

## Seizures: General Information

<b>What are seizures?</b> <sup>1,2</sup>	<ul style="list-style-type: none"> <li>• Seizures are the physical effects of unusual bursts of electrical energy in the brain. This electrical hyperactivity in the brain produces "seizures".</li> <li>• Seizures are not the same in everyone who has them – they can be different in how they appear, how long they last (a few seconds to a few minutes) and how often they occur.</li> <li>• Seizures may appear as a brief stare, a change of awareness, or convulsions that include muscle spasms, loss of consciousness, uncontrolled body movement, incontinence and/or vomiting.</li> </ul>
<b>What is epilepsy?</b> <sup>2</sup>	<ul style="list-style-type: none"> <li>• Epilepsy is a condition where an individual has recurrent seizures secondary to unknown or uncorrectable causes.</li> <li>• Anyone can develop epilepsy, but it is normally diagnosed in childhood.</li> <li>• The most common cause of epilepsy is injury to the brain (e.g., birth trauma, infections, a head injury, low blood sugar, or stroke). However, often no cause can be found.</li> <li>• If someone has seizure-like behaviour, it does not always mean they have epilepsy.</li> </ul>
<b>Can people tell that they are going to have a seizure?</b> <sup>3</sup>	<ul style="list-style-type: none"> <li>• Some (but not all) people can tell, because they have a strange sensation before a seizure, called an "aura".</li> <li>• Common seizure warning signs to look for are: <ul style="list-style-type: none"> <li>○ odd feelings</li> <li>○ unusual smells or tastes</li> <li>○ feeling spacey, 'fuzzy', or confused</li> <li>○ periods of forgetfulness or memory lapses</li> <li>○ daydreaming episodes</li> <li>○ jerking movements of an arm, leg, or body</li> <li>○ tingling, numbness or feelings of electricity in parts of the body</li> <li>○ headaches</li> <li>○ losing control of urine or stool unexpectedly.</li> </ul> </li> </ul>
<b>Are there triggers that might make a person's seizures more likely to happen?</b> <sup>3</sup>	<p>Yes. It is important to know what might trigger a seizure in an individual person, and to help them avoid the triggers, when possible.</p> <p>Some <u>possible triggers</u> to be aware of are:</p> <ul style="list-style-type: none"> <li>• Stress <ul style="list-style-type: none"> <li>○ Emotional stress, e.g., over-excitement, emotional upset, being startled or frightened</li> <li>○ Physical stress, e.g., illness, lack of sleep, low blood sugar (hypoglycemia), exercise, hormone changes (e.g., menstrual cycle [women's period] or menopause), alcohol, drugs</li> <li>○ Environmental stress, e.g., televisions, videos, flashing lights (including flickering overhead lights), heat and/or humidity</li> </ul> </li> <li>• Change in medication</li> <li>• Missed seizure medication</li> </ul>
<b>Check with the person's doctor about how to respond when a seizure happens.</b>	<p>If you are living with or caring for someone with a seizure disorder:</p> <ul style="list-style-type: none"> <li>• Find out whether the doctor wants to be notified every time the person has a seizure, or just in certain specific situations.</li> <li>• Ask if there are any special warning signals that you should look for.</li> <li>• Ask whether or when you should call an ambulance.</li> <li>• Complete a Seizure Action Plan.</li> <li>• Ensure the individual has a <b>medical alert device</b> (e.g., MedicAlert bracelet or ID).</li> </ul>
<b>How many people with developmental disabilities (DD) also have epilepsy?</b> <sup>4</sup>	<ul style="list-style-type: none"> <li>• Epilepsy happens more often in people with DD than in the general population, and increases with the severity of the DD. About 15% of people with moderate DD have epilepsy, increasing to 30% in people with severe and profound DD.</li> <li>• Up to 25% of people who have epilepsy have a DD.</li> </ul>
<b>How is epilepsy diagnosed?</b> <sup>3</sup>	<ul style="list-style-type: none"> <li>• The doctor takes a detailed history, takes into account eyewitness reports of events thought to be seizures, usually does an EEG (electroencephalogram – a test that measures electrical activity in the brain), and may do further tests.</li> </ul>
<b>Misdiagnosis of seizures/epilepsy</b> <sup>4</sup>	<ul style="list-style-type: none"> <li>• Epilepsy is difficult to diagnose and may be wrongly diagnosed some of the time, especially in people with DD – behaviours may be wrongly given the diagnosis of a seizure.</li> <li>• Or behaviours that are secondary to seizure activity may not be recognized and treatment not given.</li> <li>• <b>The role of caregivers in accurately recording and describing any event that may be a seizure is extremely important for the doctor's assessment.</b></li> </ul>

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### TYPES OF SEIZURES<sup>1,5</sup>

- People with a seizure disorder can have just one type of seizure or more than one type – for example, some people with DD and seizures may have five different types of seizures. This makes diagnosis and management more complicated.
- There are more than 40 types of seizures, but most are grouped into two main types:
  - 1) Generalized – If the electrical discharge affects the whole brain.
  - 2) Partial – If the seizure affects only part of the brain.

<b>GENERALIZED OR PARTIAL</b>	<b>Status Epilepticus</b>	<ul style="list-style-type: none"> <li>• A state of prolonged seizure activity or repeated seizures without time for recovery</li> <li>• May exist for any seizure type</li> </ul> <p><b>Status epilepticus is a medical emergency that can lead to severe brain damage and even loss of life. This is a medical emergency. Call 9-1-1.</b></p>
	<b>Myoclonic</b>	<ul style="list-style-type: none"> <li>• Involves a sudden, shocking jerk of the muscles in the arms, legs, neck and trunk.</li> <li>• Tends to involve both sides of the body at the same time and the person may fall over.</li> </ul>
<b>GENERALIZED</b>	<b>Tonic-clonic Seizures</b> also called <i>Grand Mal</i>	<ul style="list-style-type: none"> <li>• General convulsions with two phases.                             <ul style="list-style-type: none"> <li>○ First phase: Tonic. The person may vocalize (e.g., cry or groan), lose consciousness, and then the person's body grows stiff.</li> <li>○ Second phase: Clonic. It involves jerking/twitching, sometimes with the whole body or just the face and arms. The person could have shallow breathing, bluish skin or lips, drooling and/or loss of bladder or bowel control.</li> </ul> </li> <li>• Normally lasts one to three minutes.</li> <li>• Consciousness returns slowly and the person may look very tired or want to sleep.</li> </ul>
	<b>Absence</b> Also called <i>Petit Mal</i>	<ul style="list-style-type: none"> <li>• Brief periods of complete loss of awareness, e.g., staring into space completely unaware of surroundings and unresponsive. Rapid blinking, mouth or arm movement may occur.</li> <li>• These seizures start and end suddenly without warning.</li> <li>• Lasts only a few seconds but happens many times a day.</li> </ul>
	<b>Atypical Absence</b>	<ul style="list-style-type: none"> <li>• Jerking or automatic movements lasting longer than 20 seconds with partial loss of awareness.</li> </ul>
<b>PARTIAL</b>	<b>Atonic</b>	<ul style="list-style-type: none"> <li>• Lasts a few seconds and involves sudden loss of tone in the muscles of the neck, arms, legs or trunk muscles.</li> <li>• The person may fall to the ground suddenly.</li> <li>• People with atonic seizures may have to wear a helmet to protect their head from injury during a fall.</li> </ul>
	<b>Simple Partial</b> also called <i>Focal</i>	<ul style="list-style-type: none"> <li>• Causes strange and unusual sensations, changing the way things look, sound, taste or smell.</li> <li>• The person remains conscious but cannot control sudden, jerky movements or a part of the body.</li> </ul>
	<b>Complex Partial</b> also called <i>Psychomotor or Temporal Lobe</i>	<ul style="list-style-type: none"> <li>• Changes the person's awareness of what is going on during the seizure, so the person may seem dazed, confused or trance-like.</li> <li>• The person may repeat simple actions over and over, e.g. head turning, mumbling, pulling at clothing, smacking lips, making random arm or leg movements or walking randomly.</li> <li>• Lasts a minute or two.</li> </ul>

#### References

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4. Chapman M, Iddon P, Atkinson K, Brodie C, Mitchell D, Parvin G, et al. (2011). The misdiagnosis of epilepsy in people with intellectual disabilities: A systematic review. *Seizure*, 20(2), 101-6.
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