



Understanding Epilepsy



Berit, diagnosed in 2005,
with her mother, Jenine.



What Are Seizures and Epilepsy?

Epilepsy is a medical condition where a person has recurring unprovoked seizures. Having a single seizure does not mean that a person has epilepsy. Many people have a single isolated seizure and don't go on to develop epilepsy. Seizures are short episodes when a person does not function normally because of abnormal electrical discharges in the brain. Nerve cells communicate with each other through electrical impulses. During a seizure, these impulses become overactive or occur at the same time, which leads to irregular brain activity. This can cause changes in behavior and body functioning. Epilepsy affects nearly 3 million people of all ages in the United States.

What Causes Epilepsy?

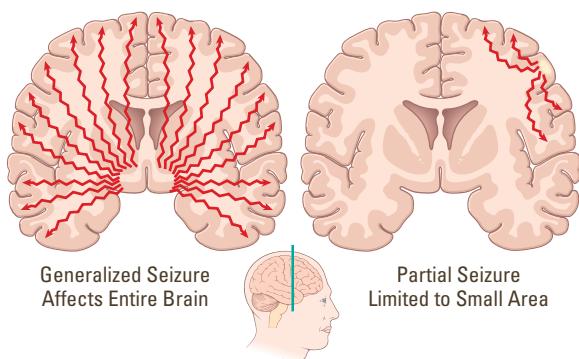
Epilepsy does not have a single cause. In fact, for many people with epilepsy, no cause is ever found. Some known causes include:

- Developmental abnormalities in the brain
- Infections that injure the brain
- Lack of oxygen to the brain
- Disturbance in blood circulation to the brain (stroke and other vascular problems)
- Tumors of the brain
- Previous trauma (such as brain injury)
- Genetic Causes

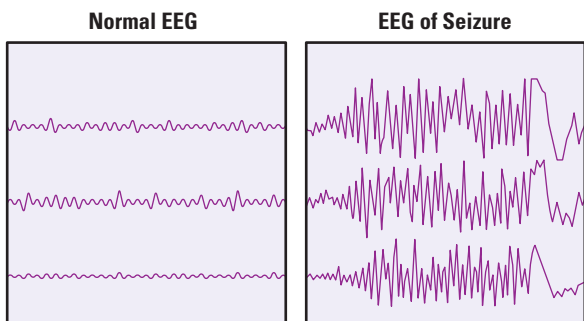
Did you know?

Neurologists are medical doctors who specialize in disorders of the brain and nerves. They are the specialists who most often diagnose and treat people with epilepsy.

Cross Section of the Brain



Normal EEG and EEG of Seizure



What Are the Symptoms?

The most visible sign of epilepsy is a seizure. Seizures usually last from seconds to several minutes. There are many types of seizures. Some are severe. Some are subtle. People having a seizure might not be able to respond to others. They may not remember the seizure. Sometimes a seizure will be widespread, causing symptoms throughout the body.

Some of the symptoms and behaviors that can occur during a seizure include:

- Convulsions (uncontrollable muscle stiffening and shaking)
- Brief staring spells
- Repetitive, automatic behavior, such as chewing movements
- Decreased awareness of what is going on

How Is Epilepsy Diagnosed?

Your neurologist will ask you and your family members or other observers about any seizure-like episodes you may have experienced. Your neurologist will need to understand your family's medical history to see whether you have an inherited form of epilepsy. Your neurologist will also determine whether you have other risk factors for epilepsy and perform a neurologic examination. It is likely that your neurologist will perform several tests, including:

- Electroencephalography (EEG), which records brain wave patterns
- Magnetic resonance imaging (MRI) of the brain
- Blood tests

What Are the Treatment Options?

The most common treatment to prevent seizures is the daily use of medications. Nearly 70 percent of people with epilepsy can have good control of their seizures using medications. Most people whose seizures are controlled with drugs have few restrictions on their activities.

Many medications are available. Some of them work better for one type of epilepsy than another. Talk to your neurologist about the choice of medication, how often it is taken, and any side effects. Side effects may vary from one drug to another and from one person to another. Your neurologist will make sure that the prescribed drug is the best medication for you.

In some cases medication does not work. Then surgery or vagus nerve stimulation may be an option. In vagus nerve stimulation, a device similar to a pacemaker is implanted under the skin on the chest. It reduces seizures by delivering electrical signals to the brain via the vagus nerve in the neck. Epilepsy surgery usually involves identifying and removing the seizure focus. It can be very effective and even curative for some people, even when medications have failed. It is not a "last resort." Talk with your neurologist about the best treatment for your seizures.

Living with Epilepsy

Epilepsy is different for everyone. Some people have seizures that are easily controlled; their epilepsy doesn't have much effect on their daily lives. Others may find that their seizures will have a bigger impact on their lives; they may affect the way they work, socialize, or complete daily activities.

Controlling Seizures

To help control your seizures:

- Take your medication as prescribed
- Maintain regular sleep patterns
- Avoid excessive alcohol use or use of illegal drugs
- Work to reduce and manage stress
- Talk to your neurologist about any changes in symptoms or new symptoms
- Exercise to maintain your overall health

Driving and Safety

In many states, laws require people to report any medical condition that may affect their ability to maintain control of a vehicle. In some states, physicians must report people with such conditions. Sometimes, a physician's approval is needed to be able to drive again. Talk to your neurologist about this issue and your overall safety.

People with epilepsy also need to avoid sports or activities that could be hazardous if they were to lose consciousness or become unable to control their movements. Working at a height should also be avoided, along with swimming or bathing alone.

Women and Epilepsy

Women with epilepsy should talk to their neurologist before becoming pregnant. Most pregnancies in women with epilepsy have a happy outcome and a healthy baby. But both seizures and the drugs that treat seizures can be harmful to the developing baby. Women need to be under close medical care to make sure the epilepsy is under the best control possible.

Partnering with Your Neurologist

To provide the best care, your neurologist needs to know all about your symptoms and medical history. Likewise, you need to get answers to your questions. Keeping a seizure diary is important. In a diary, you record the dates, frequency, and severity of your seizures. Your neurologist can then better understand your condition and develop a treatment plan with a goal of keeping you free of seizures and reducing side effects. Free online and mobile tools can help you track your seizures. You may also use your seizure diary to jot down questions you may want to ask your neurologist during your appointments.

For Family and Friends

Family and friends of people with epilepsy often ask what they should do during a seizure. The main goal is to keep the person safe until the seizure ends. Noticing how long the seizure lasts is helpful. See **Resources** for organizations with information about seizure first aid and many other topics.

Help Us Cure Brain Disease

Make a Donation to Research

The American Brain Foundation supports vital research and education to discover causes, improved treatments, and cures for brain and other nervous system diseases. To learn more or to make a donation to support research, visit www.CureBrainDisease.org.

Make Your Voice Heard

To keep research advancing toward future cures and treatments for brain disease, it is important for people affected by neurologic disorders to advocate for more research funding. Contact your members of Congress and ask them to support neurology research by increasing funding for the National Institutes of Health (NIH). Look up your Congressional representatives at www.senate.gov and www.house.gov. Your voice can make a difference.

Take Part in Research

People are needed for clinical trials that can help find new treatments for neurologic disorders. Clinical trials are research studies. They help ensure that new drugs are both safe and effective. Ask your neurologist how to volunteer for a clinical trial. You can also find trials through patient organizations or the American Academy of Neurology website at www.aan.com/view/clinicaltrials.

Resources

American Academy of Neurology

www.aan.com/patients

(800) 879-1960

The American Academy of Neurology website for patients and caregivers offers a wealth of articles, information about events and resources, and links to support groups, clinical trial information, and more.

Neurology Now® magazine

www.neurologynow.com

(800) 879-1960

Free magazine for patients and caregivers, courtesy of the American Academy of Neurology. Stories about people living with neurologic disorders, the latest information on resources and treatments, and more.

Citizens United for Research in Epilepsy (CURE)

www.CUREepilepsy.org

(800) 765-7118

Epilepsy Foundation

www.epilepsyfoundation.org

(800) 332-1000

Epilepsy Therapy Project

www.epilepsy.com



www.aan.com

(800) 879-1960

The American Academy of Neurology, an association of 25,000 neurologists and neuroscience professionals, is dedicated to promoting the highest quality patient-centered neurologic care. For more information about the American Academy of Neurology, visit *www.aan.com*.

Cover photo by Jim Hopwood