

Seizures in newborns and infants

A seizure is a sudden surge of electrical activity in the brain that causes a variety of symptoms, sometimes including rhythmic movements of the body or body parts. They can occur during sleep or while awake. Seizures in children are reasonably common—1 in 20 children will have a seizure. While seizures can be terrifying for parents and other caregivers, they are usually harmless and rarely life threatening. *Epilepsy* is defined as having two or more seizures.

Seizures in newborns

Seizures in the newborn occur usually in the first 2 days of life. Seizures can be caused by a variety of things, including severe stress during delivery, chemical imbalances, infections, or a temporary instability of electrical circuits in the brain (called *benign neonatal seizures*). Benign (harmless) neonatal seizures tend to get better with time, occur a little later, and may run in families. One final cause of seizures is abnormalities of the brain that are present at birth.

The symptoms of seizures in the newborn are extremely varied and can be hard to recognize. Symptoms are often repetitive and can consist of:

- Rhythmic movements of the eyes, one or both arms, or one or both legs.
- Rapid flexing of the arms or legs against the body.
- Sudden onset of increased body stiffening.
- Sudden jerky movements.

Sleeping babies commonly have periods of rapid eye movements or of body twitching—these are normal.

When movements are due to epileptic seizures, the movements cannot be stopped by moving, touching, or holding the baby. Talk to your family doctor, pediatrician, or public health nurse if you are concerned.

Seizures in infants

Infancy is the most common time for epileptic seizures. Most seizures experienced by infants are called *febrile seizures* (related to a fever). About 1 in 20 children will have a febrile seizure. These seizures usually stop before 5 years of age—and the risk of epilepsy later in life is only a little greater than normal. These children do as well as their brothers or sisters at school and treatment is generally not required.

Infants who have a seizure without fever tend to do well if they have reached their developmental milestones by the normal time and have not had a serious brain illness (for example, meningitis or a head injury). When a child's development is delayed or he or she has other neurological symptoms (for example, cerebral palsy), the epilepsy is almost always due to a brain abnormality and further investigations may be required.

About 1 in 20 children with epilepsy have a more serious form in which there are multiple types of seizures. This less common type of epilepsy may affect the rate of neurological development and such children should be seen by a pediatrician or neurologist.

Treating seizures in newborns and infants

Only 30% to 50% of infants who have a seizure will have a second seizure. Therefore, treatment is rarely

started after only one seizure. Infants who have only febrile seizures are not usually treated with medications unless the seizure was longer than 15 minutes.

When medication is used, starting at a low dose and increasing the dose gradually lessens the risk of side effects. Side effects can vary a lot, but most children can be treated without side effects. If your child develops a new problem after starting the medication, you should think about whether the change could be a side effect of the drug and consult your doctor.

Medication is often given twice a day in young children. Pills can be crushed and then sprinkled onto a small amount of food (less than a teaspoon of solids.) This should be done at the beginning of meals, so the child is still hungry. If more than one medication is given, each one should be given separately in case the medicine is spit up or not taken. If an infant is only fed formula or breast milk, the tablets can be crushed and mixed with a small amount of the liquid and given by putting the mixture into a nipple or with a small syringe into the side of the baby's mouth. Medications should never be put into a bottle, as they can stick to the side of the bottle and you cannot be sure that all the medication is swallowed. Some seizure medications come

in a liquid form. Often medications need to be shaken very well, and expire within 1 month. Talk to your doctor about the best form of medication for your child.

There is no set time to stop medication. If the seizures were controlled quickly with medication and the infant is developing normally, your doctor may gradually withdraw medication after your infant is free of seizures for 1 year. An EEG may help determine the risk of recurrence if the medication is stopped. Medication should be stopped only under medical supervision.

More information

- Dozens of information sheets on epilepsy-related topics are available from the BC Epilepsy Society: www.bcepilepsy.com/publications_and_resources/information_sheets.aspx
- The BCMJ.org Health Notes information sheet Seizure Types and First Aid is available at: www.bcmj.org/health-notes

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GLOSSARY OF TERMS

Cerebral palsy – a condition marked by weakness and impaired coordination of the limbs, caused by damage to the brain before or during birth	inflammation of the sacks, called the <i>meninges</i> , around the brain or spinal cord
EEG – electroencephalogram, a quick, painless test in which wires are attached to the scalp record brain waves	Neurology/neurological – relating to the nerves or nervous system
Febrile – related to a fever	Seizure – a sudden surge of electrical activity in the brain that causes rhythmic movements of the body or body parts or a variety of other symptoms
Meningitis – a dangerous	