

What you need to know about different types and different stages of seizures



Seizure Phases or Stages

There are several major phases (or stages) of seizures: You'll notice a lot of the words related to seizures include *ictal* in them. That is because the words themselves explain their relation to the seizures. *Preictal* is before the seizure, *ictal* is during the seizure, *interictal* is between seizures and *postictal* is after the seizure.

Preictal or prodrome — this is the time before the seizure. It can last from minutes to days and make people act and feel differently. Not everyone experiences something at this stage of a seizure. Some people who do experience a preictal stage use it as a warning so they can prepare for the seizure. Of course, sometimes all it does is make you not feel very good for a few hours or a day before the seizure, while it doesn't give you much of a clue about when the seizure will actually take place. Many people have an aura before a seizure. Technically, an aura is a simple partial seizure. Realistically, an aura might make you see, smell, hear or taste something for no reason. It can even just make you a bit nauseous, give you a weird feeling in your stomach, cause a ringing in your ears, or even just give you a funny feeling or a sense of déjà vu...

Ictal — this is the actual seizure. During this time there will be actual physical changes in the person's body. After all, it's at this point that the electrical storm in the person's brain thunders to life. If the person with epilepsy were to be hooked up to any medical devices at this point, they'd show cardiovascular, metabolic and EEG changes. A lot of these changes will help a neurologist determine the seizure's type and point of origin, both of which are very important in treating the epilepsy. We'll cover the different types of seizures a person might experience when they're *ictal* elsewhere in this pamphlet.

Interictal — this is the time between seizures. A lot of people with epilepsy, including more than half of all people with temporal lobe epilepsy, suffer emotional disturbances between seizures. These disturbances range from mild fear to pathological levels of anxiety and depression. However, anxiety and depression are by far the most common, and these interictal problems are often more incapacitating and difficult to control than the seizures themselves.

Co/interictal — this is the final phase, the often slow recovery period after a seizure. It can last from minutes to hours and vary quite a bit, partly depending on the type of seizure experienced, the intensity of it, and how long it lasted. It might leave the person feeling tired and/or bewildered, among other things, with a change in his or her consciousness or behavior. Sometimes symptoms from this phase can help doctors diagnose the part of the brain involved in the seizure. Many people will not remember anything that happened during the seizure.

For more information and to find your local Epilepsy Foundation affiliate, visit the Epilepsy Foundation at www.EpilepsyFoundation.org.

International Classification of Seizures

Generalized Seizures

- A. Absence seizures (formerly called petit mal)
- B. Myoclonic seizures
- C. Clonic seizures
- D. Tonic seizures
- E. Tonic clonic seizures (formerly called grand mal)
- F. Atonic seizures (drop attacks)

Partial Seizures

A. Simple partial seizures (consciousness not impaired)

- 1. with motor symptoms
- 2. with sensory symptoms
- 3. with autonomic symptoms
- 4. with psychic symptoms

B. Complex partial seizures (with impaired consciousness)

- I. simple partial seizures followed by impairment of consciousness
- with impairment of consciousness at seizure onset

C. Partial seizures evolving to secondarily generalized seizures

- 1. simple partial secondarily generalized
- 2. complex partial secondarily generalized
- 3. simple partial evolving to complex partial evolving to generalized

Types of Seizures

There are many different types of seizures. Generally, different types of seizures are categorized based on what part of the brain is involved in a seizure. People might experience one type or more than one type of seizure.

Experts divide seizures into generalized seizures, which affect the entire brain, and partial seizures, which affect only a part of the brain. Each comprises a number of specific types of seizures, like tonic-clonic and absence seizures.

The four main sub-categories of seizures are:

- Generalized Seizures, which affect the entire brain
- Partial Seizures, which affect a part of the brain
- Non-Epileptic Seizures, which aren't related to epilepsy at all, but are caused by other things, like diabetes, a high fever, or something else entirely
- Status Epilepticus, which is a continuing seizure and one of the few reasons emergency personnel should be contacted

About the only time medical attention is required when someone has a seizure is:

- If they're pregnant
- If they've injured themselves during the seizure (for instance, by falling or hitting something while they're seizing)
- If it's the first time they've had a seizure
- If their seizure continues for more than 5 minutes (a condition known as status epilepticus)

Partial Seizures

Partial seizures (simple partial seizures and complex partial seizures) are the most common type of seizures. They occur when only a part of one side of the brain is affected. With these seizures, the activity can start in one place in the brain, then move to another, or it could just stay in the one area. Partial seizures affect whatever function the part of the brain they're occurring in controls. If the seizure happens in the brain's speech area, a person's ability to talk will be affected. Almost any sort of movement or feeling can be a part of a partial seizure. If the seizure starts off as a partial seizure, then spreads to include the entire brain, it's referred to as a partial seizure secondarily

generalized. This means it started as a partial seizure then became a generalized seizure.

People retain consciousness during partial seizures. Sometimes they can even continue conversations through the seizure, and they'll usually remember what happened after the seizure.

There are two main types of partial seizures:

• Simple partial seizures: A person having a simple partial seizure will often stay awake and aware throughout the seizure—but, although they know what's happening, are unable to speak and/or move until the seizure is over. Depending on the part of the brain affected during the seizure, the person might move uncontrollably. For instance, they might twitch, roll their eyes, shake their hands or feet or blink rapidly. These movements might start slowly, then increase in rapidity or in the parts of the body involved. What starts as a hand bobbing up and down, or even half of the body moving in a rhythmic manner.

If the seizure affects a different part of the brain, the person's emotions or senses might be affected instead. So they might have a feeling of déjà vu or that something terrible is about to happen. They might also suddenly become very angry or very happy.

If their senses have been affected, they might hear, smell, taste, feel or see something that is not actually there. They might feel a breeze when they're indoors; hear hearing, buzzing or talking that isn't happening; think something is narrower or wider—or closer or farther—than it is. They could even hallucinate something from their past. They might even burst out laughing or crying, and, like movement-oriented seizures, these seizures might start small or mildly and then increase in intensity.

Complex partial seizures:

These seizures affect a greater part of the brain than simple partial seizures and they also affect consciousness. Although they can affect any part of the brain, they generally take place in one of the brain's two temporal lobes. Because of this, people prone to complex partial seizures are often said to have temporal lobe epilepsy (TLE). Usually, when a person has a complex partial

blankly at nothing in particular. They'll stop interacting with their environment and with other people. (During simple partial seizures they can interact with other people.) They will then often start chewing, picking at their clothes, mumbling nothing in particular, performing repetitive motions, or any combination of these simple, unorganized movements. During complex partial seizures, people might appear conscious and normal because they'll usually move about and remain standing with their eyes open—but they'll be experiencing an altered consciousness. In other words, it'll be rather like they're dreaming or in a trance. If they talk, which they might be able to, they'll likely not make sense—and they won't be able to respond appropriately to others.

seizure, they'll stop what they're doing and stare

Generalized Seizures

Generalized seizures (absence, atonic, tonic clonic, myoclonic) involve both sides of the brain, while partial (simple and complex) seizures involve only a part of the brain.

- Absence seizures (formerly known as petit mal seizure): These seizures usually last from 2 to 15 seconds and may occur just a few times a day, or more than 100 times in a single day. They usually present as bland staring, which one might mistake for daydreaming, physical automatisms, such as lip smacking, fumbling or picking at clothes, or twitching of facial or body muscles. Afterward, the person will likely have no memory of what happened while he or she had the seizure. A lot of people won't recognize absence seizures as seizures. They occur mostly among children, starting between the age of 4 and 12. They rarely begin after age 20. Most children with typical absence seizures are otherwise normal.
- Generalized tonic clonic seizure (formerly known as grand mal seizures; also known as convulsions or convulsive seizures): When most people think of seizures or epilepsy, they're thinking of this type of seizure. When a person has a tonic clonic seizure, his or her arms and legs will first stiffen. This is the tonic stage. His or her limbs and head will then begin jerking, which is the clonic phase. Like all seizures,

these can vary mostly with people experiencing either the tonic or clonic phase by itself. During the seizure, the person might bite their tongue or the inside of his or her mouth, experience incontinence, or even decrease or cease his or her breathing (in this case, his or her breathing should return to normal during the tonic (jerking) portion of the seizure). Afterward, the person will likely be confused, not remember what happened. need to sleep for a while and might have a headache. Depending on the person, it can take them from minutes to hours to fully recover. For people with tonic clonic seizures, it is especially important to make sure that those who spend much time around them know correct seizure first aid.

- Myoclonic seizures: These seizures cause parts of a person's body to jerk—for instance, his or her arm or leg might suddenly twitch. If you've ever had a foot twitch suddenly when you're asleep, that would be a lot like a myoclonic jerk (but it does NOT mean you have epilepsy. The jerking of feet while you're asleep are a type of nonepileptic behavior.) Someone who has myoclonic seizures might be thought of as clumsy. First aid is usually not required for myoclonic seizures, but if it is your first seizure of this type, you might want to visit a physician to determine what is causing it.
- **Atonic seizures** (also known as drop attacks, or astatic or akinetic seizures): These seizures make a part, or all, of a person's body suddenly go limp. This means that the person's head might suddenly drop, or he or she could slump down or even totally collapse, dropping to the floor (thus the name drop attack). Because of the sudden and complete nature of these types of seizures, they can be dangerous to the person having one. This is why children and adults who experience these types of seizures sometimes wear protective headgear. To make matters worse, these types of seizures often won't respond to epilepsy medications. No first aid is needed for a person having an atonic seizure, unless the person has hurt himself or herself during a fall, or if this is the first time he or she has had an atonic seizure.

This pamphlet is intended to provide basic information about epilepsy to the general public. It is not intended to be, nor is it, medical advice. Readers are warned against changing medical schedules or life activities based on this information without first consulting a physician.

About the Epilepsy Foundation

The Epilepsy Foundation, a national nonprofit with affiliated organizations throughout the United States, has led the fight against epilepsy since 1968. The Epilepsy Foundation will ensure that people with seizures are able to participate in all life experiences and will prevent, control and cure epilepsy through services, education, advocacy and research. For additional information, please call 1-800-332-1000 or visit www.epilepsyfoundation.org.

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