**Important facts to know about seizures and epilepsy**

**Seizures** can be scary when you first experience them. The person having the seizure is often doing unusual things, such as holding their breath or moving peculiarly. It can also be frightening because, no matter how hard you try, you cannot stop a seizure. You have to let it run its own course. However, the more you learn about seizures and epilepsy the less scary they will become.

**Seizures are not a disorder** themselves. They are only a symptom of something else. There may have been a brain injury, an infection or a family tendency toward having seizures. Most of the time the underlying brain disorder will be so small that it won't be able to be found even on images of the brain (such as CAT scans and MRIs). Many times, an EEG (electroencephalogram) will show where abnormal activity is coming from within the brain. However, in some cases the only sign that there is anything wrong will be the seizures.

Here are some important facts for you to know:

- **Most seizures last less than three minutes** and you do not have to intervene.
- **Seizures themselves do not usually cause brain damage.** The underlying brain disorder may cause problems.
- **Children rarely die from a seizure.** If death occurs, it is usually from an injury that happens during the seizure or from the underlying brain problem.
- **Many children outgrow their seizures by the time they reach adulthood**

What is a seizure?

A seizure is not a “short circuit” or “electrical storm” in the brain. There is a tiny bit of electricity in the brain, but not enough for it to hop from cell to cell and create an “electrical storm”. Cells actually talk to each other through the use of brain chemicals (neurotransmitters).

A seizure is like the “wave” you see performed at a sporting event. Usually everyone in the crowd is doing their own thing, for example, watching the game, talking, eating. Along comes someone who gets the crowd to do the “wave”. Suddenly, each person stops what they were doing and whole sections suddenly stand up and sit down together spreading the wave around the entire stadium. This is how a seizure works. In fact, it is a very coordinated, synchronized event, not a chaotic event.
Normally, brain cells (neurons) work on their own or in small groups. They process information coming in from the body and control the body’s actions. When someone has a seizure, many neurons start to work together all at once. They stop doing their usual jobs and start working with different neurons in other groups. This is what causes the unusual behaviours and movements.

Different types of seizures can occur. The kind of seizure depends on where the seizure started, how far it spread, and how quickly the neurons were working. The seizure may affect the neurons in a small area (partial seizure) or it may affect the whole brain all at once (generalized seizure).

The brain has two halves (hemispheres) and a stalk (brain stem) connected at its base. The two halves and the stalk are connected by a number of connections that help them “talk” to each other. Each half of the brain controls the other side of the face and body. For example, the left side of the brain controls the right side of the face and the body. Therefore if the seizure occurs only in the left side of the brain (partial seizure) you would expect to see the seizure happening on the right side of the face and body. When the seizure involves the whole brain, you would expect to see the whole body involved and the person is completely unaware the seizure is occurring. Your health care provider will discuss your child’s particular type of seizure(s) with you in greater detail.

**What is epilepsy?**

Epilepsy is NOT a disease but a seizure disorder. It is caused by a neurological (brain) condition that causes sudden disturbances in the way the brain normally works. A person is said to have epilepsy when they have had more than one seizure.

**Treatment for epilepsy**

There are two main goals for the treatment of epilepsy:

**NO SEIZURES AND NO SIDE EFFECTS**

Therefore it is important that you:

- **Keep track of all your child’s seizures** and record as much information as you can in your seizure diary.
- **Mention any side effects** from the medication to your healthcare professional.
- **Bring your list of side effects and seizures** to ALL your clinic appointments.
Why is it so important to fill out a seizure diary?

- Keeping track of seizures on a calendar-style diary gives you a good, overall picture of how often and what types of seizures are occurring on a monthly basis and lets you compare quickly your child’s response to any medication changes.
- The diary gives you a place to write down any side effects from medications. It is important to let your healthcare team know any side effects your child is having so they can minimize or eliminate them.
- The best way to figure out which kind of seizure your child is having is by watching it closely and writing down as much detail you can.
- The kind of medication that will be chosen to treat your child’s epilepsy (and how well it works) will depend on what kind of seizures they are having.

What should I be looking for when I observe a seizure?

Watching your child have a seizure can be frightening. Having an idea of what to look for before the seizure starts can help you stay calm and remember what you are seeing.

There are 3 things that are important when observing a seizure.

- What happened right at the beginning of the seizure?
  - Was there a warning sign before it began?
  - Did your child tell you they were about to have a seizure?
  - Did the seizure start in one part of the body?
  - Did your child’s eyes or head move to one side first?
  - Was there an unusual movement?
  - Did your child report they had a smell, emotion, thought beforehand, or did you see a change in their mood?

- What happened during the seizure?
  - How long did it last?
  - What did it look like? (For example, body was limp/stiff, had muscle jerks)
  - If your child fell, how did they fall? (For example, crumpled to the ground or fell straight like a tree)

- What happened after the seizure was over?
  - Did your child return to normal right away or were they confused after the seizure or have trouble talking?
  - If they were confused, how long did it take your child to return to normal?

If possible, videotape the seizure so you can show it to your healthcare team. But don’t follow your child around waiting for a seizure to happen. They need to be reassured they are still normal and able to do the things they want to.
First aid for seizures  REMEMBER:  SAFE... TIME......CALM......

- Protect your child from injuring themselves on things around them. Do not restrain them or put anything in their mouth. If possible, roll them onto their side (recovery position)
- TIME the seizure
- Stay calm
- Reassure your child if they seem partially aware

If a seizure lasts more than 5 minutes: ☹️
- Get medical assistance immediately
- Give your child a rescue medication if it has been prescribed. Talk to your healthcare team if you are not sure what these are.

Living with epilepsy
Epilepsy is a chronic health condition. It is important that you encourage your child how to live with this condition in a positive, healthy manner. Many children with epilepsy participate fully in all aspects of normal daily living. Your child does not have to limit their activities, but you may want to take some simple everyday precautions.

- Wear a medical ID tag (ex. Medic Alert)
- Wear a helmet when bike riding
- Never swim alone
- Never lock the door when bathing

In fact, people (including many famous people) are still able to live full and normal lives with epilepsy.

Famous people with epilepsy
Sir Isaac Newton  Charles Dickens (author)
Thomas Edison  Leonardo da Vinci (artist)
Danny Glover (actor, Lethal Weapon movies)  Neil Young (musician)
Derek Morris (NHL )  Martin Luther

Resources
All About Epilepsy (for kids 8 and up) - www.aboutkidshealth.ca
Children’s Hospital, LHSC Neurology Program - www.lhsc.on.ca/childneuro
Epilepsy Ontario - www.epilepsyontario.org
How the Body Works (interactive site) - www.sickkids.ca/childphysiology
Seizures & Epilepsy Program - www.theseeprogram.com
www.epilepsy.com
sudepaware.org