CONDITION

Acute cerebellar ataxia

Learn how acute cerebellar ataxia affects balance and coordination, what can cause it, how it is evaluated, and which symptoms need emergency care.

WHAT IT IS
Sudden-onset syndrome of poor coordination

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Unsteady walking, poor coordination, slurred speech, abnormal eye movements

WHAT CAUSES IT
Infection, immune reactions, toxins, stroke, or structural problems

HOW IT IS DIAGNOSED
Neurological examination and cause-directed testing

MAIN TREATMENT
Supportive and cause-specific treatment

CAN IT BE CURED?
Sometimes - postinfectious cases often recover

IS IT AN EMERGENCY?
Sometimes, with severe headache or weakness

LONG-TERM OUTLOOK
Often good postinfection but cause-dependent

Overview

Acute cerebellar ataxia is the sudden development of problems with balance, walking, and coordinated movement. "Acute" means that symptoms begin quickly, usually over hours or days. "Ataxia" means poor coordination. "Cerebellar" refers to the cerebellum, the area at the back of the brain that helps control balance, posture, eye movements, speech, and precise movement.

Acute cerebellar ataxia is a clinical syndrome rather than one specific disease. It can result from several conditions, including a recent infection, medicine or toxin exposure, inflammation, migraine, stroke, or a problem affecting the structure of the brain.

In children, the term often refers to acute postinfectious cerebellar ataxia. This condition can appear during or after a viral illness and often improves with supportive care. However, doctors

must first consider other causes that may need urgent treatment.

Acute cerebellar ataxia is different from long-term or inherited forms of ataxia, which usually develop gradually. It is also related to, but not always the same as, acute cerebellitis. Cerebellitis involves inflammation of the cerebellum and may cause more severe symptoms, changes on brain imaging, or swelling.

Any new, sudden loss of coordination deserves prompt medical assessment. A person may be at risk of falling, and the same symptoms can sometimes be caused by stroke, poisoning, infection, or increased pressure in the brain.

Symptoms

Symptoms vary according to the cause and the parts of the nervous system involved. A person may look unsteady or appear as though they are intoxicated, even when no alcohol has been used.

Possible symptoms include:

Young children may suddenly stop walking, crawl instead of walk, or repeatedly fall. They may have difficulty feeding or using their hands. These changes can be subtle at first.

When to seek emergency care

Call emergency services for sudden ataxia, especially when it begins within minutes or hours or occurs with:

These features can occur with stroke, bleeding, serious infection, poisoning, or pressure inside the skull. Do not let an unsteady person drive.

New ataxia without these emergency features still requires prompt, usually same-day, medical evaluation. It should not be left for a routine appointment without first speaking to a healthcare professional.

- A wide-based, unsteady walk
- Stumbling, falling, or being unable to stand without support
- Poor coordination when reaching for or holding objects
- Shaking that becomes more noticeable near the end of a movement
- Slurred, slow, or uneven speech
- Rapid or abnormal eye movements
- Dizziness or a spinning sensation

- Nausea or vomiting
- Headache
- Trouble sitting upright, especially in a young child
- Irritability or reduced activity in a child who cannot describe the symptoms
- Facial drooping, weakness, numbness, or trouble speaking
- A severe or unusual headache
- New double vision or loss of vision
- Confusion, fainting, extreme sleepiness, or difficulty waking
- A seizure
- Fever with neck stiffness, marked sleepiness, or a new rash
- Repeated vomiting or rapidly worsening symptoms
- A recent significant head injury
- Possible exposure to an unknown medicine, drug, chemical, or poison
- Inability to stand or walk safely

Causes and risk factors

A recent infection is a common setting for acute cerebellar ataxia in children. Symptoms may begin during the illness or days to weeks afterward. The immune response triggered by the infection may temporarily affect cerebellar function. This is called postinfectious cerebellar ataxia.

Other possible causes include:

Risk depends on the cause. Relevant factors may include a recent infection or vaccination, a new medicine or dose change, access to alcohol or drugs, immune-system disease, cancer, migraine, recent head injury, or risk factors for stroke.

A recent infection does not prove that the ataxia is harmless or postinfectious. Doctors use the overall pattern, examination, and sometimes testing to rule out other explanations.

- Medicines, alcohol, or toxins: Sedatives, antiseizure medicines, some psychiatric medicines, recreational drugs, alcohol, and other substances can interfere with coordination. Accidental ingestion is an important concern in children.

- Stroke or bleeding: A blocked or bleeding blood vessel in or near the cerebellum can cause sudden ataxia. This is more common in adults but can occur at any age.
- Infection of the nervous system: Viral or bacterial infections may affect the brain or its surrounding tissues.
- Inflammation or autoimmune disease: The immune system may mistakenly attack parts of the nervous system. Examples include acute disseminated encephalomyelitis and certain antibody-related disorders.
- Migraine: Some migraine types can cause temporary vertigo and ataxia, often with headache, light sensitivity, or a personal or family history of migraine.
- Structural problems: A tumor, abscess, fluid blockage, or other lesion near the cerebellum can affect coordination. Symptoms may be acute or may have developed gradually before being noticed.
- Metabolic problems: Low blood sugar, abnormal body salts, vitamin deficiencies, liver disease, or other disturbances can affect brain function.
- Seizures: Temporary coordination problems may occur during or after some seizures.
- Inherited conditions: Genetic ataxias usually develop more slowly, but illness or metabolic stress can sometimes reveal or suddenly worsen an underlying disorder.

Diagnosis

Diagnosis begins with a careful history and neurological examination. The clinician will ask when symptoms started, whether they appeared suddenly or gradually, and whether they are stable, improving, or worsening.

Important details include recent illnesses, fever, headache, vomiting, rash, head injury, seizures, medicine changes, and possible toxin exposure. Families should bring all medicine containers or an accurate medication list. If poisoning is possible, clinicians may also need information about substances stored in the home.

During the examination, the clinician may assess:

Testing depends on the person's age, symptoms, examination, and likely causes. Not everyone needs every test.

Blood tests may check blood sugar, body salts, liver or kidney function, infection, inflammation, or metabolic problems. Urine or blood toxicology testing may be used when exposure to a medicine, alcohol, or another substance is possible.

Brain imaging may be needed when symptoms are sudden, severe, worsening, one-sided, or

associated with headache, altered awareness, or abnormal neurological findings. Magnetic resonance imaging, or MRI, provides detailed pictures of the cerebellum and nearby structures. Computed tomography, or CT, is faster and may be used in an emergency, particularly when bleeding or major swelling is a concern.

A lumbar puncture, sometimes called a spinal tap, may be considered if infection or inflammation is suspected. It tests the fluid surrounding the brain and spinal cord. Clinicians may obtain brain imaging first if there are concerns about swelling or pressure.

Other tests may include an electroencephalogram for possible seizures, antibody studies, metabolic testing, or genetic testing. These are usually guided by specific findings rather than performed routinely.

- Walking, standing, and sitting balance
- Hand and leg coordination
- Speech and swallowing
- Eye movements and vision
- Muscle strength, sensation, and reflexes
- Alertness, behavior, and memory
- Signs of infection or increased pressure in the skull

Treatment and management

Treatment depends on the cause and the severity of the symptoms. The first priorities are keeping the person safe, supporting hydration and nutrition, and identifying conditions that need urgent treatment.

Postinfectious cerebellar ataxia often improves without a cause-specific medicine. Care may include rest, fluids, help with walking, and monitoring for changes. Recovery can be gradual, so coordination may remain abnormal after the original infection has resolved.

If a medicine or toxin is responsible, clinicians may stop or adjust the substance and provide observation or specific treatment when available. Prescription medicines should not be stopped suddenly without medical advice unless emergency professionals direct otherwise.

Stroke requires immediate hospital assessment and treatment. The options depend on whether a blood vessel is blocked or bleeding, when symptoms began, and other medical factors.

Bacterial infection may require antibiotics like amoxicillin or doxycycline . Other infections are

treated according to the organism and the person's condition. Significant cerebellar swelling or blocked flow of brain fluid may require intensive monitoring and, rarely, a neurosurgical procedure.

Immune-related cerebellar disease may be treated by specialists with medicines that reduce inflammation or change immune activity. These treatments are not appropriate for every case and are chosen only after the likely diagnosis and risks have been assessed.

Physical therapy can help with balance, strength, and safe movement. Occupational therapy may address eating, dressing, writing, and other daily tasks. Speech-language therapy can help if speech or swallowing is affected.

At home, a person with ongoing ataxia may need close supervision. Removing loose rugs, blocking stairs, improving lighting, and using prescribed mobility equipment can reduce falls. Swimming, cycling, climbing, and other activities with a high injury risk should wait until a clinician says they are safe.

Complications

Many people with postinfectious acute cerebellar ataxia recover well, but the course depends on the underlying cause. Improvement may occur over days or weeks, while full recovery can take longer.

Possible complications include falls, head injuries, and difficulty completing normal activities. Poor coordination of swallowing can allow food or liquid to enter the airway, a problem called aspiration. Vomiting or difficulty drinking may lead to dehydration.

Severe cerebellar inflammation can rarely cause swelling that blocks the normal movement of fluid around the brain. This may lead to increasing headache, vomiting, sleepiness, or other neurological changes and requires urgent care.

Some people have persistent problems with balance, speech, fine hand movements, learning, or fatigue. Lasting symptoms are more likely when the cause has damaged the cerebellum rather than temporarily disrupted its function.

Complications can also come from the underlying condition, such as stroke, infection, autoimmune disease, or a structural brain problem. This is why follow-up should be based on the confirmed or suspected cause, not only on whether walking has improved.

Follow up

After urgent causes have been addressed, follow-up helps track recovery and decide whether further testing or rehabilitation is needed. The clinician may repeat the neurological examination and ask about walking, falls, speech, school or work, headaches, and daily activities.

Keep scheduled follow-up appointments even when symptoms are improving. Contact the treating clinician sooner if recovery stops, symptoms return, or new problems appear. Persistent or unexplained ataxia may require review by a neurologist.

Seek emergency care for worsening balance together with severe headache, repeated vomiting, new weakness, a seizure, confusion, unusual sleepiness, fever with neck stiffness, or inability to walk safely. These are not routine follow-up concerns.

During recovery, follow the care team's advice about returning to school, work, driving, sports, and unsupervised activity. A gradual return may be needed when balance or fatigue remains a problem.

Sources

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