

Carpe Diem – Seize the Day Blog

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Frontal lobe epilepsy (FLE) is a type of epilepsy that causes brief focal (partial) seizures stemming from one part of the brain. Unlike other types of epilepsy, these seizures can occur while you are conscious as well as when you are asleep. The National Institute of Neurological Disorders and Stroke (NINDS) estimates that about sixty percent of people with epilepsy experience focal seizures — and frontal lobe epilepsy makes up about 20 to 40 percent of these seizures. Learn more about this common type of epilepsy and learn about seeking medical help if you believe you are experiencing the symptoms of frontal lobe epilepsy.

What exactly is frontal lobe epilepsy (FLE)?

Epilepsy is a long-term (chronic) neurological condition that results in brain cells called neurons sending irregular signals to other cells — this is what leads to seizures commonly associated with epilepsy. These seizures start in different areas of the brain depending on the type of epilepsy you have. FLE is a common type of epilepsy that causes focal seizures in the frontal lobe of the brain located behind your forehead. This area of the brain is important for helping you speak and make voluntary movements.

When you have a focal seizure with FLE, the neurons in the frontal lobe of your brain suddenly activate. You'll be conscious during this type of seizure, though it can also occur while you sleep. If you are awake, you may be aware of the sensory and motor changes taking place. Another common type of seizures seen in epilepsy are called generalized seizures. These occur in more than one area and involve both sides of your brain. They may cause you to fall or lose consciousness. Generalized seizures are not typical in FLE. But some focal seizures associated with other forms of epilepsy can become generalized and spread to other parts of your brain.

What are the symptoms of frontal lobe epilepsy?

The most common signs of frontal lobe epilepsy are repeated focal seizures. You may sometimes feel a seizure coming on when you experience an aura that can cause temporary vision changes, dizziness, or headache. Other symptoms of a focal seizure with FLE can include:

- uncontrollable twitching in your hands, arms, and other parts of the body
- stiffness in the body, making it feel like you cannot move
- unusual movements in one side of the body only (just one hand or leg, for example)
- uncontrolled blinking or mouth movements
- moving your eyes to one side involuntarily
- temporary repetitive movements, such as walking around in a circle
- sudden emotional changes like intense joy, sadness, or fear
- nausea or general uneasiness in your stomach
- unusual odors or tastes
- thrashing of the hands and feet

- bicycle-like movements with your legs
- rocking movements

Children can experience the same symptoms of focal seizures as adults. A child going through a focal seizure can seem like they are ignoring you or appear to be “staring off into space.” Symptoms of FLE commonly happen for about 30 seconds at a time. They can develop while you’re awake or when you’re asleep, but they’re most common during sleep.

What type of epilepsy is FLE?

FLE is part of a group of epilepsies called focal epilepsies. Each type involves seizures that occur in specific parts of the brain. Aside from FLE, this includes epilepsies in the following areas of the brain:

- temporal lobe
- occipital lobe
- parietal lobe

Seizures from FLE often occur during sleep. These seizures are considered a type of FLE known as nocturnal frontal lobe epilepsy (NFLE). NFLE is sometimes misdiagnosed as a sleep disturbance.

What causes frontal lobe epilepsy (FLE)?

The exact causes of FLE are not fully understood. But it’s thought that genetics or structural changes in the brain may be a big contributor.

Epilepsies can also be caused by:

- brain injuries
- stroke
- certain infections, such as encephalitis or meningitis
- brain inflammation
- tumors or cysts in the brain
- irregular blood vessel formations in your central nervous system
- conditions related to your genes
- Seizures associated with frontal lobe epilepsy also tend to occur at random. But some known triggers for epileptic seizures may include:
 - sleep deprivation
 - waking up
 - stress
 - hormonal changes, such as during menstruation
 - alcohol
 - certain medications
 - illegal substances

How is frontal lobe epilepsy (FLE) diagnosed?

Frontal lobe epilepsy is typically diagnosed by a neurologist who specializes in the brain. A doctor may refer you to a neurologist if your symptoms, such as seizures, indicate that you may have epilepsy. A neurologist may conduct a variety of tests, such as:

- an electroencephalogram (EEG) that monitors electrical activity in the brain
- imaging tests like a CT scan or MRI to look for tumors, brain damage, or signs of a recent stroke that could be causing your seizures
- blood tests to detect related genetic or metabolic conditions

To accurately diagnose frontal lobe epilepsy, a doctor also needs to rule out other possible conditions that can cause similar symptoms, such as:

- various mental illnesses
- narcolepsy
- chronic fainting
- other medical conditions having to do with your metabolism or endocrine system

How is frontal lobe epilepsy (FLE) treated?

FLE is primarily treated with medications called anti-epileptic drugs (AEDs). These medications help control activity between neurons to reduce or stop seizures.

Other treatment options suggested by your neurologist or epileptologist may involve a combination of the following:

- vagus nerve stimulation (VNS) devices
- deep brain stimulation (DBS)
- responsive neurostimulator system (RNS)
- brain surgery (for drug resistant FLE)
- dietary changes, such as following a ketogenic diet
- avoiding any known triggers

Possible complications of FLE can include:

- cognitive impairment, which may be more pronounced in school settings
- behavioral challenges
- increased risk of depression

Having any form of epilepsy may also increase the risk of SUDEP (sudden unexplained death in epilepsy). While considered a rare complication, you can reduce your risk of SUDEP by keeping FLE well managed with anti-epileptic drugs.

In summary, frontal lobe epilepsy affects the front portion of your brain and can lead to chronic focal seizures. A neurologist can accurately diagnose frontal lobe epilepsy with a combination of imaging tests and an EEG to look at your brain's electrical activity. Diagnosis also includes a process of elimination for other possible neurological conditions. Talk with your neurologist or epileptologist about your treatment options for frontal lobe epilepsy. These may include a combination of AEDs, lifestyle changes, and surgeries.

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

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