CONDITION

Epilepsy

Epilepsy is a nervous system condition that causes an ongoing tendency to have seizures.

WHAT IT IS
Long-term condition causing recurrent unprovoked seizures

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Altered awareness, unusual movements, sensations, loss of consciousness

WHAT CAUSES IT
Brain changes, inherited factors, injury, or unknown

HOW IT IS DIAGNOSED
Clinical history, EEG, and brain imaging

MAIN TREATMENT
Anti-seizure medicines, surgery, devices, or dietary therapy

CAN IT BE CURED?
Sometimes - successful surgery stops focal seizures

IS IT AN EMERGENCY?
Sometimes - seizures lasting five minutes or longer

LONG-TERM OUTLOOK
Many people control seizures with treatment

Overview

Epilepsy is a condition in which the brain has an ongoing tendency to produce seizures. A seizure occurs when abnormal electrical activity briefly changes how the brain works.

Seizures do not always involve collapsing or shaking. They may cause staring, confusion, unusual sensations, repeated movements, or loss of awareness. Symptoms depend on where the seizure begins and how widely it spreads.

One seizure does not necessarily mean epilepsy. Seizures can be triggered by temporary problems such as very low blood sugar, alcohol withdrawal, or serious infection. Epilepsy usually involves unprovoked seizures that are not explained by a short-lived trigger.

Clinicians may diagnose epilepsy after two unprovoked seizures more than 24 hours apart. It can also be diagnosed after one unprovoked seizure if findings show a high risk of recurrence,

or if a recognised epilepsy syndrome is identified.

Treatment controls seizures for many people, although some continue to have seizures despite trying appropriate medicines.

Symptoms

A person may have one or more seizure types.

Focal seizures begin in one area of the brain. Awareness may remain normal or become impaired. Symptoms can include:

Generalised seizures involve networks on both sides of the brain from the start. They may cause brief staring, sudden muscle jerks, loss of muscle tone, or stiffening and rhythmic shaking.

A tonic-clonic seizure usually causes loss of consciousness, stiffening, and repeated jerking. Breathing may sound unusual. Afterward, the person may be confused, sleepy, sore, or have a headache. This recovery period is called the postictal phase.

An "aura" before a more obvious seizure is usually the first part of a focal seizure. Not everyone has one.

Fainting, migraine, sleep or movement disorders, panic symptoms, and functional seizures can resemble epilepsy. Functional seizures are real episodes but are not caused by epileptic electrical activity, so correct diagnosis is important.

- Repeated movements such as lip-smacking
- Jerking or stiffening in one part of the body
- Sudden fear, déjà vu, an unusual smell, or a rising stomach feeling
- Difficulty speaking or responding
- Confusion and tiredness afterward

Causes and risk factors

In many people, no clear cause is found. Possible causes include:

"Genetic" does not always mean inherited. A change can occur for the first time in one person, and many epilepsy types involve a mix of genes and other factors.

Risk is higher after some brain injuries, strokes, infections, or developmental conditions. Family history can also increase the chance of certain epilepsy types, but risk factors do not mean

epilepsy will develop.

Poor sleep, missed medicine, stress, illness, alcohol, and flashing lights may trigger seizures in someone who already has epilepsy. They do not usually cause the condition. Only a minority of people with epilepsy are sensitive to flashing light.

- Genetic changes affecting brain-cell communication
- Differences in brain development
- Scarring after head injury, stroke, infection, or lack of oxygen
- A brain tumour or another structural change
- Immune conditions that inflame the brain

Diagnosis

Diagnosis begins with a description of what happened before, during, and after the episode. A witness account or video can be especially helpful. Clinicians may ask about medicines, alcohol or drug use, sleep, illness, head injuries, and family history.

An electroencephalogram, or EEG, records electrical activity from the scalp. It may support the diagnosis and help identify seizure type. A normal EEG does not rule out epilepsy because abnormal activity may not occur during the recording. Sleep-deprived, ambulatory, or video EEG monitoring may sometimes be needed.

MRI can identify scars, developmental differences, tumours, or other brain changes. CT may be used when urgent imaging is needed or MRI is unsuitable. Blood tests can check for abnormal blood sugar, infection, or changes in body salts. Heart testing may be needed if fainting or an abnormal rhythm is possible.

No single test confirms every case. Diagnosis is based on the event pattern, examination, and test results.

Treatment and management

Anti-seizure medicines are the main treatment. Choice depends on seizure type, epilepsy syndrome, age, other conditions, pregnancy potential, interactions, and side effects.

Some people become seizure-free with the first medicine; others need a different medicine or a combination. Take medicine consistently. Do not stop it suddenly unless a clinician directs you to do so, because sudden withdrawal can cause more frequent or prolonged seizures.

Side effects can include sleepiness, dizziness, mood changes, slowed thinking, skin rash, or effects on bones and internal organs. Discuss concerning symptoms promptly rather than changing the dose yourself.

If seizures continue despite appropriate medicines, a specialist epilepsy service may consider:

Surgery requires detailed testing and is most useful when focal seizures start in an area that can be treated without unacceptable loss of important abilities. It can stop seizures in some people but cannot guarantee a cure.

A seizure action plan should describe usual seizures, first aid, when to give prescribed rescue medicine, and when to call emergency services. Family, friends, schools, or workplaces may need a copy.

Pregnancy planning is important because both seizures and some medicines can affect pregnancy. Do not stop medicine because you are pregnant or may become pregnant. Seek specialist advice before conception when possible.

- Surgery for the brain area where focal seizures begin
- Implanted devices that stimulate nerves or the brain
- A medically supervised ketogenic or related diet
- Prescribed rescue medicine for prolonged or clustered seizures

Complications

Seizures can cause falls, burns, head injuries, or drowning. Precautions may include choosing showers instead of baths, taking care around heights and flames, and not swimming alone.

Status epilepticus is a seizure lasting too long or repeated seizures without recovery. It requires emergency treatment because prolonged seizure activity can affect breathing and harm the brain.

Epilepsy may also affect memory, learning, mood, sleep, and confidence. Anxiety and depression are more common and should be assessed and treated.

Sudden unexpected death in epilepsy, or SUDEP, is a rare but serious complication, often occurring during sleep. Risk is higher when tonic-clonic seizures continue, particularly at night. Taking medicine as prescribed and improving seizure control can reduce risk.

Prevention

Many cases cannot be prevented, particularly when the cause is genetic, related to early brain development, or unknown.

Reducing brain injury may prevent some cases. Wear seat belts and appropriate helmets, prevent falls, treat infections, and manage conditions that increase stroke risk.

If you have epilepsy, avoiding personal triggers may reduce seizures but does not remove the condition. Take medicine consistently, get regular sleep, and follow your care team's advice about alcohol.

Living with it and what to expect

Epilepsy often lasts long term, but its course varies. Some people remain seizure-free with medicine; others have intermittent or continuing seizures despite treatment.

A seizure diary can record dates, symptoms, recovery time, missed medicines, sleep, menstrual patterns, and possible triggers. This may reveal patterns and guide follow-up.

Routine appointments review seizure control, side effects, mood, safety, and whether the treatment plan remains appropriate. Some medicines or health situations require blood tests.

Driving rules differ by location. You may need to stop driving after a seizure and report the condition. Restrictions may also apply to work involving heights, machinery, open water, or professional driving.

Children may need school support, while adults may need workplace adjustments. Many people with well-controlled epilepsy study, work, exercise, travel, have relationships, and raise families.

Medicine withdrawal may be considered after a sustained seizure-free period. Recurrence risk depends on epilepsy type, EEG findings, cause, age, and seizure history. Withdrawal must be gradual and planned with a clinician, never attempted abruptly at home.

When to get medical help

Call emergency services if:

During a convulsive seizure, protect the person from hazards, cushion their head, and note the time. Do not restrain them or put anything in their mouth. When shaking stops, place them on their side if possible and stay until they recover.

Seek prompt medical advice if seizures become more frequent, recovery takes longer, new features appear, or side effects affect daily life. A new rash after starting an anti-seizure

medicine needs prompt assessment, especially with fever, facial swelling, mouth sores, or feeling very unwell.

Continue routine follow-up when seizures are stable. Discuss medicine, pregnancy plans, mood, memory, sleep, work, driving, and safety.

- A seizure lasts five minutes or longer
- Another seizure begins before the person recovers
- Breathing remains difficult after the movements stop
- The seizure occurs in water
- A serious injury happens
- It is the person's first known seizure
- The person is pregnant or has diabetes and urgent help is needed
- The seizure is clearly different from the person's action plan

Common questions

Can epilepsy go away?

Some childhood epilepsy syndromes improve with age, and some people remain seizure-free after treatment. Others need long-term treatment. Surgery can sometimes stop focal seizures arising from a treatable brain area.

Is epilepsy the same as having seizures?

No. A seizure is an event; epilepsy is an ongoing tendency to have unprovoked seizures. A temporary medical problem can cause a seizure without epilepsy.

Can I swallow my tongue during a seizure?

No. Do not put fingers, spoons, or other objects in the person's mouth. This can injure them or the helper.

Can flashing lights trigger every person with epilepsy?

No. Photosensitive epilepsy affects only a minority. Sleep loss, missed medicine, illness, or alcohol are more relevant triggers for many people.

Can I exercise if I have epilepsy?

Most people can exercise. Safety depends on seizure control and the activity. Water sports, climbing, motor sports, and activities at height may require supervision or extra precautions.

Will I need anti-seizure medicine forever?

Not always. Some people can consider gradual withdrawal after remaining seizure-free, following an individual risk review. Never stop medicine suddenly.

Sources

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