Nationwide Children's
When your child needs a hospital, everything matters.℠

Helping Hand™

Seizures: Generalized

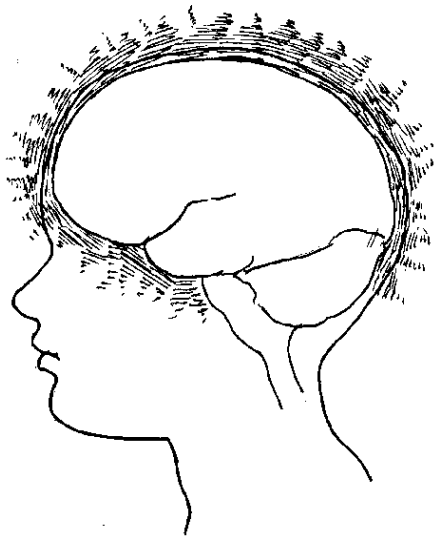
Seizures occur when nerve cells in the brain send out sudden, excessive, uncontrolled electrical signals. *Generalized seizures* occur when nerve cells in ***both sides of the brain*** are involved at the same time (Picture 1). When the seizure starts, the person is not aware of his or her surroundings. A person who is about to have a generalized seizure may have no warning that it will happen. However, just before it starts there may be a change in behavior, such as being irritable or feeling restless.

NOTE TO HEALTH PROFESSIONAL

Please also give the Helping Hand HH-I-61, *Seizure Care*, when using this Helping Hand.

There are 6 types of generalized seizures:

- Tonic-clonic
- Myoclonic
- Tonic
- Absence
- Atonic
- Clonic



Picture 1 During a generalized seizure, nerve cells in the entire brain have extra discharges.

Tonic-clonic seizures

Tonic-clonic (TON ik KLON ik) seizures are the most common type of generalized seizure. At the start of the seizure, the child is not aware of his surroundings. He may make an unusual sound. The tonic phase is the first stage of the seizure when the whole body becomes stiff. The eyes roll back or to the side. The pupils of the eyes may change size. Breathing becomes very slow and shallow. The heart rate may change. The child may bite his tongue, but **it is impossible for the child to swallow his tongue**.

The *tonic* phase is followed by trembling movements, called a *clonic* phase. Clonic actions include jerking of the face, head, arms and legs. As the seizure continues, the jerking decreases.

After the seizure, the child becomes limp. He may urinate, have a bowel movement or vomit. This is the start of the *post-ictal* phase. During this time, the child may be confused, in a "fighting" mood, or hard to wake up or he may sleep for several hours. When the child wakes up, he will not remember anything about the seizure and may complain of tiredness, headache or sore muscles.

Absence seizures

Absence (AB sens) seizures come on quickly and last a short time (30 seconds or less). The child recovers right away. With an absence seizure, the child simply stares into space. He does not speak or hear what is spoken. The seizure may include eye blinking.

When the seizure is over, the child continues with what he was doing before the seizure. He may not know he had a seizure. This type of seizure can be mistaken for problems with learning, behavior or coordination because the child may seem confused or "spaced-out." Absence seizures may happen many times a day.

Myoclonic seizures

Myoclonic (MY oh KLON ik) seizures are brief, sudden jerks of the body. The entire body may be involved or the seizure may be limited to the face, trunk, arms or legs. The seizure may be just one jerk or several jerks in a row.

The child with myoclonic seizures may complain about dropping or spilling things or may find himself on the floor and not remember how he got there. Unlike other generalized seizures, the child usually is aware of his/her surroundings during the event and may know he has had a jerk.

Atonic seizures

With an atonic (ay TON ik) seizure (also called “drop” seizures), the child has a sudden loss of muscle tone and control. If he is standing, he will fall suddenly to the floor. The seizure may be followed by a short period of confusion.

Tonic seizures

With a tonic (TON ik) seizure the child stiffens. He may look like he is shivering or having a "cold chill." The muscles do not relax until the seizure is over. The stiffening may be intense enough to cause the child to fall.

After the seizure, the child becomes limp. He may urinate, have a bowel movement or vomit. This is the start of the *post-ictal* phase. During this time, the child may be confused, in a "fighting" mood, or hard to awaken or he may sleep for several hours. When the child wakes up, he will not remember anything about the seizure and may complain of tiredness, headache or sore muscles.

Clonic seizures

With a clonic (KLON ik) seizure the body stiffens and relaxes in a rhythmic way. It may look like jerking of the entire body.

After the seizure, the child becomes limp. He may urinate, have a bowel movement or vomit. This is the start of the *post-ictal* phase. During this time, the child may be confused, in a "fighting" mood, or hard to awaken or he may sleep for several hours. When the child wakes up, he will not remember anything about the seizure and may complain of tiredness, headache or sore muscles.

When to get emergency help

Absence, myoclonic and atonic seizures usually last only a few seconds. Tonic-clonic, tonic and clonic seizures usually last only a few **minutes.** It is important to remember **seizures do not usually cause brain damage unless they last for over 30-60 minutes.** However, you should call for emergency help if any of the following occurs:

- Your child has trouble breathing during the seizure and his or her color changes.
- The seizure lasts more than 5 minutes and you do not have a seizure rescue medicine.
- Your child chokes on blood, vomit, etc.
- Your child is injured during a fall or during the seizure and needs first aid (a bad cut or broken bone).

Have someone stay close to your child after the seizure. Within 30 minutes you should be able to get some response from him, such as opening his eyes, pushing you away or beginning to arouse. If you cannot get any response from your child 30 minutes after the seizure, call 911.

To learn more about how to care for your child during a seizure, ask for Helping Hand HH-I-61, *Seizure Care*.

If you have any questions, please ask your doctor or nurse or call _____.

If you need to speak with someone after regular office hours, call the hospital operator at (614) 722-2000 and ask to speak with the neurology doctor on call.