometimes called convulsions. Seizures are generally described in two major groups of seizures, primary generalized seizures and partial seizures. The difference in these types are how and where they begin.

# What is Epilepsy?

The word epilepsy is used when more than one seizure has occurred. If someone has a single seizure, they are not usually said to have epilepsy. The terms epilepsy and seizure disorder are often used interchangeably. The onset of epilepsy is most common in children and the elderly. Epilepsy is the fourth most common neurological disorder in the United States after migraine, stroke, and Alzheimer's disease.

# When is a Seizure Not Epilepsy?

Seizures that are first seizures, that are febrile (caused by high fever), or caused by eclampsia (in pregnancy) are not considered epilepsy. Symptoms experienced by a person during a seizure depend on where in the brain the disturbance in electrical activity occurs.

# Why are Seizures Harmful?

A person can be injured during a convulsion, since the body is moving uncontrollably.

Also, the brain can be starved of oxygen during long seizures. This can lead to brain damage. Repeated seizures that last longer than 20-30 minutes can damage the brain's neurons (nerve cells).

# What Causes Seizures/Epilepsy

A seizure occurs when neurons generate uncoordinated electrical discharges that spread throughout the brain. Anything that disturbs the normal pattern of nerve cell activity can lead to seizures. Neurons are very sensitive to abnormal electrical impulses. Illness, injury, and imbalance of the chemicals in the brain that carry messages between nerve cells, and brain abnormalities can be responsible for seizures. Some examples are as follows:

- Heart attacks or strokes, or any condition that deprives the brain from oxygen. Proper treatment of heart disease and high blood pressure can prevent some cases of epilepsy.

# What Causes Seizures/Epilepsy Cont.

- Metabolic disturbances: alcohol withdrawal, severe liver disease, kidney disease.
- Infections such as meningitis and AIDS. Good treatment may prevent seizures.
- Brain tumors or head injury. Wearing seat belts and cycle helmets and using child car seats can prevent brain injury and therefore prevent this type of seizure.
- Presence of certain drugs or stopping certain drugs suddenly ( such as narcotics).
- Illicit drug use, like cocaine, heroin, or PCP.
- Alzheimer's disease
- Neurodegenerative disorders, such as multiple sclerosis.
- Inherited disorders and genetic factors.



# Types of Seizures

There are many different kinds of seizures. The following are 6 main types of seizures:

- Grand mal, or tonic-clonic seizures, involves the entire body in a convulsion. When a person has this type of seizure, he or she may cry out, fall to the floor unconscious, twitch or move uncontrollably, drool, or even lose bladder control. It usually lasts 5-20 minutes. When the seizure is over and the person regains consciousness, he or she feels exhausted and dazed. This is the image most people have when they hear the word epilepsy. Sometimes people experience warning signs beforehand, such as unusual smells, visual changes, or feelings. This warning is called an aura.

# Types of Seizures Cont.

- Complex partial seizures causes a person to appear confused or dazed. He will not be able to respond to questions or directions.
- Petit mal, or absence seizure, causes a brief loss of consciousness without other symptoms. There is no warning. This type of seizure is not noticeable in some people. The person may briefly stop what he or she is doing, stare for 5-10 seconds or blink rapidly, and then continue his or her activity. The person becomes unresponsive, appears to be daydreaming, and cannot be aroused during the activity.
- A drop seizure causes the muscles to go limp. The eyelids may droop, the head may nod, and the person may drop things and often falls to the ground.

# Types of Seizures Cont.

- Status epilepticus is prolonged, repetitive seizure activity that lasts more than 20-30 minutes while the person is unconscious. It is a medical emergency and can result in death if not treated aggressively. It is caused by certain medications, stroke, infection, trauma, cardiac arrest, drug overdose, and brain tumor.
- Myoclonic seizure causes muscles to tense. This type of seizure is characterized by rapid, jerk-like movements that can affect the face, limbs, or axial musculature. They are like being jolted by a mild electric shock and may occur frequently throughout the day.
- There are several other types of seizures as well; simple partial, secondary generalized, and febrile seizures.

# How is Epilepsy Treated?

- There are several ways to treat epilepsy. Treatments can control seizures some of the time in about 80% of people with epilepsy. Once epilepsy is diagnosed, it is crucial that treatment begins as soon as possible.
- There are many different medications and a variety of surgical procedures that may provide good control of seizures. Some people are helped with special diets.
- People with seizure disorders should carry an identification card or wear a bracelet that tells about their condition, their medications, and their doctor's name and phone number.
- Medications to control seizures are called anticonvulsants. These must be taken regularly as directed, without missing doses. Missed doses may cause a single seizure, several seizures, or even death.

# How is Epilepsy Treated Cont.

- People with severe seizures who do not take their medications have a shorter life expectancy and more risk of cognitive impairment.
- Anticonvulsant medications should be taken with food or milk to prevent stomach problems.
- Anticonvulsant medications can cause changes in a person's mental status, including mood and behavior. They can also affect speech, balance, the eyes, the stomach, and the gum tissue in the mouth. Changes in any area of these areas must be reported. Good oral hygiene will help prevent gum problems.

# What to DO if a Seizure Occurs!

1. Roll the person on his/her side to prevent choking on any fluids or vomit.
2. Loosen any tight clothing around neck.
3. Keep the person's airway open. If necessary, grip the person's jaw and tilt his/her head back.
4. DO NOT restrict the person from moving unless he or she is in danger.
5. DO NOT put anything in the person's mouth, not even medicine or liquid. These can cause choking or damage to the person's jaw, tongue, or teeth. Contrary to widespread belief, people cannot swallow their tongues during a seizure or at any other time.

# What to DO is a Seizure Occurs Cont.

6. Remove any sharp or solid objects that the person might hit during the seizure.
7. Note how long the seizure lasts and what symptoms occurred so you can report it as soon as possible to your supervisor or to the emergency personnel if needed.
8. Stay with the person until the seizure ends. After the seizure ends, the person may be sleepy and tired. He or she may have a headache and be confused or embarrassed. Be patient with the person. You may need to help them get cleaned up as they may lose control of their bowel/bladder.

# When is a Seizure an Emergency?

- The person does not begin breathing again and return to consciousness after the seizure stops.
- Another seizure begins before the person regains consciousness.
- The person injures himself/herself during the seizure.