

FACTSHEET

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Seizures and Epilepsy

What is a seizure?

Seizures are caused by a short change in the normal electrical activity in the brain. As a result, the nerve cells send “mixed-up” signals to each other. These mixed-up signals may lead to a change in the child’s awareness or body movement. Sometimes people use other names for seizures such as convulsions or fits.

Seeing your child have a seizure for the first time can be very frightening. It is important to remember that it is extremely rare that a child may die or suffer long lasting brain damage from a seizure.

What causes seizures?

Seizures can be triggered by many conditions. Some examples are after a head injury, or associated with high fever in a child under 6. (See also the fact sheet on [Febrile Convulsions](#)). In recent years genetic causes have been discovered for some types of epilepsy. If your child has had their first seizure the medical team will look for reasons why the seizure occurred.

What is Epilepsy?

Epilepsy is a condition with repeated seizures without fever or acute illness. Epilepsy is a broad term that includes the many reasons why a child may have repeated seizures. Epilepsy is not contagious. It is impossible to “catch” epilepsy.

Most cases of epilepsy in children are successfully treated with medication. Some children with infrequent seizures may not need to take medication.

How common are seizures and epilepsy?

Seizures are fairly common in children. Around 5% of children will have had at least one seizure by the time they are 15. Epilepsy is less common. Only about 1% of children have epilepsy. Anyone can have epilepsy regardless of their age, sex or intelligence. Many children will grow out of their epilepsy.

Types of seizures

There are different types of seizures. Different types of abnormal electrical activity in the brain cause differences in the way a seizure looks.

Generalised seizures are caused by abnormal electrical activity involving the whole brain at the same time.

Types of generalised seizures:

- Absence (Brief loss of awareness)
- Myoclonic (single jerk of a muscle or group of muscles)
- Clonic (repetitive jerking of muscles)
- Tonic (stiffening of muscles)
- Tonic-Clonic (stiffening and jerking of muscles and often associated with blueness around the lips).

Focal seizures are caused by abnormal electrical activity starting in a particular part of the brain. These used to be called partial seizures.

- In a focal motor/sensory seizure the child is fully aware, but may have abnormal sensation or movement of part of their body.
- During a focal seizure the child has altered awareness. The child may be unresponsive or appear to have altered awareness “day dreamy”. The child may make

inappropriate movements such as fiddling with clothes or 'smacking' their lips.

Diagnosis of Epilepsy

An accurate diagnosis of epilepsy is essential so that the most appropriate treatment can be given. Your child should be seen by a children's specialist doctor (paediatrician) or by a doctor who specialises in epilepsy (paediatric neurologist). The diagnosis of epilepsy relies on the accurate description of the events (seizures) as well as a detailed medical history including childhood development, behaviour and learning abilities. If possible a home video recording of the events (seizures) can be very helpful to the doctor. A family history of close relatives with epilepsy is important to report. You may need to ask your relatives as many families may not talk about it.

What tests are needed?

Various tests may be used to look for the cause of a seizure. This will depend on the type of seizure, age of your child, and the general health of your child. The most important part of the investigation is often the eye-witness description of the seizure. Depending on your child's history other tests may be needed. These may include blood tests, imaging of the brain such as MRI scan (see the [MRI scan factsheet](#) for more information) and an EEG (electroencephalogram) which records the electrical activity of the brain.

Could the seizure be something else?

Sometimes other symptoms can be mistaken for seizures, for example faints or simple staring. Your child's doctor will work through the investigations to find the right diagnosis.

Will a seizure harm my child?

Most children recover well from a seizure. Rarely a prolonged seizure, lasting more than 30 minutes, may cause problems. Often the biggest risk to your child's safety is not the seizure itself, but the situation in which the seizure occurs. It is important that children at risk of a seizure are always well-supervised around water activities such as bathing and swimming.

Will my child need medication?

Your doctor may advise that your child takes regular medication if they have repeated seizures without fever. Most children with epilepsy can be treated with one medication taken once or twice a day for a period of about two years.

Occasionally the first medication may not suit the child and it may require several medication changes to find the right one. Every child is different.

If your child is prescribed medication it is important not to stop the medication suddenly as this may cause the seizures to reappear.

Are there other treatments available?

If your child's seizures are not well controlled by medication a variety of other treatments sometimes help. Your doctor will talk to you about which treatment will be best for your child.

- 1) In some cases a medically supervised special diet, high in fat and low in carbohydrates called the Ketogenic diet or the modified Atkins diet, may be effective.
- 2) If it can be shown that the seizures come from one area of the brain, surgical removal of that part of the brain may stop or significantly reduce the seizures. This may be an option for only a small percentage of children with focal seizures.

What can I do to help my child during a seizure?

There are some simple steps that you can take during a seizure to provide first aid.

First Aid for seizures of altered awareness – e.g. absence seizures or focal seizures

- Stay calm and reassure your child.
- Note the time the seizure starts and ends if possible.
- Stay with your child and watch your child to protect them from potentially harmful situations. For example stop them from walking onto a nearby road.

First Aid for Convulsive or Tonic-Clonic Seizures

- Stay calm.
- Note the time the seizure starts and ends if possible
- Stay with your child.
- Move the child away from potentially harmful objects e.g. furniture with sharp corners. Otherwise try not to move the child unless the seizure occurs in a hazardous area e.g. the bath or pool.
- Place something soft under your child's head to stop their head hitting the floor.

- Roll your child onto their side, also known as the recovery position. If there is food in their mouth turn their head to the side, do not try to remove it.
- Unless you are giving your child emergency medication (such as midazolam), never put anything in the mouth of your child – it is impossible for your child to swallow their tongue
- Your child may become tired after the seizure. Allow them to rest and recover. Keep a seizure diary to record the seizure events and to assist your doctor at consultations

Is there any treatment available if my child has frequent or prolonged seizures?

- There is a medication called Midazolam that is often recommended for children who have frequent or prolonged seizures that last longer than 5 minutes. Most children do not require this medication. If you would like more information about this treatment you should talk with your doctor.

Should I take special precautions?

- Don't let your child swim alone and make sure there is an observer watching them closely. The observer needs to be a strong swimmer.
- Encourage your child to have showers instead of baths and never leave the child alone in the bath.
- Make sure adults or older children who look after your child know what to do if your child has a seizure.
- Activities involving heights are best avoided unless your child's safety can be secured.
- Ensure your child wears the recommended safety equipment during activities, e.g. shin pads and helmet when cycling or skateboarding

School or preschool

- Your child may require an epilepsy management plan for school. This can be developed with assistance from your doctor, an epilepsy nurse or by support organisations such as epilepsy action Australia.
- if you child's seizures tend to occur during the day, you may need to inform the school. Some seizures such as absence seizures or sensory seizures can be difficult for teaching staff to recognise. If possible show the teachers a video of the seizure and ask them to report any events for your records.

Should I call an ambulance?

Call 000 for an ambulance if:

- You feel worried
- It is your child's first seizure.
- The seizure lasts longer than 5 minutes.

- The seizure occurs in water and your child has trouble breathing.
- Your child also has an injury.
- Your child may have inhaled some food during the seizure
- Your child's breathing doesn't return to normal shortly after the seizure or your child remains blue around the lips.
- You are unsure that your child is safe and recovering normally after the seizure.

First Aid courses:

First aid training can be valuable for everyone who cares for children. First aid courses are often run by local community health centres, and other organisations such as the Australian Red Cross and St John's Ambulance.

- St John's Ambulance www.stjohn.org.au
ph: 1300 360 455
- Australian Red Cross www.redcross.org.au
ph: 1300 367 428

Where can I get more information on epilepsy?

- Epilepsy Action call 1300 374 537, or visit their website www.epilepsy.org.au.
- Paediatric Epilepsy Network NSW www.pennsw.com.au

Remember:

- Seizures are caused by a short change in the normal electrical activity in the brain.
- Epilepsy is a condition which involves repeated seizures without fever.
- Understanding the problems and heeding medical advice enables your child to do almost all of the things they may choose to do and to have a very productive life. Epilepsy in the majority of children is well controlled with appropriate medication.