



## All About Focal Seizures

When most people think of epilepsy, they think of the kind of seizure that causes loss of consciousness, falls, and jerky movements affecting the whole body.

However, this type of seizure, while dramatic, is just one form of epilepsy. An equally common form is the focal seizure.

Focal seizures are not easily recognized by the public and are easy to mistake for other conditions.

This lack of understanding can lead to many problems for people with focal seizures and their families.

## About Epilepsy

Epilepsy is a disorder that briefly interrupts the normal electrical activity of the brain.

From time to time, epilepsy produces sudden, uncontrolled bursts of energy in nerve cells of the brain.

These brief disturbances (called seizures) may block or alter awareness. Or they may cause uncontrolled shaking, convulsions, or affect our sensations and emotions in many ways.

A single seizure isn't epilepsy, although the symptoms are the same. Epilepsy is the name given to seizures that happen more than once because of some previous injury or an underlying condition in the brain.

Epilepsy is sometimes called a seizure disorder.

## Seizure Types

There are many different types of seizures. People may experience just one type or more than one. The kind of seizure a person has depends on which part and how much of the brain is affected by the electrical disturbance.

Experts divide seizures into generalized and focal seizures.

Generalized seizures happen when the electrical disturbance sweeps through the whole brain at once, causing loss of consciousness, falls, convulsions (also called tonic-clonic or grand mal seizures) or massive muscle spasms.

Focal seizures happen when the disturbance occurs in just one part of the brain, affecting whatever physical or mental activity that area controls.

Sometimes the seizure activity starts in one area of the brain and then spreads. If the whole brain is affected, it causes a generalized convulsion or fall.



When this happens, doctors call it a focal seizure secondarily generalized.

If it happens frequently, the changes in feeling or movement produced by the focal seizure at the beginning act as a warning of the bigger seizure to come. The warning feeling is sometimes called an aura.

Focal seizures are the most common form of seizure in adults, affecting six out of every ten people with epilepsy. Among children with epilepsy, four out of ten have focal seizures.

Focal seizures may be called focal aware seizures or focal impaired awareness seizures. The main difference between the two types of focal seizures is whether people remain fully aware or experience a change in consciousness during the episode.

### **Focal Aware Seizures**

People who have focal aware seizures do not lose consciousness during the seizure.

They remain awake and aware throughout. Sometimes they can talk quite normally to other people during the seizure. And they can usually remember exactly what happened to them while it was going on.

However, focal aware seizures can affect movement, emotion, sensations, and feelings in unusual and sometimes even frightening ways.

#### **Movement:**

Uncontrolled movements can occur in just about any part of the body. Eyes may move from side to side. There may be blinking, unusual movements of the tongue, twitching of the face.

Some focal aware seizures start out with shaking of a hand or foot, which then spreads to involve an arm or a leg or even one whole side of the body.

Some people, although aware of what's going on, find they can't speak or move until the seizure is over.

#### **Emotions:**

A sudden feeling of fear or a sense that something terrible is about to happen may be caused by a seizure in the part of the brain that controls those emotions.

In rare cases, focal aware seizures can produce feelings of anger and rage, or even sudden joy and happiness.

#### **Sensations:**

All five senses – touch, hearing, taste, sight, and smell – are controlled by various areas of the brain.

Focal Aware Seizures in these areas can produce sensations such as a sense of a breeze on the skin; unusual hissing; buzzing or ringing; voices that are not really there; unpleasant tastes; strange smells (also usually unpleasant); and perhaps most upsetting of all, distortions in the way things look.

For example, a room may suddenly seem narrower or wider than it really is. Objects may seem to move closer or get further away. Part of the body may appear to change in size or shape.

If the area of the brain involved with memory is affected, there may be disturbing visions of people and places from the past.

Sudden nausea or an odd rising feeling in the stomach is quite common. Stomach pain may also, in some cases, be caused by focal aware seizures.

Episodes of sudden sweating, flushing, becoming pale, or having the sensation of gooseflesh are also possible.

Some people even report having out of body experiences during this type of seizure and time may seem distorted as well.

In many ways, our usual comfortable sense of familiar things and places may be disrupted by a focal aware seizure.

Well-known places may suddenly look unfamiliar. On the other hand, new places and events may seem familiar or as if they've happened before, a feeling called *déjà vu*. Focal Aware Seizures can also produce sudden uncontrolled bursts of laughing or crying.

### **Focal Impaired Awareness Seizures**

Focal Impaired Awareness Seizures affect a larger area of the brain and they also affect consciousness.

During a Focal Impaired Awareness Seizure, a person cannot interact normally with other people; is not in control of his movements, speech, or actions; doesn't know what he's doing; and cannot remember afterwards what happened during the seizure.

Although someone may appear to be conscious because he stays on his feet, his eyes are open, and he can move about, it will be an altered consciousness, a dreamlike, almost trancelike state.

A person may even be able to speak, but the words are unlikely to make sense and he or she will not be able to respond to others in an appropriate way.

Although Focal Impaired Awareness Seizures can affect any part of the brain, they often take place in one of the brain's temporal lobes. Because of this, the condition is sometimes called temporal lobe epilepsy.

Psychomotor epilepsy is another term doctors may use to describe focal impaired awareness seizures.

### **What Focal Impaired Awareness Seizures Look Like**

Typically, a Focal Impaired Awareness Seizure starts with a blank stare and loss of contact with surroundings.

This is often followed by chewing movements with the mouth, picking at or fumbling with clothing, mumbling, and performing simple, unorganized movements over and over again.

Sometimes people wander around during Focal Impaired Awareness Seizures. For example, a person might leave a room, go downstairs, and out into the street, completely unaware of what he or she was doing.

In rare cases, someone may try to undress during the seizure, or become very agitated, screaming, running, or making flailing movements with his arms or bicycling movements with his legs.

Other Focal Impaired Awareness Seizures may cause a person to run in apparent fear, or cry out, or repeat the same phrase, over and over again.

People's actions and movements are typically unorganized, confused, and unfocused during a focal impaired awareness seizure.

However, if one suddenly begins while someone is in the middle of a repetitive action, like dealing cards or stirring a cup of coffee, he may stare for a moment then continue the action during the seizure, but in a mechanical, unorganized kind of way.

### **Dealing With Other People**

Because someone having a Focal Impaired Awareness Seizure is unaware of what's going on around him, he won't be able to talk normally with other people during the seizure.

Nor will he be able to follow instructions, or obey police commands, or even recognize danger from heat, water, fire, heights, or other threatening situations.

However, people may be able to follow simple requests made in a calm, friendly voice.

## A Personal Seizure Pattern

As we've described, Focal Aware and Focal Impaired Awareness Seizures can produce a very wide range of changed feelings or behaviour. However, what each person does or feels during a seizure is likely to be the same and occur in the same order each time.

Doctors call this type of seizure-caused behaviour stereotyped. Things To Remember

Although focal seizures affect different physical, emotional, or sensory functions of the brain, they have some things in common:

- They don't last long. Most last only a minute or two, although people may be confused and need a lot more time afterwards to recover fully.
- They end naturally. Except in rare cases, the brain has its own way of bringing the seizure safely to an end after a minute or two.
- You can't stop them. In an emergency, doctors may use drugs to bring a lengthy, non-stop seizure to an end. However, the average person can't do anything except wait for the seizure to run its course and try to protect the person from harm while consciousness is clouded.
- They are not dangerous to others. The movements produced by a seizure are almost always too vague, too unorganized, and too confused to threaten the safety of anyone else.

## Handling Focal Seizures

Focal Aware Seizures don't require any special response except to recognize what's happening and be supportive until the seizure is over.

For Focal Impaired Awareness Seizures, the following steps may help:

- Reassure others. Explain that any unusual behaviour is a temporary condition brought on by a seizure and that it will end in a few minutes.
- Remove hazards or anything that might injure someone who doesn't know where he is or what he's doing.
- Don't restrain the person during a focal impaired awareness seizure, especially if he is already agitated or confused. Efforts to restrain may produce an unconscious aggressive response.
- Guide gently away from anything that could be dangerous, like an open fire or a busy street.
- Stay back until the episode has ended if the person appears obviously agitated or belligerent.
- Be reassuring and helpful as awareness returns. Remember that people may get back their ability and understand before they speak again. Confusion, depression, agitation, irritability, belligerence, or drowsiness are all possible aftereffects of seizures.
- Watch the time. Most focal seizures last a minute or two. But people may feel confused for up to half an hour afterwards. Longer periods of confusion may mean that seizure activity is continuing and the person needs medical help.

## What Causes Focal Seizures?

Just as with any other type of epilepsy, there may be no way of knowing what a person begins to have focal seizures. However, known causes include brain scarring or other damage of various kinds, including:

- Head trauma from a bad fall, an automobile accident, or a severe blow to the head
- Serious infections like encephalitis or meningitis
- Tumors of any kind
- Surgery on the brain to remove a tumor or correct another medical problem

- Strokes that cause bleeding or other damage to the brain
- Alzheimer's disease or other brain disease that affects its internal structure

Arteriosclerosis (hardening of the arteries) or any event that deprives the brain of blood or oxygen

## **Treating Focal Seizures**

Focal seizures are usually treated with medication or, in some cases, surgery.

### **Medication:**

Several drugs are available to treat focal seizures. They may be prescribed as a single drug, or in combination. Medication for epilepsy is designed to prevent seizures. It does not cure the underlying problem.

To get the best possible seizure control, the medicine has to be taken every day, on time, as prescribed. Stopping the medicine suddenly for any reason may cause serious rebound seizures.

Sometimes seizures continue even though the medication is being taken exactly as prescribed. Focal seizures, unfortunately, are often more difficult to control with medication than other types of epilepsy.

When medicines do not work and seizures are frequent, surgery may be considered.

### **Surgery:**

The most common form of surgery for focal seizures identifies and then removes a small area of the brain where the seizures are taking place.

Sometimes seizures stop completely after surgery; sometimes they continue at a reduced level; and sometimes the surgery does not help at all.

Medicine may be needed to maintain control, even after surgery.

If focal seizures are coming from many sites on one side of the brain and are spreading to cause sudden drop attacks, surgery to cut the connections between the two sides of the brain may be considered. This operation, called a corpus callosotomy, is designed to prevent the drop attacks. The focal seizures are not likely to be affected.

### **Vagus nerve stimulation:**

A third type of surgery is used to implant small electronic generator under the skin on the upper left side of the chest. The generator is connected by electrodes under the skin to the vagus nerve, a large nerve in the neck that leads into the brain. This device is then programmed to send regular, small pulses of energy to the nerve.

This type of therapy for focal seizures is known as vagus nerve stimulation (VNS). While VNS is unlikely to stop seizures completely, there's a good chance that two thirds of people who have the implant will have fewer seizures over time.

## **Living With Focal Seizures**

As we've seen, focal seizures take many forms and medical treatment does not always control them. People who live with frequent focal impaired awareness seizures may face many challenges. One involves personal safety.

Things like fire, water, heights, certain machinery, and sharp objects are all potential hazards when people are unaware of what they're doing and don't feel pain.

However, there may be ways to reduce obvious risks. For example:

- Using a microwave oven for cooking instead of a gas or electric range.

- Taking plates to the oven or the stove to serve oneself to avoid having to carry pans of hot food or liquid.
- Using a regular knife for carving, not an electric knife or, if possible, leaving the carving to someone else.
- Keeping electric mixers and other electric appliances far away from the sink or source of water.
- Setting the water heater low enough to prevent scalding during a seizure and taking sit down showers if drop attacks are frequent.
- Making sure open fires have guards and that electric or other space heaters can't be tipped over.
- Not smoking and not carrying lighted candles or hot ashes from the fireplace through the house.
- Padding sharp corners and carpeting floors.

Although some risks can be limited, others are accepted by people with focal seizures as part of living a normal life.

Every day, people with this type of epilepsy go to work, take care of their children, take part in sports, ride buses, cross busy streets, go on escalators, wait for trains, and – perhaps most difficult of all – risk having a seizure in front of a public that too often does not understand.

Dealing with the reactions of others may be the biggest challenge of all for people with focal impaired awareness seizures.

That's because many people find it hard to believe or accept that behaviour that looks deliberate may not be.

Lack of public understanding has led to people with focal impaired awareness seizures being unfairly arrested as drunk or disorderly, being accused by others of unlawful activity, indecent exposure, or drug abuse – all because of actions produced by seizures.

Such actions may even be misdiagnosed as symptoms of mental illness, leading to inappropriate treatment and, in some cases, commitment to an institution.

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**#610 – 4180 Lougheed Hwy, Burnaby, BC V5C 4B3**

**Phone: (604) 875-6704 | Fax: (604) 875-0617 | [info@bcepilepsy.com](mailto:info@bcepilepsy.com) | [www.bcepilepsy.com](http://www.bcepilepsy.com)**