

Seizure Disorders

December 4, 2008

A seizure is a **change in sensation, awareness, or behavior brought about by an electrical disturbance in the brain**. Seizures can **cause involuntary changes in body movement or function, sensation, awareness, or behavior**. A seizure can last from a few seconds to status epilepticus, a continuous seizure that will not stop without intervention. Seizure is often associated with a sudden and involuntary contraction of a group of muscles. However, a seizure can also be as subtle as marching numbness of a part of the body, a brief loss of memory, sparkling or flashes, sensing an unpleasant odor, a strange epigastric sensation or a sensation of fear. Therefore seizures are typically classified as **motor, sensory, autonomic, emotional or cognitive**.

In some cases, the full onset of a seizure event is preceded by some of the sensations described above. These sensations can serve as a warning to the sufferer that a full tonic-clonic seizure is about to occur. These **"warning sensations" are cumulatively called an *aura***.

Symptoms experienced by a person during a seizure depend on where in the brain the disturbance in electrical activity occurs. A person having a tonic-clonic seizure may cry out, lose consciousness and fall to the ground, and convulse, often violently. Some people have seizures that are not noticeable to others. Sometimes, the only clue that a person is having an absence seizure is rapid blinking or a few seconds of staring into space.

Partial seizures begin in a specific part of the brain. These include:

- **Simple Partial**—A seizure that does not alter consciousness. May produce abnormal sensations, such as an unpleasant smell, or a motor movement, such as jerking of the arm
- **Complex Partial**—Seizure that alters consciousness causing confusion
- **Complex Partial With Secondary Generalization**—Seizure that starts as complex partial but becomes a generalized seizure affecting both sides of the brain

Generalized seizures affect both hemispheres of the brain. These include:

- **Absence:** Previously known as petit mal, triggers a short lapse in consciousness. Most often seen in children
- **Atonic:** Previously known as a drop attack, causes a complete loss of muscle control and results in collapse
- **Myoclonic:** Triggers sudden jerking in the muscles, often in the arms and legs
- **Tonic-clonic(*grand mal*):** Triggers a fall to the ground (tonic phase) followed by jerking movements (clonic phase)

Types of seizures:

- **Febrile seizures:** Caused by high fever in young children; does not always lead to epilepsy
- **Status epilepticus:** Severe, life-threatening, nonstop seizures; can be either partial or generalized
- **Epilepsy:** A neurological condition that causes the brain to produce sudden bursts of electrical energy.
- Seizures can also be caused by **traumatic brain injuries** or **stroke**

DSES Seizure belt policy: Students wear a seizure specific belt that attaches to the chair lift if they have had a seizure or changed medication within the last three months. Depending on the comfort level of the student and instructor, a student may use a belt even if he or she has not had a seizure in the last three months.

Expert in Seizure Disorders? DSES is always looking for volunteers to help teach or give presentations!!

Resources and Additional Information

Epilepsy Foundation; www.epilepsyfoundation.org

Epilepsy Advocate; www.epilepsyadvocate.com