

Seizures Without Fever (Nonfebrile Seizures)

When a child has a seizure without a high fever or other known cause, medical evaluation is needed. Nonfebrile (without fever) seizures are sometimes a sign of epilepsy, a treatable disease involving repeated seizures. However, many other causes are possible. You should always call our office when your child has had a seizure, with or without fever.

What are seizures?

Seizures are involuntary, uncontrollable muscle movements and/or behavior changes. Many kinds of seizures can occur in children. The most common type, *febrile seizures*, result from a high fever. When seizures occur, medical evaluation is needed to identify the cause.

Less than one third of seizures in children are caused by epilepsy, a disease in which repeated seizures are triggered from within the brain. Epilepsy is defined as repeated seizures not caused by other medical conditions (such as fever, infection, or head injury). Many children who have a seizure without fever or other known cause never experience another seizure.

What do they look like?

Several types of seizures are possible:

- Your child may experience sudden, rapid, repeated shaking of the arms and legs on one or both sides of the body. His or her eyes may be rolled back in the head. When the whole body is involved, it may be called a “grand mal” or “generalized (tonic-clonic) seizure.”
- Your child’s entire body may become very tense or very relaxed. Sometimes there is no movement at all—your child simply becomes unresponsive during the seizure.
- Parts of the body, such as an arm or leg, may shake or become stiff. Even holding onto the part doesn’t make it stop shaking.
- Seizures usually last for only a few minutes but can last longer.
- Your child may have other symptoms, such as numbness or pain in a specific area, may make involuntary noises, and may lose control over urination or bowel movements.
- Your child may be conscious or unconscious during the seizure. Afterward, he or she may be very sleepy.

What causes seizures?

- There are many possible causes. For some children with seizures, the cause is unknown.
- Some causes of seizures other than epilepsy include the following:
 - Fever or infections.
 - Head injuries.
 - Toxic substances, including medication side effects and drug abuse.
 - Abnormal heart rhythms.
 - Low blood sugar (hypoglycemia).
- Other events may look like seizures but really aren’t, such as breath-holding spells, fainting, chills and shivering, and many others. Rarely, events similar to seizures may be a symptom of a mental health problem. (These are called “pseudoseizures,” but are not true seizures.)

What are some possible complications of seizures?

- The seizure itself, if brief, does no harm to the child.
- Your child may be injured during seizures, especially if they are violent.
- Although it is rare, brain injury may occur if a seizure is very prolonged.

What puts your child at risk for seizures?

- Any of the causes listed above, such as head injuries or low blood sugar.
- If you or anyone else in your family has had epilepsy or other seizure disorders, your child may be at higher risk.
- If your child has had one seizure, he or she is at risk of having additional seizures. However, less than half of children with one seizure without fever go on to experience a second seizure.

Can seizures be prevented?

- Anticonvulsant drugs may be used to control seizures for epilepsy and other seizure disorders.

How are seizures treated?

If your child has a seizure at home:

- Place your child on his or her side to prevent choking on food or vomit.
- Do not give any medications or anything by mouth during the seizure to avoid the risk of choking.
- It is always important to call our office when your child has had a seizure.

Diagnosis:

- At the doctor's office or hospital, provide as much information as possible on the seizure as well as any factors that you think might have contributed to it.
- Depending on the history and type of seizure, certain tests can help to determine the cause of seizures:
 - If your child has had a head injury, special types of x-rays (called CT or MRI scans) may be done to see if there is any damage to the brain.
 - Blood or urine tests may be done.
 - If your child has fever or other symptoms of infection of the brain (such as meningitis), a test called lumbar puncture, or "spinal tap," may be performed. The test is safe and is generally not very painful. A spinal tap is more likely to be performed if your child has a seizure with fever. The doctor may perform a test called a lumbar puncture, or "spinal tap," to be sure your child does not have meningitis. This test is done by placing a needle between the bones of your child's spine and removing a small amount of fluid (called cerebrospinal fluid). Your child will receive anesthetics so that he or she will not feel the needle.

- An electroencephalogram (EEG) may be performed. This is a painless test that measures patterns of electrical activity in your child's brain (brain waves). The results may help in identifying the cause of your child's seizure and in predicting the risk of future seizures.
- We may recommend a visit to a specialist in brain and nervous system diseases (a neurologist). This specialist has the expertise to diagnose the cause of your child's seizure and recommend the most appropriate treatment, if any.

If this is your child's first seizure, we will not likely recommend any treatment at first. This is especially likely if there were no other unusual features and if no specific medical problem is suspected. Even if no specific cause is identified, many children with an initial seizure never have another seizure.

If your child has repeated seizures, further evaluation and treatment will be recommended. Detailed evaluation of your child's seizures will guide the choice of treatment.

- Treatment will likely include anticonvulsant drugs. These medications have many possible side effects. Your child will need careful follow-up. Other treatments may be recommended as well.
- If a specific cause is identified, treatment may help to control the risk of future seizures.

When should I call your office?

- Call our office any time your child has a seizure—whether or not there is a fever and whether or not your child has had a seizure before.
- If the seizure has not stopped within a few minutes, call an ambulance or seek other medical attention immediately. 