

Carpe Diem – Seize the Day Blog

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What is a focal seizure? What you need to know about focal (partial) seizures? Focal seizures, also called partial seizures, occur in only one part of the brain. There are two types of focal seizure: Partial and complex. In this week's blog, we will look at the types, causes, symptoms, and treatment of focal seizures.

What is a focal seizure? Symptoms of a focal seizure can include abnormal head or eye movements and vision changes. The human brain contains neurons, or brain cells, that use electrical signals to communicate with each other. During a seizure, a person has an abnormal surge of electrical activity in their brain. People can experience physical symptoms before, during, and after the seizure. A seizure is temporary. Unlike generalized seizures, focal seizures originate in only one part of the brain. Generalized seizures originate from the entire brain rather than one area of the brain. However, some focal seizures change to become generalized seizures.

Types of focal seizures

There are two types of focal seizures: simple focal seizures and complex focal seizures.

Simple focal seizure

Doctors also refer to simple focal seizures as focal aware seizures. During a simple focal seizure, a person remains conscious throughout the event and remembers it when it is over. The episode lasts less than a minute.

Complex partial seizure

Doctors also refer to complex partial seizures as focal impaired awareness seizures. When a person has a complex partial seizure, they lose consciousness during the episode and do not remember the seizure after it is over. The seizure may last for more than a minute.

Symptoms

Because focal seizures begin in one part of the brain, the symptoms vary from seizure-to-seizure, depending on the part of the brain affected. Also, usually a person will have symptoms on only one side of the body. However, if the focal seizure becomes a generalized seizure, they may begin to experience convulsions on both sides of the body.

Symptoms that may occur during a focal seizure include:

- muscle contractions.
- odd sensations.
- abnormal head or eye movements.
- automatisms, or repetitive movements, such as skin-picking or lip-smacking
- vision changes.

People who remember having a seizure often describe an aura at the beginning of the seizure. An aura is when a person has a confusing feeling or perceives a light or smell, just before a seizure begins. The aura is the start of the abnormal electrical activity of the seizure in the brain. Following the aura, the individual may then have odd sensations, changes in motor abilities, or visual disturbances, usually on just one side of the body. Bystanders may notice different symptoms, such as staring, rapid eye blinking, or body-stiffening, followed by confusion and tiredness after the event.

Causes and Triggers

A head injury may cause a focal seizure. Seizures can have many different causes and triggers, some of which doctors still do not know.

Potential causes of focal seizures include:

- epilepsy.
- head injury.
- brain tumor.
- stroke.
- surgery.
- infection.
- substance withdrawal.
- medications.
- heat stroke.
- low blood sugar.

Potential triggers of focal seizures include:

- sleep deprivation.
- illness.
- flashing lights.
- alcohol or drug use.
- stress.
- low blood sugar.
- certain medications.

Diagnosis

Doctors can diagnose a seizure based on a person's account of the event. However, a bystander's report can be more reliable than the person's report, so clinicians prefer to hear both accounts when possible. A doctor will try to figure out whether the seizure was focal or generalized. They will also attempt to distinguish the seizure episode from other events that look like seizures.

Doctors will take note of any potential triggers for a seizure. If they are unable to identify any, they will then assess how likely the person is to have another seizure. If there are risk factors for another seizure, a doctor might decide if a person would benefit from medication.

During the physical examination, a doctor will look for signs that a person may have a condition that causes seizures, such as a brain infection or chronic syndromes, such as neurofibromatosis or tuberous sclerosis.

Doctors may also order blood tests, imaging scans, and spinal taps. Options for neuroimaging include CT scans or MRI scans. Finally, they may recommend electroencephalography, which is a procedure that monitors the activity in the brain.

Treatment

Doctors prescribe medications to treat focal seizures during the event as well as to prevent future seizures. When possible, they will try to treat the underlying cause. Doctors use antiepileptic medications to prevent seizure. Several options are available for focal seizures. They come in two categories: broad-spectrum antiepileptic medications and narrow-spectrum antiepileptic medications.

Examples of broad-spectrum antiepileptic medications include:

- lamotrigine
- levetiracetam
- topiramate
- valproate
- zonisamide

Examples of narrow-spectrum antiepileptic medications include:

- carbamazepine
- oxcarbazepine
- phenytoin
- lacosamide

A person can discuss these options with their doctor. They should mention whether they take any other medications or are pregnant, as these factors may impact which medication the doctor recommends.

Outlook

The outlook for someone who has had a focal seizure depends on its underlying cause. However, effective treatments are available no matter what the situation to ensure a person has a good quality of life.

Sleep, eating a healthful diet, exercising regularly, and taking medication as prescribed can improve how a person feels.

Summary

Focal seizures, also called partial seizures, occur when there is a disruption of electrical impulses in one part of the brain.

A person may be aware that they are having a seizure, in this case, a simple focal seizure, or they may not be aware, which is a complex focal seizure.

Some focal seizures occur after a person is exposed to a trigger, but some may happen without a known cause. Treatment often involves antiepileptic medication, and the outlook depends on the underlying cause of the seizure.

Editor's Note: The Carpe Diem – Seize the Day Blog will be distributed and posted weekly.
Always remember – **CARPE DIEM – SEIZE THE DAY!**

Steve.Hutton@epilepsy-ohio.org