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SEIZURE DISORDERS

The brain controls and regulates the body including movements, sensations, thoughts and emotions. In a seizure, the brain sends out an abnormal burst of electrical signals. These signals can change a person's movement, behavior or state of awareness. When a person has had more than one seizure, they may have a seizure disorder or epilepsy**.**

Causes

- Problems with brain development before birth
- Lack of oxygen or damage to the brain during birth
- Brain injury
- Brain infections
- Metabolic conditions
- Interruption in blood flow to brain (e.g., stroke)
- Brain tumor

Triggers

Recognizing triggers may help to minimize the number of seizures that a person experiences. There is not always an obvious trigger. Triggers may vary from person to person.

- Missing a regular dosage of anti-seizure medication
- Stress, excitement
- Lack of sleep
- Poor lifestyle habits
- Illness, fever
- Flickering lights
- Hyperventilation
- Extreme emotions
- Heat, humidity
- Hormonal changes during puberty or at the time of menstrual periods

Treatment

Daily anti-seizure medication is the most common treatment for seizures. It is usually taken at home. Common side effects of anti-seizure medication are drowsiness, fatigue, change in attentiveness and appetite, mood swings, altered balance and decreased coordination which may affect the child's behavior and performance.

Rescue medication (e.g., Lorazepam, Midazolam) is used to try to stop a seizure or to prevent further seizures occurring in a cluster.

Other treatments for seizure disorders include epilepsy surgery, ketogenic diet, vagus nerve stimulation and rarely, specific vitamin supplements.

Precautions

A seizure disorder should not interfere with a child's ability to enjoy a wide range of activities. Precautions may be required for a child whose seizures are not well controlled. Weighing the risks and benefits of an activity will help to determine if a child should participate. Some activities that require precautionary measures include swimming, cycling and climbing.

Seizure Types

There are different types of seizures - generalized and partial. Generalized seizures occur in the whole brain. Partial seizures occur in one part of the brain. Seizures that start in one part of the brain and spread to the whole brain are partial seizures that become secondarily generalized.

Tonic-clonic seizures (generalized) can vary in length, intensity and duration but most seizures do not last more than one to three minutes.

- The child suddenly loses consciousness. If sitting or standing, the child will fall to the ground.
- The whole body stiffens (tonic phase). Then the body begins to jerk repeatedly (clonic phase).
- The child may cry out, clench teeth, bite tongue, drool or have increased salivation.
- The child may have changes in breathing.
- The child's skin may turn pale or blue-grey.
- The child may lose bladder or bowel control.
- The child will be confused after the seizure.

During a tonic-clonic seizure

1. Note the time when you become aware of the seizure.
2. Put the child on the floor in a side-lying position immediately to keep the airway open and clear. Loosen tight clothing around the neck.
3. Keep the child safe. Move any harmful objects out of the child's way to prevent injury.
4. Stay with the child and ensure he/she remains in the side-lying position until awake and alert.

After a tonic-clonic seizure:

- Reassure and comfort the child.
- Notify the parent/guardian that the seizure occurred.

Absence seizures (generalized) are usually very brief. The child stares blankly or appears dazed. The child may experience eye blinking, fluttering or upward rolling of the eyes and the head may bob.

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Myoclonic seizures are brief and involve a sudden increase in muscle tone which results in single or repetitive jerking motions. The jerking may be mild and affect one part of the body (e.g., arms, face, neck) or may affect the whole body and be intense enough that the child falls to the floor or sustains an injury. There is no loss of consciousness. They occur most frequently when falling asleep or upon awakening.

Atonic seizures (drop seizures) are brief and involve a sudden loss of muscle tone which causes the child to fall or drop. If the seizure is mild, you may only see a head drop. If standing, the child may fall to the ground. If severe, dramatic loss of muscle tone occurs with significant risk of injury. Loss of consciousness occurs but the child regains consciousness immediately after the seizure.

During an absence, myoclonic or atonic seizure

1. Stay with the child.
2. Keep the child safe. Move the child only if in an unsafe place (e.g., staircase, playground equipment, busy roadway).

After the seizure:
Check for injuries, if applicable.

- Reassure and comfort the child.
- Reorient child to surroundings (e.g., repeat instructions).

Simple partial seizures affect body movement, sensations or emotions.

- The child may have jerking movements that occur in one part or one side of the body.
- The child may see or hear things that are not there.
- The child may appear sad, afraid, angry or laugh out loud.
- The child may experience a loss of sensation, tingling, pain or nausea.
- The child is awake and aware.

Complex partial seizures affect motor action and awareness is altered. An aura may occur which is a sensation that occurs at the beginning of a seizure, such as seeing spots, hearing ringing or smelling an odor. It is the onset of a seizure that is localized in one area of the brain.

- The child may stare or appear dazed. The child may be unaware of his/her actions and surroundings.
- The child may make repeated motions (automatisms) such as chewing movements, picking at clothes or lip smacking.
- The child may appear dizzy, confused, anxious, scared or angry.
- The child may experience abdominal pain or an unusual taste or odor.
- The child may respond inappropriately.
- The child may be confused and tired after the seizure.

During a simple or complex partial seizure

1. Note the time when you become aware of the seizure.
2. Keep the child safe. Move the child only if in an unsafe place (e.g., staircase, playground equipment, busy roadway). Guide the child away from hazards. The child may struggle and lash out if he/she is in a confused state as he/she is misinterpreting your motivation.

After a simple or complex partial seizure

- Reassure and comfort the child.
- Reorient child to surroundings (e.g., repeat instructions).

Observation of Seizures

It is important to observe the seizure, document relevant information and communicate this information to the parent/guardian. A seizure log or diary may be used if seizures are frequent.

Information to observe & record:

- Length of seizure;
- Time and date seizure occurred;
- Description of seizure activity observed. It is unnecessary to determine the type of seizure.
- Activities child was participating in; and
- Exposure to possible triggers.

Emergency Response Plan

Seizures usually end after a few seconds or few minutes, but on rare occasions a seizure does not stop on its' own. The following situations provide a guideline as to when a seizure becomes a medical emergency.

- Seizure lasting more than five minutes
- Repetitive seizures which occur every few minutes without sign of recovery in between
- Evidence of serious injury
- Other medical concerns (e.g., airway obstruction, choking)
- Child is pregnant or has diabetes

1. Activate 911/EMS. Delegate this task to a responsible person. Do not leave the child alone.
2. Contact the child's parent/guardian. This can also be delegated to a responsible person.
3. Stay with the child until EMS personnel arrive.

If a child does not have a history of seizures and is experiencing seizure activity for the first time, 911/EMS should be called immediately.