



## **Education**

### **Seizures**

#### **What is a seizure?**

A seizure is a symptom, not a disease. It happens when nerve cells in the brain function abnormally and there is a sudden abnormal electrical signal in the brain. The seizure can cause strange sensations and behavior. It can also cause muscle spasms and a change in or loss of consciousness.

The 2 most common types of seizures are:

- focal or partial seizures, which begin in a specific area of the brain but sometimes may spread to involve all of the brain
- generalized seizures, which seem to involve all of the brain from the start of the seizure.

Partial seizures may cause some numbness or jerking of the limbs, but the common feature is the presence of sensing something that others aren't aware of. For example, you may see flashing lights, have the sensation of a particular taste, or hear noises. With partial seizures you may be awake and remember what happened or you may lose consciousness briefly.

Generalized seizures are further divided into 2 types of seizures based on the pattern of the attack:

- Grand mal seizure: a generalized seizure that starts with a loss of consciousness and falling down, followed by a brief period of rigid muscles and a 1- to 2-minute period of violent, rhythmic jerking. The seizure ends with a few minutes of deep sleep before you return to consciousness. You will probably not remember the seizure and be drowsy for hours after the seizure.
- Absence or petit mal seizure: a short period of staring, fluttering eyelids, or twitching of facial muscles. Each seizure may last only 10 to 30 seconds, but hundreds may happen each day. Usually you do not remember the seizure. Petit mal seizures usually begin when you are a child.

A nearly constant series of seizures or one prolonged seizure, usually a grand mal type, is called status epilepticus. It can be life threatening and is treated as a medical emergency.

#### **How does it occur?**

A seizure is a symptom associated with many diseases and conditions, including:

- head injury
  - brain injury at birth
  - brain infections such as meningitis or encephalitis
  - brain tumor
  - stroke
  - drug intoxication
  - withdrawal from alcohol and drugs such as narcotics, cocaine, tranquilizers, and sleeping pills
  - metabolic imbalances, such as low blood sugar.
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Often the cause of seizures or the abnormal electrical signals in the brain is not known.

### **What are the symptoms?**

Symptoms of a seizure can include:

- uncontrollable twitching or jerking of part of the body (for example, the hand or foot)
- prolonged muscle spasms spreading to the arms and legs
- hallucinations, which may be visual or involve other senses such as hearing, touch, or taste
- intense feelings of fear or déjà vu (the feeling that you are encountering circumstances or a place that you previously experienced)
- aura, a peculiar sensation that occurs just before a seizure and may give you warning that a seizure is about to happen (for example, you may see flashing lights or hear noises)
- loss of consciousness
- loss of control of your bladder muscles so that you wet yourself
- temporary confusion.

### **How is it diagnosed?**

Your health care provider will examine you and take your medical history. You may have blood tests and one or more of the following safe and painless tests or scans:

- EEG, which measures electrical activity in the brain
- MRI (magnetic resonance imaging) scan, which uses magnetism, radio waves, and a computer to produce a picture of the inside of your head
- CT (computed tomography) scan, in which x-rays are taken of your brain at different angles and then combined by a computer.

If you have repeated seizures, your health care provider may diagnose seizure disorder, which is also called epilepsy. This diagnosis means that there is no treatable cause for the seizures, such as low blood sugar.

### **How is it treated?**

The treatment for seizures depends on the cause. Your health care provider may prescribe an anticonvulsant drug. This medicine will help prevent seizures. Your health care provider will adjust the dosage to minimize any side effects from the drug. If your seizures continue while you are taking medicine, your health care provider will:

- Check the level of the drug in your blood.
- Make sure you are taking your medicine as prescribed.
- Make sure you aren't drinking alcohol or using illegal street drugs.
- Check to see if you are taking other medicines that may interfere with the anticonvulsant.

Medicine is the main treatment for seizures, but several new treatments are being evaluated. These include:

- surgery on the area of the brain where the seizures occur
- stimulation of nerves in the neck by a device placed under the skin.

Your friends and family should know **first aid for seizures**. When you have a seizure, they should:

- Loosen clothing around your neck.
  - Not try to hold you down. You should be allowed to move freely. Objects should be moved away from you to avoid injury.
  - Not put anything in your mouth, but check for breathing. (The risk of biting your tongue is less than the danger of inhaling or being injured by anything put in your mouth.)
  - Not move you during a seizure unless there is danger of injury.
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- If you are vomiting, turn you on your side if possible. This will help prevent choking on the vomit.
- After the seizure is over, turn you on your side while you become alert (in case you start vomiting).

Someone should call 911 for emergency help if:

- The seizure lasts more than 3 to 5 minutes.
- You are not fully alert after the seizure has stopped.
- You seem to have stopped breathing.
- A seizure happens after a head injury.

### **How long will the effects last?**

It is not possible to know how long seizures will be a problem for any one person. Absence seizures often stop by the time you are an adult. Other seizures may continue occurring. Depending on the type of seizures you have and how often you have them, your health care provider may be able to recommend that you try slowly decreasing your medicines. You usually need to have not had any seizures while on medicine for at least 3 years before this is even considered. During this time it is very important to avoid driving a car or other activities where your life or the lives of others might be in danger if you had a seizure. Never stop taking your medicine without first checking with your provider.

### **How can I take care of myself?**

- Follow the treatment prescribed by your health care provider.
- Eat a nutritious diet and create a balance of work, rest, recreation, and exercise in your life.
- Wear a medical ID bracelet or necklace.
- Tell your supervisor and co-workers at work or your teachers at school that you may have a seizure. Tell them what to do if one occurs.
- If your seizures are not well controlled, you should avoid high-risk sports such as skiing and scuba diving. Ask your health care provider which sports are safe for you.
- Avoid high-risk jobs that involve heavy or fast-moving equipment, heights, bodies of water, or other situations where you or others might be injured if you have a seizure.
- Ask your health care provider when you may safely drive a car again. In some states you must report a history of seizures when you apply for a driver's license. Check with your state's Department of Motor Vehicles for specific rules.
- Keep a positive attitude and develop techniques to lessen stress.

### **What can I do to help prevent seizures?**

To help prevent further seizures:

- Take your medicine as directed.
- Make sure you get enough sleep every night. Getting too little sleep can be a major cause of seizures if you have a seizure disorder.
- Avoid alcohol.
- Avoid mood-altering drugs, including stimulants and sedatives.
- If you start to develop a fever, reduce it promptly with aspirin or acetaminophen.
- Call your health care provider if you have side effects from your medicine or if the seizures continue or increase.
- Keep all of your follow-up appointments with your health care provider.

For more information, call or write:

Epilepsy Foundation of America Phone: 800-332-1000 Web site: <http://www.epilepsyfoundation.org> Answers specific questions from callers, referrals to local chapters, catalog of educational materials.

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