Epilepsy in babies

If a baby has epilepsy, it means they have had seizures. This information is about seizures in 2 groups of babies:
  • Babies under 1 month old (newborn or neonates)
  • Babies between the age of 1 month and 1 year (infants)

It describes some of the most common seizures these babies have, as well as some of the causes.

Seizures in babies under 1 month old (newborn or neonates)

The brains of newborn babies are sensitive to seizures in the first week of life. Some babies will continue to have seizures as they get older, but some babies will never have any more. It really depends on:
  • The types of seizures they have
  • Why they started
  • When they started

What types of seizures do newborn babies have?

Subtle seizures – In babies, seizures might not be obvious to an onlooker. Their seizures may show as changes in breathing patterns or movements of their eyelids or lips. They may have bicycling movements of their legs, brief jerks or episodes of stiffening of their body and limbs. They might be less alert than usual. It might be difficult to attract their attention and their eyes may not focus properly.

Clonic seizures - the baby may have jerking or stiffening of an arm or leg that can switch from side to side.

Myoclonic seizures – the baby’s whole upper body may suddenly jerk forward. Or both their legs may jerk up towards their stomach, with their knees bent.

Tonic seizures – the baby’s body will stiffen and their eyelids might flicker.

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Seizures in babies between the age of 1 month and 1 year (infants)

What types of seizures do infants have?

Clonic seizures - the baby may have jerking or stiffening of an arm or leg that can switch from side to side.

Infantile spasms - the baby may bend forward and their body, arms and legs go stiff. Or their arms and legs might be flung outwards. These seizures usually affect both sides of the body equally.

Myoclonic seizures – the baby’s head may appear to be nodding, or their whole upper body may suddenly jerk forward. Sometimes babies’ legs jerk up towards their stomach, with their knees bent.

Tonic seizures – the baby’s body will stiffen and their eyelids might flicker.

Focal seizures - the baby will stop what they are doing, and they won’t be aware of what is going on around them. They may stare, or move their eyes or head to one side. One side of their body might jerk, and this could change from one side to the other. The baby might go on to have a tonic-clonic (convulsive) seizure.

What causes seizures in the newborn babies and infants?

There are many causes of seizures in babies. In around 8 out of 10 babies with seizures, a cause will be found. These are the most common:

- Being born very early, and having bleeding inside the brain. This is called intracranial haemorrhage.
- Being born on time but having a lack of oxygen to the brain. This is called perinatal hypoxia and can cause an injury to the brain called ‘hypoxic-ischaemic encephalopathy’
- Having low levels of glucose, calcium or sodium in the blood
- Having an infection such as meningitis or encephalitis
- Being born with some damage to their brain. This is called cerebral dysplasia or dysgenesis. Cerebral means relating to the brain. Dysplasia or dysgenesis means unusual development
- Inheriting a medical condition, such as benign neonatal convulsions or having a metabolic disorder such as GLUT 1 deficiency or a genetic disorder such as Dravet syndrome

For around 2 or 3 in 10 babies, no cause is found.

How are seizures diagnosed in newborn babies and infants?

It can be difficult to recognise seizures in babies and infants.\(^5\) That’s why it’s important that they are referred to a doctor who has had specialist training in diagnosing and treating epilepsy. The specialist will ask about:

- The baby’s behaviour
- Whether all the seizures look the same, and last the same length of time
- Whether the seizures happen while the baby is awake or asleep, or both
- Whether the seizures are caused by changes in the baby’s posture or when they are doing different things
- Whether the seizures interfere with, or stop, the baby’s activities such as feeding
- Whether you can stop the seizures after they have started

Recording any behaviour changes on a mobile phone could be very useful to show the specialist. It can help with making the diagnosis.

Epilepsy Action has more information about diagnosing epilepsy

The specialist may then arrange for some, or all, of the following tests.

**Electroencephalogram (EEG)**

The baby’s brain is constantly producing tiny electrical signals. During an EEG test, electrodes (flat metal discs) are placed on their head. The electrodes pick up the electrical signals from their brain and record them on an EEG machine.

The EEG can give information about the electrical activity that is happening in your baby’s brain at the time of the test. Sometimes, but not always, it can be very helpful in showing whether a baby is actually having seizures, rather than abnormal movements. This is because the brains of babies are very different to the brains of older children, and not all of their seizures show up on the EEG.\(^6\) However, if the EEG is very abnormal, it will tell the doctors more about the baby’s epilepsy.

Epilepsy Action has more information about EEGs

**CT scans (computed tomography)**

A CT scan is a type of X-ray that can show the physical structure of the brain. It doesn’t show if the baby has epilepsy. But it might show if there is anything in their brain, such as a scar, or damaged area, that could cause epilepsy. Not every baby will need to have a CT scan. Epilepsy Action has more information about CT scans

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MRI scans (magnetic resonance imaging)

An MRI scanner uses radio waves and a magnetic field to show the physical structure of the brain. It’s more powerful than a CT scanner and has a higher chance of showing whether there is a cause for the baby’s epilepsy. Not every baby will need to have an MRI scan. Epilepsy Action has more information about MRI scans.

Blood tests

Blood tests are used to check the baby’s general health, and to look for any medical conditions that might be causing their epilepsy. They can also be used to find out if the seizures are not caused by epilepsy, but another medical condition. An example would be low blood sugar (glucose) or low calcium levels.¹

Some babies will be referred to a genetics department for further testing. This will depend on a number of things, such as whether they have any other medical issues, and their family history. The referral will usually be made by the paediatrician or the paediatric neurologist.

Treatment

There is a large range of epilepsy medicines used to treat seizures in babies. The choice of medicine will depend on:

- The baby’s seizure type
- The age when the epilepsy began
- The cause of the epilepsy, if known
- Whether the baby has any other medical conditions, or takes any other medicines
- The likely outlook for their particular type of epilepsy

Some of the epilepsy medicines used in babies include phenobarbital, phenytoin, clonazepam, carbamazepine, stiripentol, sodium valproate, levetiracetam, and vigabatrin. Pyridoxine (vitamin B6) is also sometimes used. An epilepsy specialist might also prescribe other epilepsy medicines, depending on the baby’s condition.

Epilepsy Action has more information about treating epilepsy.

Long-term development

The outlook for a baby’s long-term development depends on what type of epilepsy or epilepsy syndrome your baby has. Their epilepsy specialist will be in a better position to discuss your baby’s outlook once all the test results are available.

Further information

The health visitor, epilepsy nurse, or epilepsy specialist may be able to give you information about the baby’s condition.

The organisation Contact a Family may be able to provide information and details of self-help groups for parents of babies with specific conditions, including the less common types of epilepsy.
Tel: 0808 808 3555
Web: cafamily.org.uk

About this information

This information is written by Epilepsy Action’s advice and information team, with guidance and input from people living with epilepsy, and medical experts. If you would like to know where our information is from, or there is anything you would like to say about the information, please contact us at epilepsy.org.uk/feedback

Epilepsy Action makes every effort to ensure the accuracy of information but cannot be held liable for any actions taken based on this information.

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Did you know you can also become a member of Epilepsy Action from as little as £1 a month? To find out more, visit epilepsy.org.uk/join or call 0113 210 8800.

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