CONDITION

Acute flaccid myelitis

Learn about acute flaccid myelitis, including sudden muscle weakness, possible viral triggers, diagnosis, hospital care, rehabilitation, and when to seek emergency help.

WHAT IT IS
Serious spinal cord neurological condition

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Sudden limb weakness, reduced reflexes, pain, trouble breathing

WHAT CAUSES IT
Unknown, often associated with viral infections

HOW IT IS DIAGNOSED
MRI, lumbar puncture, electromyography, nerve conduction studies

MAIN TREATMENT
Supportive hospital care and rehabilitation

CAN IT BE CURED?
No, no proven treatment reverses AFM

IS IT AN EMERGENCY?
Sometimes, with breathing or swallowing trouble

LONG-TERM OUTLOOK
Recovery varies, with possible lasting weakness

Overview

Acute flaccid myelitis, or AFM, is a serious neurological condition that affects the spinal cord. "Acute" means it begins suddenly. "Flaccid" describes weak muscles with reduced tone, and "myelitis" means inflammation or injury involving the spinal cord.

AFM mainly damages gray matter in the spinal cord. This tissue contains nerve cells that help control movement. When those cells are injured, signals may not travel normally from the spinal cord to the muscles. This can cause sudden weakness, usually in one or more arms or legs, along with reduced or absent reflexes.

AFM has most often been recognized in children, but adults can develop it. Symptoms frequently begin during or after a respiratory illness or fever. AFM is not the same as polio, although the two conditions can produce similar weakness. Testing is used to look for

poliovirus and other possible causes.

AFM is uncommon, but it matters because weakness can progress quickly. Muscles involved in breathing, swallowing, speaking, or facial movement may be affected. Early hospital evaluation allows clinicians to monitor breathing, rule out other emergencies, collect time-sensitive test samples, and begin supportive care.

Recovery varies. Some people regain substantial strength, while others have lasting weakness or changes in how their arms, legs, or joints function. Rehabilitation often continues for months or years.

Symptoms

The main symptom of AFM is sudden weakness in one or more limbs. An arm may become difficult to lift, or a leg may buckle or drag. Weakness may affect one side more than the other. Muscle tone and reflexes in the affected limb are usually reduced.

Other possible symptoms include:

Many people have fever, cough, runny nose, sore throat, vomiting, or diarrhea before weakness begins. The earlier illness may have improved by the time neurological symptoms appear.

Sudden arm or leg weakness needs urgent medical evaluation. Do not wait for a routine appointment, even if the weakness seems mild or follows an ordinary cold.

Call emergency services if weakness occurs with trouble breathing, shortness of breath, difficulty swallowing, choking, inability to manage saliva, bluish lips, severe drowsiness, or rapidly worsening symptoms. These may indicate that muscles needed for breathing or airway protection are involved.

- Neck, back, arm, or leg pain
- Trouble moving the eyes or drooping eyelids
- Facial weakness or an uneven smile
- Difficulty speaking, swallowing, or handling saliva
- Weakness of the neck or trunk
- Trouble breathing
- Changes in bladder or bowel function
- Numbness or tingling, although major loss of sensation is less typical

Causes and risk factors

The exact cause of AFM cannot always be confirmed. Evidence suggests that many cases are associated with viral infections. Enteroviruses, including enterovirus D68 and enterovirus A71, have been linked to some cases. Other viruses that can affect the nervous system include West Nile virus and certain adenoviruses and herpesviruses.

Finding a virus in the nose, throat, or stool does not always prove that it caused the spinal cord injury. The infection may have already cleared from those areas by the time weakness starts. Viruses are rarely found in spinal fluid, even when an infection is thought to have triggered AFM.

AFM is not believed to spread directly from one person to another as a condition. However, viruses associated with it can spread through respiratory droplets, contaminated hands and surfaces, or contact with stool, depending on the virus.

Children appear to be affected more often than adults. A recent fever or respiratory illness is common, but most people who have these infections do not develop AFM. Researchers do not yet fully understand why a small number of people develop spinal cord injury.

There is no single proven way to prevent AFM. Practical infection-control measures include washing hands with soap and water, covering coughs and sneezes, cleaning frequently touched surfaces, and avoiding close contact with people who are ill when possible. Recommended vaccination against poliovirus is important because polio can also cause sudden flaccid weakness. Preventing mosquito bites can reduce the risk of West Nile virus infection.

Diagnosis

AFM can resemble other neurological disorders, so diagnosis requires careful evaluation. Clinicians consider when the weakness began, which muscles are affected, whether reflexes have changed, and whether there was a recent illness. A neurological examination also checks sensation, muscle tone, eye and facial movements, swallowing, and breathing strength.

Magnetic resonance imaging, or MRI, is a key test. An MRI uses a magnetic field to create detailed images. In AFM, it may show abnormalities in the spinal cord's gray matter, often extending across more than one spinal level. MRI of the brain may also be needed when facial movement, swallowing, or other nerves from the brain are affected.

A lumbar puncture, sometimes called a spinal tap, may be performed. It collects cerebrospinal fluid, the liquid surrounding the brain and spinal cord. The fluid may show extra white blood cells, which can be a sign of inflammation. It is also tested for infections and other conditions.

Blood, stool, and respiratory samples should be collected as early as possible. Testing may look for enteroviruses, poliovirus, West Nile virus, and other infectious causes based on the person's symptoms, travel, exposures, and local disease activity.

Electromyography and nerve conduction studies measure how nerves and muscles respond to electrical signals. These tests may help confirm injury to the nerve cells that control muscles. Findings can change over time, so testing may sometimes be repeated.

Doctors also evaluate for other causes of sudden weakness, such as Guillain-Barré syndrome, transverse myelitis, spinal cord compression, stroke, botulism, tick paralysis, toxic exposures, and muscle disorders. This distinction is important because treatment differs.

Public health departments monitor AFM. Clinicians may report suspected cases and work with public health laboratories to arrange specialized testing. Reporting does not mean that the diagnosis has already been confirmed.

Treatment and management

There is no treatment proven to reverse AFM or reliably restore damaged spinal cord cells. Care focuses on protecting breathing and other vital functions, managing symptoms, preventing complications, and helping the person regain as much movement and independence as possible.

Initial care usually takes place in a hospital. Breathing can weaken before distress is obvious, so clinicians may repeatedly measure breathing strength, oxygen levels, and the ability to cough and clear mucus. Some people need support with a breathing machine. Swallowing may be assessed to reduce the risk of food or liquid entering the lungs.

Pain may come from nerve injury, weak muscles, joint strain, or prolonged positioning. The care team can select age-appropriate pain management and adjust positioning, braces, or activity as needed. Nutrition and hydration support may be required if swallowing is unsafe.

Immune treatments such as intravenous immune globulin, corticosteroids like prednisone or hydrocortisone , or plasma exchange have been used in selected patients. Available evidence has not established that these treatments improve AFM overall. Their possible benefits and risks depend on the clinical situation and whether another treatable inflammatory condition remains possible. Treatment decisions are made by specialists rather than through a standard AFM prescription.

Antiviral treatment may be appropriate if testing identifies a separate infection for which an effective medicine exists. Routine antiviral use has not been shown to treat AFM itself. Antibiotics like amoxicillin or doxycycline do not treat viral infections, though they may be used

for a confirmed bacterial infection.

Rehabilitation should begin when the person is medically stable. Physical and occupational therapists work to preserve joint movement, limit muscle shortening, support safe positioning, and build function without overworking very weak muscles. Therapy may include assistive devices, splints, mobility equipment, and strategies for dressing, eating, school, work, or other daily activities.

Some people with lasting weakness may be evaluated for nerve or tendon transfer surgery. These procedures reroute a functioning nerve or tendon to help restore a specific movement. They are not suitable for everyone, and the timing requires assessment by specialists experienced in peripheral nerve and reconstructive surgery.

Complications

The most urgent complication is respiratory failure, which occurs when weakened muscles cannot move enough air or clear secretions. Weak swallowing can also allow food, liquid, or saliva to enter the lungs, increasing the risk of aspiration and pneumonia.

Long-term weakness can lead to stiff joints, shortened muscles, abnormal joint positioning, or curvature of the spine. A growing child may develop differences in limb growth or bone alignment when muscles remain unbalanced. Limited movement may also affect skin health, circulation, and overall fitness.

Other possible complications include chronic pain, fatigue, sleep problems, and reduced ability to complete school, work, self-care, or recreational activities. A prolonged illness may affect emotional health for both the patient and family. Psychological support can be included as part of rehabilitation.

Not everyone experiences these complications. Regular assessment helps the care team identify changes early and adjust therapy, equipment, or specialist care.

Follow up

Follow-up is usually coordinated among neurology, rehabilitation medicine, primary care, physical therapy, and occupational therapy. Depending on the symptoms, the team may also include pulmonology, orthopedics, speech-language pathology, mental health care, and peripheral nerve surgery.

Routine visits may assess:

Recovery can continue beyond the first few months. Changes may be uneven, with improvement in some muscles but not others. A home exercise plan should be guided by the rehabilitation team because excessive strain may not help severely weak muscles.

Contact the care team promptly for increasing pain, loss of previously gained function, new joint stiffness, skin injury from a brace, swallowing changes, or problems with mobility equipment. These concerns generally need timely clinical review but are not always emergencies.

New or rapidly worsening weakness requires urgent reassessment. Trouble breathing, choking, inability to swallow saliva, blue or gray lips, confusion, or unusual difficulty waking requires emergency care.

- Muscle strength, reflexes, movement, and daily function
- Breathing strength, cough, sleep, and airway clearance
- Swallowing, speech, nutrition, and growth
- Joint flexibility, posture, and spine or limb alignment
- Pain, fatigue, mood, school participation, and family needs
- The fit and usefulness of braces, wheelchairs, or other equipment

Sources

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