CONDITION

Epilepsy in children

Epilepsy is a condition in which a child has an ongoing tendency to have seizures.

WHAT IT IS
Ongoing tendency to have unprovoked seizures

BODY SYSTEM
Brain and nervous system

MAIN SYMPTOMS
Staring, loss of awareness, stiffening, jerking

WHAT CAUSES IT
Genetic, structural, immune, infectious, metabolic, or unknown

HOW IT IS DIAGNOSED
Clinical history and EEG, sometimes MRI or genetic testing

MAIN TREATMENT
Anti-seizure medicines; sometimes diet, devices, or surgery

CAN IT BE CURED?
Sometimes - some children outgrow it and remain seizure-free

IS IT AN EMERGENCY?
Sometimes - seizure lasts five minutes or breathing is impaired

LONG-TERM OUTLOOK
Many become seizure-free; some need lifelong support

Overview

Epilepsy causes repeated seizures. A seizure is a sudden burst of unusual electrical activity in the brain that can briefly change a child's movement, awareness, feelings, or behaviour.

One seizure does not always mean epilepsy. Seizures can occur during a fever, serious infection, head injury, or temporary chemical imbalance. Epilepsy usually involves unprovoked seizures, although it can sometimes be diagnosed after one seizure if tests show a high risk of recurrence.

There are many seizure types and epilepsy syndromes. A syndrome is a recognised pattern based on features such as age, seizure type, development, test results, and likely course.

Some childhood epilepsies improve with age. Others continue into adulthood or occur alongside learning, movement, or developmental difficulties. Epilepsy is not contagious and

does not automatically mean a child has an intellectual disability. Many children with epilepsy attend school and lead active lives.

Symptoms

Seizures do not always cause falling or whole-body shaking. Possible signs include:

A focal seizure begins in one area of the brain. Awareness may be retained or affected. A generalised seizure involves networks on both sides of the brain from the start. Some focal seizures spread more widely.

A tonic-clonic seizure causes stiffening followed by repeated jerking. Breathing or skin colour may change briefly. Afterwards, the child may be sleepy, confused, sore, or have a headache. This is the postictal period .

Signs in babies can be subtle, including repeated stiffening, unusual eye movements, pauses in activity, or clusters of brief movements. Ordinary behaviours can look similar, so a video recorded safely on a phone may help assessment.

- Suddenly stopping, staring, or not responding
- Repeated blinking, chewing, swallowing, or picking movements
- Stiffening or rhythmic jerking of part or all of the body
- Sudden loss of muscle tone or unexplained falls
- Brief shock-like jerks, often after waking
- Unusual fear, sensations, smells, tastes, or visual changes
- Loss of awareness, confusion, or inability to speak

Causes and risk factors

Epilepsy can have genetic, structural, infectious, immune, or metabolic causes. Often, no single cause is found.

A genetic change may affect brain function. It can be inherited or arise for the first time in the child. Structural causes include differences in brain development, stroke, tumour, previous serious head injury, infection, or lack of oxygen. Less commonly, epilepsy results from an immune or metabolic condition.

Factors associated with epilepsy include:

Fever, missed sleep, illness, stress, flashing lights, or missed medicine may trigger seizures in a

child who already has epilepsy. These are triggers rather than the underlying cause. Only a minority of children are sensitive to flashing lights.

- A close family history of some epilepsy types
- Differences in brain development
- Previous brain infection, stroke, or significant injury
- Certain genetic or developmental conditions
- Cerebral palsy or intellectual disability

Diagnosis

Diagnosis starts with a detailed account of what happened before, during, and after the event. Eyewitness descriptions and videos are useful because the child may not remember it.

The clinician may ask about development, birth history, illness, medicines, injuries, sleep, and family history. A physical and neurological examination checks movement, coordination, reflexes, vision, and other functions.

An electroencephalogram , or EEG, records electrical activity from the scalp. It can support the diagnosis and help identify the seizure type. A normal EEG does not rule out epilepsy, and an unusual EEG does not confirm it by itself. Some children have an EEG during sleep, after reduced sleep, or with prolonged video recording.

An MRI may check the brain's structure. Blood tests can look for temporary causes or metabolic conditions. Genetic testing may be offered based on the child's age, development, seizure pattern, and family history.

Identifying the seizure type and, where possible, the epilepsy syndrome helps guide treatment and discussions about the future.

Treatment and management

Anti-seizure medicine is the main treatment. The choice depends on the seizure type or syndrome, age, other health conditions, side effects, and how the medicine is taken.

Finding the right treatment can take time. Some children become seizure-free with the first medicine; others need a different medicine or a combination. Do not change the dose or stop treatment suddenly without clinical guidance, as abrupt withdrawal can cause more seizures.

Side effects can include sleepiness, dizziness, mood or behaviour changes, concentration

problems, stomach symptoms, or skin reactions. Discuss new or troublesome effects at follow-up. A rapidly spreading rash, blistering, facial swelling, or breathing difficulty requires urgent medical help.

Some children have prescribed rescue medicine for a prolonged seizure. Their written seizure plan should say when and how a trained adult should give it and when to call emergency services.

If suitable medicines do not control seizures, referral to a specialist epilepsy centre may lead to additional testing or treatments such as:

The ketogenic diet is a medical treatment and should not be started at home. It requires specialist monitoring for nutrition, growth, and safety.

Regular reviews should cover seizures, development, learning, emotional health, sleep, and medicine effects. School staff and caregivers should have a seizure first-aid plan.

- A medically supervised ketogenic diet
- Surgery to remove or disconnect the area causing seizures
- An implanted device, such as vagus nerve stimulation

Complications

Seizures can cause falls, burns, dental injuries, or accidents around roads and water. Safety planning should reflect the child's seizures without unnecessarily restricting daily life.

A seizure lasting five minutes or longer is less likely to stop promptly. Prolonged seizures, or repeated seizures without recovery, can become status epilepticus and need emergency treatment.

Epilepsy may affect memory, attention, behaviour, mood, sleep, and school attendance. Early educational or developmental support can help. Anxiety, withdrawal, low mood, or concerns about self-harm need prompt attention.

Sudden unexpected death in epilepsy , or SUDEP, is rare but important. Risk is higher when tonic-clonic seizures remain uncontrolled, particularly at night. Taking medicine as agreed and working toward good seizure control can reduce risk. Families can ask the epilepsy team about their child's individual risk.

Prevention

Many childhood epilepsies cannot be prevented, especially those related to genetics or brain development.

Vehicle restraints, appropriate sports helmets, vaccination, and prompt treatment of serious infections may reduce some causes of brain injury or infection, but cannot prevent every case.

For children with epilepsy, regular sleep, consistent medicine use, and avoiding known triggers may reduce seizures. Special precautions around flashing lights are only needed for confirmed photosensitive epilepsy.

Living with it and what to expect

The outlook depends on the syndrome and cause. Some children become seizure-free and may eventually stop medicine under specialist supervision. Others need long-term or lifelong treatment. Seizure types and control can change as the brain develops, making regular review important.

Children should usually be encouraged to join in with school, exercise, friendships, and family life. Activities may need sensible adjustments. Swimming requires close, informed supervision. Bathing, cycling, climbing, cooking, and activities near roads may also need precautions based on seizure type and independence.

School staff should know what the child's seizures look like, how to keep them safe, and whether rescue medicine is prescribed. Some children need learning assessments or classroom support even when seizures are controlled.

Teenagers can gradually learn their medicine names, what to do after a missed dose, and how sleep, alcohol, and other substances can affect seizures. Planned transfer from children's to adult services helps prevent gaps in care.

When to get medical help

Call emergency services if:

During a convulsive seizure, protect the child's head, remove nearby hazards, and time the seizure. Do not hold them down or put anything in their mouth. When jerking stops, place them on their side if possible and stay with them during recovery.

A first suspected seizure needs prompt medical assessment. Seek urgent advice if seizures become more frequent, recovery takes longer, medicine cannot be kept down, or behaviour or alertness changes markedly.

Routine follow-up can address school plans, sleep, mild side effects, activity precautions, or an unchanged seizure pattern. Do not wait for a routine visit if there are new seizure types, worsening control, significant side effects, or developmental concerns.

- A seizure lasts five minutes or longer, unless the seizure plan says otherwise
- Another seizure begins before the child recovers
- The child has trouble breathing or does not regain their usual colour
- The seizure happens in water
- The child has a serious injury
- The seizure or recovery is clearly different from usual
- Rescue medicine has been given and the plan says to call

Common questions

Can a child outgrow epilepsy?

Some childhood syndromes stop as the brain matures, while others continue into adulthood. The cause, seizure type, EEG findings, development, and response to treatment help predict the likely course.

Does one seizure mean my child has epilepsy?

No. A seizure may be provoked by fever, infection, low blood sugar, or another temporary problem. Epilepsy may be diagnosed after repeated unprovoked seizures or after one seizure with a high risk of recurrence.

Can my child go to school and play sports?

Usually, yes. Precautions should match the child's seizure type. Water, heights, roads, and activities where sudden loss of awareness would be dangerous require particular planning.

Are video games and flashing lights dangerous?

Only a minority of children have photosensitive seizures. If testing confirms photosensitivity, the epilepsy team can recommend precautions. Other children do not usually need to avoid screens or flashing images.

Will my child need medicine forever?

Not always. Gradual withdrawal may be considered after a sustained seizure-free period, depending on the epilepsy type and test findings. Medicine must only be reduced through a planned discussion and never stopped suddenly.

What should I do if my child has a seizure?

Move hazards, protect their head, and time the seizure. Do not restrain them or put anything in their mouth. Follow their seizure plan, including instructions for rescue medicine and emergency help.

Sources

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