



**epilepsy**  
SOUTH AFRICA

# Epilepsy and Children

[www.epilepsy.org.za](http://www.epilepsy.org.za)

## What is epilepsy?

Epilepsy is a tendency to have recurrent seizures (convulsions) which occur when there is an abnormal electrical discharge in the brain.

Seizures may be triggered by a chemical imbalance or structural abnormality.

The term “epilepsy” covers a variety of seizure types which may differ in cause, nature, severity, management and long-term outcome. People (especially parents) commonly take a very pessimistic view about epilepsy causing unnecessary anxiety. To avoid this you should talk to your child’s doctor to identify the specific diagnosis (type of epilepsy) accurately to ensure the most appropriate treatment, advice and help.

## Epilepsy facts

Generalisations about epilepsy have been the source of confusion in the past, often leading to myths and misconceptions.

- The World Health Organisation (WHO) estimates that 1 in every 100 persons in developing countries (like South Africa) has epilepsy.
- An isolated seizure is not necessarily an indication of epilepsy.
- Anybody can be diagnosed with epilepsy at any age but most commonly develops before the age of 20.
- Most people will be able to control their epilepsy with medication.
- Children with epilepsy may outgrow the condition.
- Epilepsy is not a psychiatric illness or condition, but a neurological condition.
- Epilepsy is not infectious or contagious.

## Common childhood epilepsies

### Two main types of seizures are recognised:

- Generalised seizures involve the entire brain and is usually characterised by some loss of consciousness (however brief).
- Partial seizures originate in a particular part of the brain and may or may not involve a loss of consciousness.

Some children will have more than one type of seizure, but the majority will have only one.

## Generalised seizures

**Tonic clonic seizures:** The body will stiffen (tonic phase) and the child may cry out (this is not pain), followed by a fall, jerking movements (clonic phase). The child may turn blue due to a lack of oxygen and may be incontinent (wet themselves). This type of seizures usually lasts a few minutes (although it may feel much longer to you).

**Absence seizures:** The child may look blank, stare and have slight twitching or blinking. This type of seizures typically lasts only a few seconds and are often missed or misdiagnosed (usually as ADHD or even daydreaming).

Myoclonic seizures are characterised by a single or multiple occurrences in a variable period of time. A limb(s) or the trunk may jerk, possibly leading to a fall.

**Partial seizures:** Complex partial seizures may start with an aura (warning) which may be visual (sight), auditory (hearing), gustatory (taste), olfactory (smell), etc. The child may appear conscious, but may not respond. Abnormal movements (e.g. plucking at clothing or smacking lips) may occur. The child may want to wander. These seizures last up to approximately two minutes.

Simple partial seizures are characterised by a funny feeling or jerking in just one limb or down one side of the body. The child does not lose consciousness.

**Febrile seizures:** The word “febrile” refers to fever. As such, febrile seizures relate to elevated temperature, usually in association with an illness (e.g. tonsillitis or an ear infection). These seizures are most common between the ages of 12 months and four years and are rarely seen after the age of five.

Febrile seizures are characterised by tonic-clonic or clonic movements and generally lasts about two minutes. If the seizure lasts longer than five minutes or is repeated in quick succession emergency medical help is required. A doctor will be able to provide telephonic support in lowering the fever (e.g. by sponging the child with lukewarm water). The doctor will attempt to halt seizures through medication.

While the cause of the fever needs assessment by a doctor, febrile seizures are not usually classified as epilepsy.

Most children will outgrow these naturally without further problems.

## How is epilepsy diagnosed?

Diagnosing epilepsy can be difficult, but it is essential that a correct diagnosis is made, i.e. misdiagnosing non-epileptic seizures as epilepsy or epileptic seizures as non-epileptic. The precise type of epilepsy should also be diagnosed.

Diagnostic mistakes can happen as doctors seldom witness seizures first-hand. It is thus essential that parents (or other observers) accurately describe the seizure(s) and the circumstances in which these occurred. The doctor needs to obtain a precise account of the exact sequence of events from the first changes in the child to complete recovery from the seizures, including the circumstances in which the seizure occurred. It is thus best to write down this information as soon as possible after a seizure to ensure accuracy.

In some cases EEG monitoring over longer period can be helpful to discover if there is epileptic activity in the brain at the time of the seizure or to identify the nature of non-epileptic seizures (e.g. sleep disorders).

Accurate descriptions also help to classify the child's type of seizure which will determine whether special investigations (e.g. CT scanning) is required, as well as the best treatment options. The likelihood that seizures will improve or stop in the future can often be assessed if the precise type of seizure is established.

Unfortunately, not all epilepsies have a good prognosis and some children will have seizures for many years, even for the rest of their lives. In general, the prognosis for good seizure control is poor where epilepsy is associated with intellectual disability, especially if severe.

## Causes of epilepsy

There are many possible causes of epilepsy which the doctor will carefully consider. However, in most cases the cause cannot be determined even after careful assessment (this is known as idiopathic epilepsy). This may be difficult for parents to accept, but a search for the cause should not be pursued indefinitely. Parents must understand and accept that they are not "somehow responsible" for their child's epilepsy.

## Treatment

The objective of epilepsy treatment is to (a) reduce the number and/or severity of seizures; (b) lower the intensity of seizures; (c) minimise or eliminate the side effects of treatment; and (d) improve quality of life.

### Major treatment options include:

#### Medication

In most cases anti-epileptic drugs achieve good seizure control without causing harmful side effects and this is the most common treatment option.

If possible, monotherapy (using only one drug) is preferred. Ideally daily drug dosage should be as low as possible, but still ensure adequate blood levels during the day and night. Sometimes more than one drug will be required to achieve adequate seizure control.

Generally, modern drugs have fewer side effects than in the past. However, it is essential that medication be taken exactly as prescribed. If drugs are only taken sporadically or different from the prescription seizure control will be poor.

Drug should never be stopped suddenly or without medical supervision. If you are concerned about any aspect of the treatment you should discuss this with your doctor.

#### Surgery

Some children with epilepsy will be suitable candidate for surgery given improved investigations and new surgical techniques. Surgery is a delicate and complicated option which may remove the area of the brain that is producing the seizures or splitting some connections in the brain. Long-term follow-up and rehabilitation may be needed.

#### Ketogenic diet

This is a high fat (75%), low carbohydrate (5%) diet which includes 20% protein. It is most effective in children and not typically used in adults. It is generally not a long-term option (~1-2 years) and requires strict adherence to the diet. The process usually starts with hospitalisation and fasting and may enable the reduction of medication.

#### VNS therapy

In some cases multiple treatments are not able to control seizures or the side effects of medication cannot be tolerated. This is known as medication resistant or refractory epilepsy. VNS Therapy may be an option.

VNS therapy is delivered by a small device similar to a pacemaker that sends mild electrical pulses to the vagus nerve in the neck which sends these electrical pulses to the brain. These periodic pulses are delivered all day, every day to potentially reduce or eliminate seizures.

#### Psycho-social support

Some children's seizures are worsened by factors such as stress, emotional upset and boredom. In these cases it is important to identify the problem and deal with it. This may require help from a counsellor, social worker or psychologist in addition to other treatment.

#### Learning and education

It is still a popular misconception that epilepsy is usually associated with low intelligence. In fact, this is only true in a minority of children where seizures result from brain injury or malformation. Such children may need special placement where both their medical and educational needs can be met. The majority of children with epilepsy attend mainstream schools where many do well as children with epilepsy have the same range of intellectual abilities as their able-bodied peers. However, there is some evidence that children with epilepsy may underachieve at school. This is often the case of social pressure and stigma, but psychometric assessment may be required.

### The causes of underachievement include:

- Physical factors such as frequent seizures, underlying structural damage and sleep disorders causing inadequate or poor quality sleep.
- Side effects of anti-epileptic medication.
- Psychological and social factors such as poor motivation, understimulation, overprotection and the attitudes of family, friends or teachers.

Close communication is required between the parents and teacher(s) of a child with epilepsy to ensure that the teacher is aware of the child's condition and able to deal with a seizure occurring at school. Teachers must not be afraid to push children with epilepsy to their limits (as with all children).