



Seizures and Epilepsy in Children

What You Need To Know

Dr Ong Hian Tat, Senior Consultant, Department of Paediatrics, Children's Medical Institution shares some insights on childhood seizures/ epilepsy, which parents should take note.

Qs: What is Seizure and Epilepsy?

Ans: Seizure is caused by sudden and erratic electrical changes in the nerve cells in the brain that one cannot control. When it occurs, there will be visible changes with brief alteration in one's consciousness, sensation, movements or actions.

When a child has a tendency to experience recurring seizures, we say that he/she has epilepsy. It is NOT a mental disorder or illness.

Qs: What are the different types of seizures?

Ans: There are many types of seizures, but the 3 most common paediatric epilepsy syndromes are:

1) Benign Childhood Epilepsy with Centro-Temporal Spikes (Benign Rolandic Epilepsy)

This is the most common childhood epilepsy. Frequently, there are simple partial seizures with sensory changes or jerks predominantly involving one side of the face or mouth. Often these go on to limb jerks when the seizure spread to become generalised.

2) Childhood Absence Epilepsy (Petit Mal Epilepsy)

This type of seizure is usually brief staring spells during which the child is not aware or not responsive. It can be so brief that it can go undetected. Sometimes these seizures also produce blinking or chewing movements. It is more common in girls. Frequent absence seizures may result in learning difficulties if not recognised and treated.

3) Juvenile Myoclonic Epilepsy

Such seizures are brief, lightning-like muscle jerks. It may cause a person to spill what he/she is holding or to fall off a chair. Juvenile myoclonic epilepsy often starts during adolescence, and is often mistaken for clumsiness. Sometimes they involve the whole body at once, sometimes just the face or arms. Sometimes these become generalised convulsions with loss of consciousness.

Qs: What causes epilepsy?

Ans: Epilepsy could result from any insult or damage to the brain. These include infection (meningitis or encephalitis), brain tumors, severe head injuries, events or complications to a foetus that happened before/during birth, or inherited brain disorders such as tuberous sclerosis. It may and may not run in the family. In about half the cases, no specific cause can be identified; the epilepsy is a result of some abnormalities in genes regulating nerve excitability in the brain.

Qs: What triggers epilepsy?

Ans: The following factors have been known to trigger seizures:

- 1) Lack of sleep
 - a common cause of increased frequency of seizures
- 2) Not taking epilepsy medicine regularly
 - a common reason for children with epilepsy having a seizure recurrence
- 3) Flashing or flickering light
 - known to trigger seizures for children with some types of epilepsy, e.g. juvenile myoclonic epilepsy
- 4) Illness or fever

Qs: What are the treatment options?

Ans: Generally, epilepsy can be controlled safely and effectively with anti-epileptic medication. For those patients whom medication is not effective with definite lesions or small area of abnormalities identified in their brain scan, epilepsy surgery will be considered.

Besides medication and surgery, ketogenic diet, a traditional dietary therapy to control seizures is also one of the treatment options available in NUH. A ketogenic diet is high in fats, and low in proteins and carbohydrates. This unusually high intake of fats creates a condition in the body known as "ketosis". The metabolic shift that is created increases the seizure threshold. Although it takes a significant commitment to be successful with the ketogenic diet, many children have better seizure control with this diet than with anti-epileptic medication. With ketogenic diet, some are able to reduce the need for anti-epileptic medications. Careful medical supervision is essential when starting this therapy, and ketogenic diet must only be initiated in a hospital setting.



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