



Seizures and Syndromes

Types of Seizures

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 that produces seizures. Experts divide seizures into generalized seizures (absence, atonic, tonic-clonic, myoclonic), partial (simple and complex) seizures, nonepileptic seizures and status epilepticus.

Generalized Seizures

Generalized seizures affect both cerebral hemispheres (sides of the brain) from the beginning of the seizure. They produce loss of consciousness, either briefly or for a longer period of time, and are sub-categorized into several major types: generalized tonic clonic; myoclonic; absence; and atonic.

Type	Duration	Seizure Symptoms	Postictal (post-seizure) Symptoms
Absence (petit mal seizure)	2 to 15 seconds	Stare Eyes fluttering Automatisms (such as lip smacking, picking at clothes, fumbling) if prolonged	Amnesia for seizure events No confusion Promptly resumes activity
Generalized Tonic-Clonic (grand mal)	1 to 2 minutes	A cry Fall Tonicity (rigidity) Clonicity (jerking) May have cyanosis	Amnesia for seizure events Confusion Deep sleep

Generalized tonic clonic seizures (grand mal seizures) are the most common and best known type of generalized seizure. They begin with stiffening of the limbs (the tonic phase), followed by jerking of the limbs and face (the clonic phase).

Myoclonic seizures are rapid, brief contractions of bodily muscles, which usually occur at the same time on both sides of the body. Occasionally, they involve one arm or a foot. People usually think of them as sudden jerks or clumsiness. A variant of the experience, common to many people who do not have epilepsy, is the sudden jerk of a foot during sleep. First aid is usually not needed, however, a person having a myoclonic seizure for the first time should receive a thorough medical evaluation.

Atonic seizures produce an abrupt loss of muscle tone. Other names for this type of seizure include drop attacks, astatic or akinetic seizures. They produce head drops, loss of posture, or sudden collapse. Because they are so abrupt, without any warning, and because the people who experience them fall with force, atonic seizures can result in injuries to the head and face.

- **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.

Nonepileptic Seizures

Nonepileptic seizures are episodes that briefly change a person's behavior and often look like epileptic seizures. The person having nonepileptic seizures may have internal sensations that resemble those felt during an epileptic seizure. The difference in these two kinds of episodes is often hard to recognize by just watching the event, even by trained medical personnel.

But there is an important difference. Epileptic seizures are caused by abnormal electrical changes in the brain and, in particular, in its outer layer, called the cortex. Nonepileptic seizures are not caused by electrical disruptions in the brain.

Status Epilepticus

Most seizures end after a few moments or a few minutes. If seizures are prolonged, or occur in a series, there is an increased risk of status epilepticus. The term literally means a continuous state of seizure.

First aid for epilepsy is basically simple. The goal is to keep the person safe until the seizure stops naturally by itself. It is important for the public to know how to respond to all seizures, including the most noticeable kind—generalized tonic-clonic seizures, or convulsions.

Should a seizure occur, follow the steps below:

- Keep calm and reassure other people who may be nearby.
- Don't hold the person down or try to stop his movements.
- Time the seizure with your watch.
- Clear the area around the person of anything hard or sharp.
- Loosen ties or anything around the neck that may make breathing difficult.
- Put something flat and soft, like a folded jacket, under the head.
- Turn him or her gently onto one side. This will help keep the airway clear. Do not try to force the mouth open with any hard implement or with fingers. It is not true that a person having a seizure can swallow his tongue. Efforts to hold the tongue down can cause injury.
- Don't attempt artificial respiration except in the unlikely event that a person does not start breathing again after the seizure has stopped.
- Stay with the person until the seizure ends naturally.
- Be friendly and reassuring as consciousness returns.

No Need to Call an Ambulance, if:

- if medical I.D. jewelry or card says "epilepsy," and
- if the seizure ends in under five minutes, and
- if consciousness returns without further incident, and
- if there are no signs of injury, physical distress, or pregnancy.

An Ambulance Should Be Called When;

- if the seizure has happened in water.
- if there's no medical I.D., and no way of knowing whether the seizure is caused by epilepsy.
- if the person is pregnant, injured, or diabetic.
- if the seizure continues for more than five minutes.
- if a second seizure starts shortly after the first has ended.
- if consciousness does not start to return after the shaking has stopped (for tonic-clonic seizures)

If the ambulance arrives after consciousness has returned, the person should be asked whether the seizure was associated with epilepsy and whether emergency room care is wanted.

Standard seizure precautions:

Below are some general precautions for children with a history of seizures or epilepsy:

- 1) Discourage climbing higher than 10 feet.
- 2) Do not let child take a tub bath alone, as some children have drowned in the bath during a seizure. If they are too old for supervision, they should take a shower and leave the door unlocked.
- 3) There should be no unsupervised swimming; they should swim with other swimmers who are strong enough to rescue them.
- 4) As with all children, children with epilepsy should wear a helmet when riding a bike or rollerblades.
- 5) If your child is old enough to drive, they should not drive unless they have been seizure free for six months and you have contacted the physician.

If a seizure occurs:

- 1) DO protect from nearby hazards. Loosen ties and collars.
- 2) DO turn on side to keep airway clear unless injury exists. If single seizure lasts less than 5 minutes, ask if medical evaluation is wanted.
- 3) DO call an ambulance if seizure lasts longer than 5 minutes, it is the first seizure, the person is pregnant or has diabetes.
- 4) DON'T put any object in the mouth or try to hold the tongue.
- 5) DON'T restrain.
- 6) DON'T give liquids.
- 7) DON'T use artificial respiration.

While there can't be a universal rule applicable to every possible situation and person, older children and adults also need to take reasonable precautions or restrictions with more dangerous activities, such as operating heavy machinery and playing contact sports.

Despite the above precautions, children with epilepsy should be encouraged to lead as normal a life as possible. Using common sense, there is no reason that people with epilepsy cannot participate fully in the vast majority of activities that life offers.