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Seizures after Traumatic Brain Injury

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One of the problems that can occur after a traumatic brain injury (TBI) is seizures. Although most people who have a brain injury will never have a seizure, it is good to understand what a seizure is and what to do if you have one. Most seizures happen in the first several days or weeks after a brain injury. Some may occur months or years after the injury. About 70-80% of people who have seizures are helped by medications, and can return to usual activities. Rarely, seizures can make you much worse or even cause death.

What are seizures?

Seizures can happen in 1 to 5 of every ten people who have had a TBI, depending on where the injury occurred in the brain. The seizure usually happens where there is a scar in the brain as a consequence of the injury.

During a seizure there is a sudden abnormal electrical disturbance in the brain that results in one or more of the following symptoms:

- Strange movement of your head, body, arms, legs, or eyes, such as stiffening or shaking
- Unresponsiveness and staring
- Chewing, lip smacking, or fumbling movements
- Strange smell, sound, feeling, taste, or visual images
- Sudden tiredness or dizziness
- Not being able to speak or understand others

Symptoms of a seizure happen suddenly, and you are unable to control them. Seizures usually last only a few seconds or minutes, but sometimes continue for 5 to 10 minutes. You

Disclaimer

This information in this booklet is not meant to replace the advice from a medical doctor. You should consult a qualified physician regarding specific medical concerns or treatment.

Source

Our health information content is based on research evidence and/or professional consensus and has been reviewed and approved by an editorial team of experts from the TBI Model Systems.

For More Information

The Epilepsy Foundation of America Phone: 1-800-332-1000 Web: www.efa.org

Brain Injury Association of America Phone: 1-800-444-6443 Web: www.biausa.org

may have a bladder or bowel accident or bite your tongue during a seizure. After the seizure, you may be drowsy, weak, confused or have a hard time talking to or understanding others. After a severe seizure, one that lasts longer than 2 minutes, it may be harder for you to stand, walk or take care of yourself for a few days or even longer.

Other conditions that could increase the risk of having a seizure include:

High fever

Loss of sleep and extreme fatigue

Drug and alcohol use

Chemical changes in the body such as low sodium or magnesium, or high calcium

Seizures and TBI

Early post-traumatic seizures

A seizure in the first week after a brain injury is called an early post-traumatic seizure. About 25% of people who have an early post-traumatic seizure will have another seizure months or years later.

Late post-traumatic seizures

A seizure more than seven days after a brain injury is called a late post-traumatic seizure. About 80% of people who have a late post-traumatic seizure will have another seizure (epilepsy).

Epilepsy

Having more than one seizure is called epilepsy. In some people this will be a problem they have for their whole lives.

The cause of your brain injury can help doctors figure out how likely you are to have seizures.

- 65% of people with brain injuries caused by bullet wounds have seizures
- Bleeding between the brain and the skull, which is called a subdural hematoma, also may cause a seizure.
- Over 60% of people who need 2 or more brain surgeries after a brain injury experience seizures.

Medications to treat seizures?

Medications that are used to control seizures are called antiepileptic drugs (AEDs). These drugs may be used for other problems, such as chronic pain, restlessness, or mood instability. You and your doctor will decide on which drug to use based on your type of seizures, how old you are, how healthy you are, and if you get any bad side effects from the medications. Side effects of AEDs usually improve after you've been taking the medication for 3-5 days. Some common side effects are:

- Sleepiness or fatigue
- Dizziness or lack of balance
- Lightheadedness
- Trembling
- Double vision
- Confusion

Blood tests may be needed to make sure you are getting enough of the medication and to make sure the drug isn't causing other problems. These drugs rarely cause birth defects in newborns, so tell your doctor if you are pregnant or may become pregnant.

Sometimes your doctor will prescribe two or more of these medications to stop your seizures. Some common AEDs are:

- Carbamazepine (also known as Tegretol)
- Lamotrigine (also known as Lamictal)
- Levetiracetam (also known as Keppra)
- Gabapentin (also known as Neurontin)
- Oxcarbazepine (also known as Trileptal)
- Phenobarbital
- Phenytoin/ fosphenytoin (also known as Dilantin)
- Pregabalain (also known as Lyrica)
- Topiramate (also known as Topamax)
- Valproic acid or valproate (also known as Depakene or Depakote)
- Zonisamide (also known as Zonegran)

What if the medications do not work?

If your seizures continue even after trying medications, your doctor may refer you to a Comprehensive Epilepsy Center (CEC) for more tests and to be seen by special seizure doctors. At the CEC the doctors may do brain wave tests and take a video of you during one of your seizures to help figure out what is causing the problems. This may help to your doctor decide what drug will work best, and to see if other types of treatment will help the problems you are having.

The website of the Epilepsy Foundation of America or the American Epilepsy Society (www.aesnet.org) can tell you about the nearest Comprehensive Epilepsy Center.

Safety Issues

In most states, if you have had a seizure you cannot drive and you must notify the department of motor vehicles (DMV). Usually you won't be able to return to driving for a

period of time, or until your seizures have been completely stopped. Laws vary from state to state regarding how long after a seizure you must not drive.

Other things you should do to stay safe if your seizures have not stopped:

- Always have someone with you if you are in water (pool, lake, ocean, bath tub).
- Don't climb on ladders, trees, roofs or other tall objects.
- Let people you eat with know what to do in case you have a seizure and start choking.

What your caregiver should do if you are having a seizure

A family member or caregiver should watch closely to what happens during a seizure, so they can explain it to medical professionals. They should make a diary describing the date, time of day, length of time, and description of each seizure. Your doctor will need this information about your seizures and the drugs you are taking to control them.

The majority of seizures are short and do not result in significant injuries. However, it is important for your caregivers to know what to do to keep you from hurting yourself.

What to do for someone having a seizure:

- Loosen tight clothing, including around the neck.
- Make sure the person does not fall. Hold them steady if the person is sitting in a chair, couch or bed. If person is standing get them to the ground safely.
- Turn them and their head to the side so that anything in the mouth, even spit, does not block the throat.
- It can be dangerous to put anything in the mouth as you can get bitten.
- If you know CPR, check the heart beat in the neck. Start CPR if there is no pulse. Call 911.
- Listen for breathing at the mouth and extend the neck if breathing is difficult. If there is no breathing start CPR by sealing your lips over the person's mouth and breathing 2 quick breaths. Continue breathing for them every 5 seconds unless they start breathing on their own. Call 911.
- If this is the first seizure after TBI, call the person's doctor for advice.
- If the seizure does not stop after 3 minutes, call 911.
- If the seizure stops within 3 minutes, call the person's doctor.
- If the patient does not return to normal within 20 minutes after the seizure, call 911.

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