

All About Partial Seizures

EPILEPSY



**All About
Partial Seizures**



EPILEPSY
FOUNDATION®



epilepsy
therapy project

Stronger Together

This pamphlet is designed to provide general information about epilepsy to the public. It does not include medical advice. People with epilepsy should not make changes in treatment or activities based on this information without first consulting a physician.

The brief quotes included in this pamphlet are based on information in the professional literature and on actual reports from individuals and families. However, all names are entirely fictional and any similarity to any person, living or dead, is entirely coincidental.

ALL ABOUT PARTIAL SEIZURES

When most people think of epilepsy, they think of the kind of seizure that causes loss of consciousness, falls, and jerking movements affecting the whole body. However, this type of seizure, while dramatic, is just one form of epilepsy. An equally common form is the partial seizure.

Partial 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 partial seizures and their families.

That's why we've written this pamphlet. We hope it will be the first step towards greater awareness of this type of epilepsy.

"I've had seizures ever since I can remember. I thought everyone got them. I'd be playing and get this weird feeling in my head. Sometimes I couldn't speak. I would just sit and stare blankly into space. My seizures are so mild no one would know I was having one."



ABOUT EPILEPSY

Epilepsy is a disorder which briefly interrupts the normal electrical activity of the brain. From time to time, epilepsy produces sudden, uncontrolled bursts of electrical energy in nerve cells of the brain.

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

A single seizure isn't epilepsy, since epilepsy is defined as a condition of having more than one unprovoked seizure. Epilepsy is sometimes also 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 seizures** and **partial seizures**.

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

Partial seizures happen when the disturbance begins 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 partial seizure secondarily generalized.

Sometimes the changes in feeling or movement produced by the partial seizure at the beginning act as a warning of the bigger seizure to come. The warning feeling is sometimes called an aura.

Partial 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 partial seizures.

"I was talking to a neighbor when my seizure began as it always does, with a feeling of terror, then a feeling of déjà vu. I felt we'd had the conversation before and I knew what he was going to say. But suddenly I couldn't understand anything he was saying. It was like a foreign language. I tried to answer but nothing but gibberish came out. I finally went inside my house and the seizure ended after a few minutes."

Partial seizures may be called **simple partial seizures** or **complex partial seizures**. The main difference between them is whether people remain fully aware or experience a change in consciousness during the episode.



SIMPLE PARTIAL SEIZURES

People who have simple partial seizures do not lose consciousness during the seizure. They remain awake and aware throughout. Sometimes they can talk normally to other people during the seizure. And they can usually remember exactly what happened to them while it was going on. However, simple partial seizures can affect movement, emotion, sensations, and feelings in unusual 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 simple partial 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 fully 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 which controls those emotions. In rare cases, partial seizures can produce feelings of anger and rage, or even sudden joy and happiness.

"My daughter Janie had seizures that affected the part of her brain that had to do with fear and panic. For no reason we could see, she would become suddenly terrified. It happened at school, too. It took a long time to realize what was wrong, get medication, and control the seizures."

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

Simple partial seizures in these areas can produce sensations such as a sense of a breeze on the skin; unusual hissing, buzzing or ringing sounds; voices that are not really there; unpleasant tastes; strange smells (also usually unpleasant); 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.

"I was working in a television station, looking at a weather map, when I suddenly smelled a strange odor and there, in the middle of the map, was a vision of my brother driving a tractor on the farm. The vision suddenly faded, the odor got worse and I felt sick. I couldn't speak or respond at all until about eight minutes later."



Sudden nausea or an odd, rising feeling in the stomach is quite common. Stomach pain also may, in some cases, be caused by simple partial seizures. Episodes of sudden sweating, flushing, becoming pale, or having the sensation of goose-flesh are also possible. Some people even report having out of body experiences during this type of seizure, and time may seem distorted as well.

“When I was 15 I started having some strange feelings. I’d get a déjà vu feeling, a funny smell, and then get dizzy. I was diagnosed with a brain tumor and had it removed. Everything was fine for a while, then the feeling came back and they said I had epilepsy.”

In many ways, our usual, comfortable sense of familiar things and places may be disrupted by a simple partial 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. Simple partial seizures can also produce sudden, uncontrolled bursts of laughter or crying.

“When I have a seizure there’s an odor I smell and then I have blank periods where I will start out in one room and I’ll end up in another room and I won’t know why I was there. Or I’ll blank out and keep on doing whatever I was doing but I won’t know what’s going on at that time.”

COMPLEX PARTIAL SEIZURES

Complex partial seizures affect a larger area of the brain and they also affect consciousness. During a complex partial 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 complex partial seizures can affect any area of the brain, they often take place in one of the brain's two temporal lobes. Because of this, the condition is sometimes called "temporal lobe epilepsy." "Psychomotor epilepsy" is an older alternative term doctors have used to describe some types of complex partial seizures.



WHAT COMPLEX PARTIAL SEIZURES LOOK LIKE

Typically, a complex partial 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.

“When I have a seizure, I have been told I stare at my left hand. I just start rolling my left hand over and staring at it. And I play with my buttons. That’s kind of weird when you’ve got a T-shirt on and you’re picking at your buttons, but that’s one of the things I do.”

Sometimes people wander around during complex partial 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 might 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 complex partial 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 complex partial 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 or she may stare for a moment then continue with the action during the seizure, but in a mechanical, disorganized kind of way.

“When I have a seizure I only know what my husband has told me. My eyes widen. Then I sniff. Then I hug myself and always start to pick at my clothes or try to straighten them out. And then as I’m slowly coming out of the seizure, sometimes I get up and begin to walk. I’ll start talking to the people around me. I’ll say things like, “Please, please.” I’ll say, “I’m sorry, I’m sorry,” over and over again and just try to walk forever. But this is something I never know. I’ve just been told by people around me.”



DEALING WITH OTHER PEOPLE

Because someone having a complex partial 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, some people may be able to follow simple requests made in a calm, friendly voice.

"When I have a seizure I stare and my speech is slurred. I also sit down. I've sat down in the middle of hallways at work, or sat down leaning against the wall. On one occasion I got up from the table and sat down in the middle of the floor in a restaurant."



A PERSONAL SEIZURE PATTERN

As we've described, simple and complex partial seizures can produce a very wide range of changed feelings or behavior. 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 behavior "stereotyped."



THINGS TO REMEMBER

Although partial 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. (However, as described below, it is important not to restrain an individual having a seizure.)

“One time I had a seizure in the street and a police officer grabbed hold of me and I became combative. He lost his hold and noticed that I calmed down right away. He thought this was unusual so he realized I had a medical disorder and wasn’t drunk or on drugs.”

HANDLING PARTIAL SEIZURES

Simple partial seizures don't require any special response except to recognize what's happening and be supportive until the seizure is over.

For **complex partial seizures**, the following steps may help:

- **Reassure others.** Explain that any unusual behavior is a temporary condition brought on by a seizure and that it will end in a few minutes.
- **Remove hazards** or anything from the area that might injure someone who doesn't know where he is or what he's doing.
- **Don't restrain** the person during a complex partial seizure, especially if he or she is already agitated and 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 to hear and understand before they are able to speak again. Confusion, depression, agitation, irritability, belligerence or drowsiness are all possible aftereffects of seizures.
- **Watch the time.** Most partial 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.
- **Call for assistance** if the seizure does not end after 5 minutes.

“During a seizure I’m not aware of anything. Following the seizure I have a kind of anxious feeling. It’s a sense that I know I’m there and I know things are all right but I can’t quite put it together. It’s very helpful if people who are around are reassuring, tell me what happened, where I am. It makes me feel better.”



WHAT CAUSES PARTIAL SEIZURES?

Just as with any other type of epilepsy, there may be no way of knowing why a person begins to have partial 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**, which cause bleeding or other damage to the brain;
- **Alzheimer's disease** or other brain disease which affects its internal structure; and
- **Arteriosclerosis** (hardening of the arteries) or any event that deprives the brain of blood or oxygen.

"Many times Billy would just stare at me, not answer, appear to be unconscious, maybe talk gibberish towards the end and just shut his eyes and feel tired when it was over. We have even walked down the street or walked in the mall and he continues walking even while he's having the seizure..."

TREATING PARTIAL SEIZURES

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

Medication. Several drugs are available to treat partial 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.

Partial seizures, unfortunately, are often more difficult to control with medication than other types of epilepsy. When two or three medicines fail to control seizures, it is important for patients to be referred to an epilepsy center for further evaluation and consideration for surgery.

Surgery. The most common form of surgery for partial 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.

Vagus nerve stimulation. Another type of surgery is used to implant a 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.

The device is then programmed to send regular, small pulses of energy to the nerve. This type of therapy for partial seizures is called 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 PARTIAL SEIZURES

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

Things like fire, heat, 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:

- Use a microwave oven for cooking instead of a gas or electric range;
- Take plates to the oven or the stove to serve oneself to avoid having to carry pans of hot food or liquid;
- Use a regular knife for carving, not an electric knife or, if possible, leaving the carving to someone else;
- Keep electric mixers and other electric appliances far away from the sink or source of water;
- Set the water heater low enough to prevent scalding during a seizure and taking sit down showers if drop attacks are frequent;
- Make sure open fires have guards and that electric or other space heaters can't be tipped over;
- Take showers instead of baths.
- Don't smoke or carry lighted candles or hot ashes from the fireplace through the house;
- Limit ironing as much as possible;
- Pad sharp corners and carpet floors.

"I had a bad automobile accident five years ago. I was in a coma for three weeks. A few months later the seizures started. I'd go to bed at night and wake up standing in the middle of the street, in my pajamas. I take two kinds of medicine but I still have seizures. I know my neighbors don't understand."

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

Every day, people living 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 complex partial seizures. That's because many people find it hard to believe or accept that behavior which looks deliberate may not be.

Lack of public understanding has led to people with complex partial 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.

The Epilepsy Foundation and its network of affiliates are committed to making the public more aware of this type of epilepsy so that painful misunderstandings can be avoided. We invite you, as a reader of this pamphlet, to share it with others and to join us in our campaign to improve public awareness of partial seizures.

THE EPILEPSY FOUNDATION

The Epilepsy Foundation of America® is the national voluntary agency dedicated solely to the welfare of the more than 2 million people with epilepsy in the U.S. and their families. The organization works to ensure that people with seizures are able to participate in all life experiences; to improve how people with epilepsy are perceived, accepted and valued in society; and to promote research for a cure. In addition to programs conducted at the national level, epilepsy clients throughout the U.S. are served by 47 Epilepsy Foundation affiliates around the country

If you or anyone you know has questions about epilepsy and seizure disorders visit us at **www.epilepsy.com** or call **800-332-1000**. Our website has in depth information about epilepsy and seizures and offers people affected by epilepsy to connect with others through our online forums and Web events. Sign up to receive our weekly epilepsy e-newsletter covering the latest on treatments and medicines, ground-breaking research, safety tips, personal stories, advice for parents and more.

NOTES

This publication was made possible with funding from the Centers for Disease Control and Prevention (CDC) under cooperative agreement number 1U58DP003832-03. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.



EPILEPSY
FOUNDATION®



epilepsy
therapy project

Stronger Together

800.332.1000
www.epilepsyfoundation.org