UNDERSTANDING

Neonatal Seizures

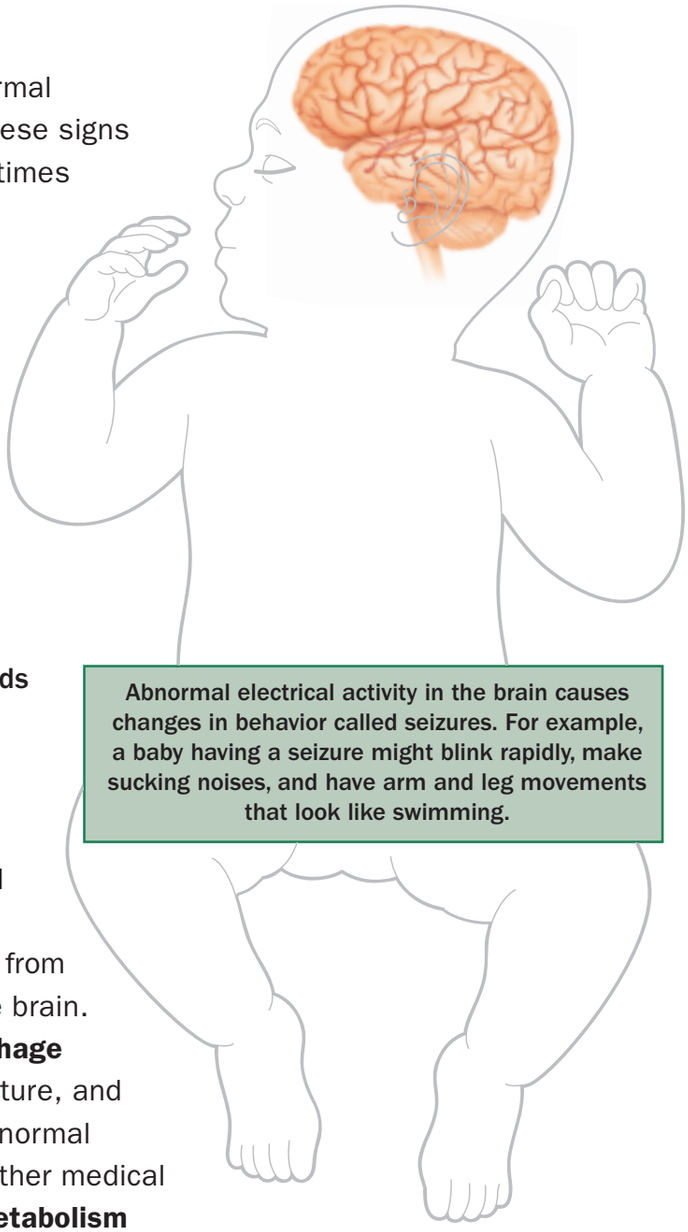
NS

What are seizures?

Seizures are physical signs of sudden abnormal electrical activity in the brain. Sometimes these signs are easy to see (motor seizures), and sometimes they look more like normal behavior (subtle seizures). Examples include:

- Motor seizures – rhythmic muscle jerks, contraction or rigid extension of arms or legs on one side or both sides
- Subtle seizures – blinking or fluttering eyelids, smacking of lips, coordinated movements that look like rowing, swimming, or bicycling

Each seizure usually lasts between 10 seconds and 2 minutes.



Abnormal electrical activity in the brain causes changes in behavior called seizures. For example, a baby having a seizure might blink rapidly, make sucking noises, and have arm and leg movements that look like swimming.

What causes neonatal seizures?

There are many possible causes of neonatal seizures. One example is **hypoxic ischemic encephalopathy** (HIE), a brain injury resulting from too little blood flow or oxygen delivery to the brain. Other possibilities include infection, **hemorrhage** (bleeding in the brain), abnormal brain structure, and metabolic disorders that disrupt the body's normal chemistry. These disorders may be due to other medical problems or they may be **inborn errors of metabolism** (inherited). Sometimes, no cause can be found.

How common are neonatal seizures?

Seizures are common in babies. Most neonatal seizures occur within the first 10 days after birth.

Overall, neonatal seizures occur in around 3 of every 1000 live births. Premature babies are more likely to have seizures than full-term babies. Subtle seizures are more common in full-term babies.

Treating Neonatal Seizures

How are neonatal seizures diagnosed?

When seizures are suspected, the most common test is an EEG (**electroencephalogram**) to measure electrical activity in the brain. The EEG readout is often compared with a video recording of the baby's movements to make a diagnosis.

Other tests will look for the cause of the seizures. Examples include:

- Brain imaging using **CT**, **ultrasound**, or **MRI** machines
- Tests of blood, urine, and/or **cerebrospinal fluid** (CSF) to check organ function and rule out chemical imbalances and infections

How are neonatal seizures treated?

Neonatal seizures are usually treated aggressively to prevent complications. In some cases (infection, chemical imbalance), the cause of the seizures can be treated. In other cases, the baby may be given medicines to stop the seizures. Many babies do not need seizure medication long-term. The health care team will talk to you about what's best for your baby.

What will happen next?

The long-term effects of neonatal seizures depend on the cause of the seizures. Babies with normal background brainwave activity (when not having a seizure) are likely to outgrow the seizures and develop normally. Other babies may have cerebral palsy or be at higher risk for epilepsy.

Every baby is different. Talk to the health care team. They can answer any questions you have about your baby.

Glossary

Cerebrospinal fluid (CSF) – fluid that surrounds the brain and spinal cord

CT (or CAT) scan – painless test that uses X-rays to create a picture of the brain

EEG (electroencephalogram) – test that measures electrical activity in the brain

Hemorrhage – bleeding

Hypoxic Ischemic Encephalopathy (HIE) – brain injury resulting from too little oxygen

Inborn errors of metabolism – inherited changes that disrupt the body's normal chemistry

MRI – painless test that produces an image of structures inside the brain. MRI machines do not use radiation

Seizures – physical signs of sudden abnormal electrical activity in the brain

Ultrasound – painless test that uses sound waves to create a picture of the brain

Ask the health care team when you have questions—they are there to help.

NOTES:

_____

_____

_____

_____

_____

_____

Signature: _____ **Date:**_____ **Time:** _____

 IMK111-01515 November 2012