CONDITION

Guillain-barre syndrome

Guillain-barre syndrome is a rare immune condition that rapidly weakens the nerves controlling movement, sensation, and body functions.

WHAT IT IS
Rapid immune damage to peripheral nerves

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Tingling, muscle weakness, reduced reflexes, difficulty walking

WHAT CAUSES IT
Immune reaction, often following infection

HOW IT IS DIAGNOSED
Neurologic exam, nerve tests, spinal fluid analysis

MAIN TREATMENT
Immune therapy, hospital monitoring, rehabilitation

CAN IT BE CURED?
Sometimes - recovery may be incomplete

IS IT AN EMERGENCY?
Yes - worsening weakness or breathing difficulty

LONG-TERM OUTLOOK
Most recover, but some have lasting symptoms

Overview

Guillain-barre syndrome, usually written Guillain-Barré syndrome, is a condition in which the immune system mistakenly attacks nerves outside the brain and spinal cord. These are called peripheral nerves. They carry messages between your brain, muscles, skin, and internal organs.

The condition often begins with tingling or weakness in the feet and legs. Weakness may spread upward over hours or days. Some people develop weakness in the arms, face, breathing muscles, or muscles used for swallowing.

Guillain-barre syndrome matters because symptoms can worsen quickly and may affect breathing, heart rate, or blood pressure. Anyone with new, spreading weakness needs urgent medical assessment. Early hospital monitoring allows breathing or swallowing problems to be found and treated promptly.

The condition is not the same as a stroke or a spinal cord injury. It is also different from multiple sclerosis, which affects the brain and spinal cord. Guillain-barre syndrome mainly affects peripheral nerves and their insulating covering, called myelin.

Symptoms

Symptoms often begin within days or a few weeks after an infection. They usually affect both sides of the body, although one side may feel worse at first.

Common symptoms include:

Some forms begin in the face, arms, or eye muscles rather than the legs. One form, called Miller Fisher syndrome, typically causes poor balance, weak eye movements, and reduced reflexes.

Guillain-barre syndrome can also affect automatic body functions. These functions normally happen without conscious control. Possible signs include an unusually fast or slow heart rate, changing blood pressure, sweating problems, constipation, or difficulty passing urine.

Symptoms usually worsen for a limited period before reaching a stable phase. Rapid progression, breathing difficulty, choking, or inability to stand requires emergency care.

- Tingling, pins and needles, or numbness in the feet or hands
- Weak legs, trouble climbing stairs, or difficulty standing
- Weakness that moves from the legs toward the upper body
- Reduced or absent reflexes, such as the knee-jerk reflex
- Aching, burning, or shooting nerve pain
- Back, leg, or muscle pain
- Weak facial muscles, including trouble closing the eyes
- Difficulty speaking, chewing, or swallowing
- Shortness of breath or a weak cough

Causes and risk factors

Guillain-barre syndrome is caused by an abnormal immune response. The immune system normally attacks germs. In this condition, it also attacks parts of the peripheral nerves. This can damage myelin or, in some forms, the nerve fibres themselves.

The exact trigger is not always found. Many people have recently had a respiratory or digestive

infection. Recognised triggers include Campylobacter jejuni , a cause of food poisoning, and several viral infections. Guillain-barre syndrome has also occurred after influenza, COVID-19, cytomegalovirus, Epstein-Barr virus, and Zika virus infections.

Less often, it follows surgery or another major physical stress. It has rarely been reported after certain vaccinations. The risk linked to vaccination is generally small, and infections themselves can trigger the condition. If you have previously had Guillain-barre syndrome, discuss your history before receiving a vaccine rather than avoiding vaccines without medical advice.

Guillain-barre syndrome is not contagious. You cannot catch it from someone who has it. It is not usually inherited, and having an affected relative does not mean that you will develop it.

It can occur at any age. No lifestyle choice is known to reliably predict who will develop it after an infection.

Diagnosis

There is no single test that proves every case. Diagnosis is based on the pattern of symptoms, a neurologic examination, and tests that support the diagnosis or rule out other causes.

During the examination, a clinician checks muscle strength, sensation, balance, eye and facial movements, and reflexes. A typical pattern is weakness on both sides with reduced or absent reflexes.

Nerve conduction studies measure how quickly electrical signals travel through nerves. Electromyography, often called EMG, assesses electrical activity in muscles and nerves. These tests can show patterns of nerve damage linked to Guillain-barre syndrome, although results may be normal early in the condition.

A lumbar puncture may be performed. This involves taking a small sample of the fluid surrounding the brain and spinal cord from the lower back. Guillain-barre syndrome often causes a high protein level with few infection-fighting cells. The fluid can still appear normal during the first week.

Blood tests may look for infection, inflammation, vitamin problems, or other causes of weakness. MRI scans do not usually confirm Guillain-barre syndrome, but they may help rule out spinal cord compression, inflammation, or another neurologic condition.

Because early test results can be unclear, repeat examinations or nerve studies may sometimes be needed.

Treatment and management

Guillain-barre syndrome is usually treated in hospital. Even if weakness seems mild, breathing, swallowing, heart rate, and blood pressure may need close monitoring because they can change quickly.

Two immune treatments can reduce the harmful immune attack:

These treatments are considered similarly effective in appropriate patients. They are not usually combined routinely. Steroid medicines used alone have not been shown to improve Guillain-barre syndrome.

Some people need care in an intensive care unit. A breathing machine may be required temporarily if the breathing muscles become too weak. Swallowing support can reduce the risk of food, drink, or saliva entering the lungs.

Other care may include pain control, nutrition support, prevention of blood clots and pressure injuries, and treatment of bladder or bowel problems. Heart rhythm and blood pressure may be monitored closely.

Physical, occupational, and speech therapy can begin during recovery. Rehabilitation focuses on safe movement, daily activities, swallowing, communication, and gradually rebuilding endurance. Exercise is usually increased carefully because overexertion can worsen fatigue without making damaged nerves heal faster.

- Intravenous immunoglobulin, or IVIG, delivers concentrated antibodies through a vein
- Plasma exchange removes plasma, the liquid part of blood, and replaces it to reduce harmful antibodies

Complications

Weak breathing muscles are among the most serious complications. Some people need temporary mechanical ventilation while the nerves recover.

Difficulty swallowing can lead to dehydration, poor nutrition, or aspiration. Aspiration means food, liquid, or saliva enters the airway and lungs.

Damage to nerves controlling automatic functions may cause major changes in heart rate or blood pressure. Hospital monitoring helps detect and manage these changes.

Limited movement can increase the risk of blood clots, chest infections, stiff joints, pressure injuries, and muscle shortening. Position changes, mobility support, and rehabilitation help reduce these risks.

Pain may continue during or after the initial illness. Longer-term effects can include weakness, numbness, balance problems, fatigue, and reduced stamina. Anxiety, low mood, or distress can also occur after a sudden loss of independence or an intensive care stay.

A small number of people die from complications despite treatment. Prompt monitoring and supportive care are important, but no treatment can guarantee a particular outcome.

Prevention

There is no reliable way to prevent Guillain-barre syndrome. Most people who develop it had no warning, and only a very small proportion of people with common infections develop the condition.

Basic infection precautions, such as washing your hands and handling food safely, can reduce some infections that may act as triggers. They cannot prevent every case.

Vaccination decisions should consider the risks of infection as well as any previous reaction. If you have had Guillain-barre syndrome, tell the clinician providing a vaccination. A past episode does not automatically mean that every vaccine must be avoided.

Living with it and what to expect

Guillain-barre syndrome usually has three broad phases: worsening, a stable period, and recovery. Weakness typically reaches its most severe point within four weeks. The stable phase may last days or weeks before improvement becomes noticeable.

Recovery happens as inflammation settles and nerves repair themselves. This is slow. Strength may return over weeks, months, or longer than a year. Improvement is not always steady; good days and difficult days are common.

Many people regain independent movement and return to most usual activities. Some continue to have weakness, foot drop, altered sensation, nerve pain, or fatigue. Recovery may take longer when nerve fibres have been damaged rather than only their myelin covering.

Fatigue can remain even after muscle strength improves. Pacing activities, taking planned breaks, and increasing exercise gradually may be more helpful than pushing through severe tiredness. Mobility aids can provide temporary or longer-term independence.

Work, driving, and exercise may need to resume in stages. The safest timing is influenced by strength, reaction time, balance, fatigue, and the demands of the activity.

Most people have only one episode. Recurrence is possible but uncommon. Weakness that

continues to worsen beyond the expected early period, or returns after improvement, needs reassessment. Occasionally, another nerve condition with a longer course may be responsible.

Routine follow-up may include checking strength, walking, sensation, breathing, pain, fatigue, mood, and ability to manage daily tasks. Rehabilitation plans can change as recovery progresses.

When to get medical help

Seek urgent same-day medical assessment for new weakness that is spreading, especially if it begins in both legs or follows a recent infection. New difficulty walking, repeated falls, facial weakness, or trouble swallowing also needs urgent assessment.

Call emergency services if you have:

If you are recovering at home, contact your healthcare team promptly if weakness returns, pain is not controlled, falls become more frequent, or eating and drinking become difficult.

Routine follow-up is appropriate for persistent fatigue, numbness, mild stable weakness, mobility concerns, or help returning to work and exercise. These issues are important but are not usually emergencies when they are stable.

- Trouble breathing, shortness of breath, or a weak cough
- Choking or inability to swallow saliva
- Rapidly worsening weakness
- Inability to stand or walk safely
- Fainting, severe dizziness, or a very irregular heartbeat

Common questions

Can Guillain-barre syndrome be cured?

There is no treatment that instantly repairs the nerves. Immune treatment can limit further damage, and many people recover substantially as their nerves heal. Some have lasting weakness, altered sensation, pain, or fatigue.

How quickly does Guillain-barre syndrome get worse?

Symptoms may progress over hours, days, or several weeks. They usually reach their most severe point within four weeks. Because the pace cannot be predicted at home, spreading weakness needs urgent assessment.

Will I be able to walk again?

Many people regain the ability to walk independently, but recovery time and the amount of recovery differ. Rehabilitation, temporary walking aids, and home adjustments may support independence while nerves heal.

Can Guillain-barre syndrome come back?

It can recur, but this is uncommon. New tingling alone may have many causes, but returning or spreading weakness should be assessed promptly.

Is Guillain-barre syndrome contagious?

No. The condition itself cannot pass between people. An infection that triggered the immune response may have been contagious, but Guillain-barre syndrome is not.

Was it caused by a vaccine?

Guillain-barre syndrome has rarely been associated with certain vaccines, but infections are more common triggers. It is often impossible to identify one definite cause. A clinician can review the timing, vaccine type, infection history, and benefits of future vaccination.

Sources

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