

# EPILEPSY

## Common Names for Disorder:

- Seizure Disorder

## Causes/Etiology:

- Research suggests that genetic abnormalities contribute significantly to epilepsy
- Head injuries are responsible for many cases
- Stroke and other diseases that affect the vascular system can lead to brain damage that may trigger epilepsy
- Brain infections
- Poisoning from exposure to lead, carbon monoxide, and other toxins

## Incidence:

- About 2.7 million Americans have been treated for epilepsy in the past 5 years
- An estimated 1 in 10 people will experience a seizure at some time in their life
- Onset is most common during childhood and after age 65, but the condition can occur at any age
- Many children with epilepsy outgrow the condition with age

## Characteristics:

- Epilepsy is a chronic disorder of the brain that causes a tendency to have recurrent seizures. Two or more seizures must occur before a person can receive the diagnosis of epilepsy.
- Doctors classify seizures as either **partial** or **generalized**, based on how the abnormal brain activity begins:

\*When seizures appear to result from abnormal activity in just one part of the brain, they're called *partial* seizures

\*When seizures seem to involve most or all of the brain, the seizures are called *generalized*

### *Major Types of Epilepsy:*

Types of Epilepsy	Generalized Epilepsy	Partial Epilepsy
Idiopathic (genetic causes)	- Childhood absence epilepsy - Juvenile myoclonic epilepsy - Epilepsy with grand-mal seizures on awakening Others	- Benign focal epilepsy of childhood
Symptomatic (cause unknown) or cryptogenic (cause unknown)	- West syndrome - Lennox-Gastaut syndrome - Others	- Temporal lobe epilepsy - Frontal lobe epilepsy Others

**Generalized Seizures:**

Generalized Seizures (Produced by the entire brain)	Symptoms
1. "Grand Mal" or Generalized tonic-clonic	Unconsciousness, convulsions, muscle rigidity
2. Absence	Brief loss of consciousness
3. Myoclonic	Sporadic (isolated), jerking movements
4. Clonic	Repetitive, jerking movements
5. Tonic	Muscle stiffness, rigidity
6. Atonic	Loss of muscle tone

**Partial Seizures**

Partial Seizures (Produced by a small area of the brain)	Symptoms
1. <b>Simple</b> (awareness is retained) a. <b>Simple Motor</b> b. <b>Simple Sensory</b> c. <b>Simple Psychological</b>	a. Jerking, muscle rigidity, spasms, head-turning b. Unusual sensations affecting either the vision, hearing, smell taste or touch c. Memory or emotional disturbances
2. <b>Complex</b> (Impairment of awareness)	Automatisms such as lip smacking, chewing, fidgeting, walking and other repetitive, involuntary but coordinated movements
3. <b>Partial seizure with secondary generalization</b>	Symptoms that are initially associated with a preservation of consciousness that then evolves into a loss of consciousness and convulsions

**IDEA Category:**

- Epilepsy is classified as "Other Health Impaired" (OHI)
- It may also be possible to classify someone as "Developmentally Delayed," assuming they meet the criteria necessary for fulfillment

**DSM-IV Category:**

- Epilepsy does not have a DSM IV diagnosis.
- It is diagnosed under Axis III as ICD-9 diagnostic codes: 345.00 = *petit mal seizures*, 345.10 = *grand mal seizures*, 345.40 = *partial seizures with impairment of consciousness*, 345.50 = *partial seizures with no impairment of consciousness*

**Deficits:**

- Seizures may produce injuries associated with falling, such as a head injury

- Patients with epilepsy are more prone to cognitive and behavioral deficits. Epilepsy may induce or exacerbate an underlying cognitive impairment, a variety of factors contribute to such deficits, i.e., underlying neuropathology, seizure type, age of onset, psychosocial problems, and treatment side effects
- The cognitive problems most commonly found are deficits in attention, concentration, memory, and word finding
- Psychopathology in epilepsy may be manifested as depression, anxiety, psychoses, and/or atypical personality traits

### Long-term Developmental Outcomes:

- Most people with epilepsy can become free of their seizures by using a single anti-epileptic drug
- For others, medication can make seizures less frequent and less intense
- More than half of children with epilepsy, whose seizures are controlled by medications, can eventually stop their medications and live a seizure-free life
- Not uncommon for people with epilepsy, especially children, to develop behavioral and emotional problems, sometimes as the consequence of embarrassment and frustration or bullying, teasing, or avoidance in school and other social settings

### Assessment Approaches:

- Approaches in the screening and diagnosis process (conducted by Primary care Physicians/Neurologists):

**Medical History-** descriptions of past seizures, from the individual and from others who have observed the seizures; doctor may also need to know about current and past medical conditions and how they've been treated

**Physical and neurological examination-** A neurological examination may include testing reflexes, muscle tone and strength, the function of one's senses, and gait, posture, coordination and balance. The doctor may also ask questions to test thinking, judgment and memory.

**Blood tests-** the doctor may want to take samples of blood to be tested for chemical imbalances that may be the cause of seizures

**Electroencephalogram (EEG)-** this procedure records the electrical activity of your brain. An EEG helps determine what type of seizures or epilepsy you have and from which part of the brain seizures may start. \*\*must remember that a negative EEG does not mean the individual does not have epilepsy

**Computerized Tomography (CT)-** a CT Scan produces detailed cross-sectional images of your brain. Images may reveal abnormalities in brain structure, including tumors, cysts, strokes, etc.

**Magnetic Resonance Imaging (MRI)-** like a CT scan, MRI images may reveal abnormalities in brain structure.

- Neuropsychological assessment (conducted by a Licensed Clinical Neuropsychologist)
  - In patients with epilepsy, neuropsychological assessments are most frequently used to aid diagnosis, evaluate the cognitive side effects of antiepileptic medications and monitor the cognitive decline associated with some epileptic disorders.

### Interventions & Treatments:

●**Medications:** finding the right medication and dosage can be complex. It might take more than one drug, or trying several different drugs until the right one is found. Most people can become free of their seizures by using a single anti-epileptic drug.

\*Side-effects of medicine may include- mild fatigue, dizziness, and extreme weight gain.

\*More severe side-effects include- extreme fatigue, skin rashes, speech problems, and loss of coordination.

●**Surgery:** recommended for those for whom medications are ineffective or produce intolerable side-effects. Most commonly performed when tests demonstrate that seizures originate in a small, well-defined area

●**Ketogenic Diet:** rigid diet that is high in fat and low in protein and carbohydrates; goal of diet is to produce ketones, which cause the body to use fat instead of glucose for energy. Usually implemented for a limited period of time, and is more effective in children than adults (proved helpful in 2 out of 3 children placed on the diet)

●**Vagus Nerve Stimulation:** stimulator is implanted into the chest under the collarbone, wires are then wrapped around the vagus nerve in the neck. Device reduces seizures by about 20-40% on average

### First-Aid for Convulsive Epileptic Seizures:

●Stay calm

●Note the time

●Prevent others from crowding around

●Put something soft under the person's head (ex: jacket/sweater) to prevent injury

●Move things away from them if there is a risk for injury

●Do not attempt to restrain the convulsive movements. Allow the seizure to take its course

●Do not put anything in the person's mouth

### Contributions of the School Psychologist:

●Seizures may interfere with the child's ability to learn. If the student has the type of seizure characterized by a brief period of fixed staring, he or she may be missing parts of what the teacher is saying. It is important that the teacher observe and document these episodes and report them promptly to parents and to school nurses

●Some children may need additional assistance to help them keep up with classmates. Assistance can include adaptations in classroom instruction, first aid instruction on seizure management to the student's teachers, and counseling, all of which should be written in the IEP.

●It is important that the teachers and school staff are informed about the child's condition, possible effects of medication, and what to do in case a seizure occurs at school [Even if a child has seizures that are largely controlled by medication, it is still best to notify the school staff about the condition].

●School personnel and the family should work together to monitor the effectiveness of medication as well as any side effects

●Children and youth with epilepsy must also deal with the psychological and social aspects of the condition. These include public misperceptions and fear of seizures, uncertain occurrence, loss of self control during the seizure episode, and compliance with medications. To help children feel more confident about themselves and accept their epilepsy, the school psychologist can assist by

providing epilepsy education programs for staff and students, including information on seizure recognition and first aid.

**Additional Resources:**

- <http://www.epilepsy.com/>
- <http://www.healingwell.com/epilepsy/>
- <http://my.epilepsy.com>
- <http://www.mayoclinic.com/health/epilepsy>
- <http://www.ninds.nih.gov/disorders/epilepsy/epilepsy.htm>
- <http://www.webmd.com/content/article/87/99669.htm>

Merck Manual of Medical Information, 2<sup>nd</sup> Home Edition. (2003) Simon & Schuster.  
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