CONDITION

Transverse myelitis

Transverse myelitis is inflammation of the spinal cord that can disrupt movement, sensation, and bladder or bowel control.

WHAT IT IS
Inflammation affecting signals through the spinal cord

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Weakness, altered sensation, pain, bladder or bowel problems

WHAT CAUSES IT
Immune inflammation, sometimes linked to infection or another condition

HOW IT IS DIAGNOSED
Neurological examination, MRI, lumbar puncture, and blood tests

MAIN TREATMENT
Steroids, immune treatments, symptom control, and rehabilitation

CAN IT BE CURED?
Sometimes - inflammation resolves, but lasting damage may remain

IS IT AN EMERGENCY?
Sometimes - new weakness or bladder problems need urgent assessment

LONG-TERM OUTLOOK
Recovery ranges from complete to lasting neurological disability

Overview

Transverse myelitis is inflammation within the spinal cord. The spinal cord carries messages between your brain and the rest of your body. Inflammation can interrupt these messages, causing weakness, altered sensation, pain, and problems with bladder or bowel control.

Symptoms usually develop over hours or days, although they may progress for several weeks. They often affect both sides of the body, but one side can be worse. The level of the inflamed area determines which parts of the body are affected. Inflammation in the neck may affect the arms and legs, while inflammation lower in the spine usually affects the legs.

"Transverse" refers to symptoms involving pathways across part of the spinal cord. It does not mean that the whole width of the cord must look inflamed on a scan.

Transverse myelitis can happen once without a clear cause. It can also occur with an infection or an immune condition such as multiple sclerosis, neuromyelitis optica spectrum disorder, or MOG antibody-associated disease.

New symptoms need prompt assessment. A slipped disc, tumour, abscess, bleeding, or another problem pressing on the spinal cord can cause similar symptoms and may require urgent treatment.

Symptoms

Symptoms usually occur below a particular level of the body. For example, inflammation in the middle of the back may cause symptoms around the trunk and in both legs.

Possible symptoms include:

Some people become very sensitive to temperature or light touch. Others have reduced awareness of pain or heat, which can increase the risk of unnoticed burns or injuries.

Severe inflammation high in the neck can affect breathing. This is uncommon but requires emergency care.

- Weak or heavy legs, sometimes with weakness in the arms
- Numbness, tingling, burning, coldness, or unusual sensitivity to touch
- A tight, squeezing, or band-like feeling around the chest or abdomen
- Neck, back, or shooting limb pain
- Difficulty walking, poor balance, or muscle stiffness and spasms
- Trouble starting urination, inability to empty the bladder, or loss of bladder control
- Constipation, bowel urgency, or loss of bowel control
- Changes in sexual sensation or function

Causes and risk factors

Transverse myelitis usually results from an immune response that damages myelin and other spinal cord tissue. Myelin is the protective covering around nerve fibres. In many cases, it is not possible to identify what triggered the inflammation.

It may occur after a viral or bacterial infection. The neurological symptoms often begin as the infection is improving, suggesting that the immune response rather than direct infection is

affecting the spinal cord. Less often, an infection directly involves the nervous system.

Transverse myelitis can also be associated with:

An antibody is a protein made by the immune system. Aquaporin-4 and MOG antibodies help identify conditions that can cause repeated attacks and may need long-term treatment.

Transverse myelitis is not usually linked to lifestyle choices. It is not caused by stress, lack of exercise, or something you did wrong.

- Multiple sclerosis, which affects myelin in the brain and spinal cord
- Neuromyelitis optica spectrum disorder, often linked to aquaporin-4 antibodies
- MOG antibody-associated disease, linked to antibodies against myelin oligodendrocyte glycoprotein
- Immune conditions such as lupus, Sjögren disease, or sarcoidosis
- Rarely, cancer-related immune reactions or certain medicines

Diagnosis

There is no single test that confirms every case. Diagnosis is based on your symptoms, a neurological examination, imaging, and laboratory tests. Testing also looks for pressure on the spinal cord and for conditions that could cause another attack.

A neurological examination checks muscle strength, reflexes, sensation, balance, walking, and bladder or bowel symptoms.

An MRI scan creates detailed images of the spinal cord. Contrast material may be given into a vein to make active inflammation easier to see. MRI of the brain may also be needed because certain patterns can suggest multiple sclerosis or another inflammatory condition. An early spinal MRI can occasionally appear normal, so repeat imaging may be considered if symptoms strongly suggest spinal cord inflammation.

A lumbar puncture may be performed. This involves taking a small sample of cerebrospinal fluid from the lower back. Cerebrospinal fluid surrounds the brain and spinal cord. The sample can show signs of inflammation or infection and may provide evidence associated with multiple sclerosis.

Blood tests may look for infections, vitamin or metabolic problems, systemic immune conditions, and aquaporin-4 or MOG antibodies. Further tests are chosen according to your symptoms, examination, and scan results.

Treatment and management

Treatment usually begins in hospital because symptoms can progress and bladder, breathing, or mobility problems may need close monitoring.

High-dose corticosteroids like prednisone or hydrocortisone are commonly used to reduce spinal cord inflammation. They are usually given into a vein at first. Corticosteroids can cause short-term effects such as sleep disturbance, mood changes, indigestion, increased blood sugar, or a greater risk of infection. The clinical team will consider these risks alongside the need to control inflammation quickly.

Plasma exchange may be offered when symptoms are severe or have not improved enough with steroids. This treatment removes the liquid part of the blood, called plasma, and replaces it. The aim is to remove antibodies and other immune substances contributing to inflammation.

Intravenous immunoglobulin, an immune treatment made from donated antibodies, is sometimes considered. Evidence and practice differ according to the cause and circumstances.

If testing identifies an infection, treatment may include an antiviral like acyclovir or oseltamivir , antibiotic like amoxicillin or doxycycline , or other targeted medicine. If transverse myelitis is part of a condition associated with repeated attacks, longer-term treatment to control the immune system may be discussed.

Rehabilitation often starts early and may continue after hospital discharge. It can include:

These treatments do not all repair spinal cord damage directly. They can reduce symptoms, prevent secondary problems, and help you use your remaining or recovering function.

- Physiotherapy for strength, movement, balance, and safe transfers
- Occupational therapy for dressing, washing, work, and home adaptations
- Bladder and bowel management
- Treatment for nerve pain, muscle spasms, stiffness, and fatigue
- Mobility aids such as braces, walking aids, or a wheelchair when needed
- Psychological or sexual-health support

Complications

Possible complications depend on the location and severity of the inflammation.

Reduced mobility can lead to muscle shortening, joint stiffness, pressure injuries, blood clots,

and reduced fitness. Rehabilitation, repositioning, suitable equipment, and a safe movement plan can help lower these risks.

Bladder dysfunction can cause urinary retention, leakage, or repeated urinary infections. Bowel problems can include constipation or incontinence. These symptoms may require structured management even when limb strength improves.

Nerve pain, muscle spasms, fatigue, and altered temperature sensation can continue after the active inflammation has settled. Sexual function and fertility-related concerns may also affect wellbeing and relationships.

Some people experience anxiety, low mood, grief, or difficulty adjusting to sudden changes in independence. These are important parts of recovery and can be treated.

A further episode is possible, particularly when transverse myelitis is associated with aquaporin-4 antibodies, MOG antibodies, multiple sclerosis, or another ongoing immune condition. Follow-up testing helps estimate this risk.

Prevention

Most cases of transverse myelitis cannot be prevented. There is no proven lifestyle change that reliably prevents a first episode.

If an infection or another medical condition is identified, treating it may reduce related health risks. When testing shows a condition that can cause repeated attacks, preventive immune treatment may be offered to lower the chance of recurrence. This is different from preventing unexplained transverse myelitis in someone who has never had it.

General measures such as regular movement within your abilities, skin care, bladder care, and recommended rehabilitation can help prevent complications. They do not prevent the original spinal cord inflammation.

Living with it and what to expect

The early course can be uncertain. Symptoms may worsen quickly and then stabilise once the inflammatory attack has ended. Recovery often begins during the first weeks, but it can continue for months or longer.

Some people recover most or all of their previous function. Others have lasting weakness, altered sensation, pain, stiffness, fatigue, or bladder and bowel problems. Severe spinal cord injury can lead to permanent disability. It is often difficult to predict the outcome from the first

few days alone.

Recovery does not always happen evenly. Bladder function, walking, pain, and sensation may improve at different rates. Progress can include plateaus, when little seems to change for a time. Rehabilitation may still help you become more independent even if nerve recovery is incomplete.

An isolated episode may never return. Recurrent attacks are more likely when an underlying condition such as neuromyelitis optica spectrum disorder or MOG antibody-associated disease is found. Follow-up may include repeat examinations, MRI scans, or antibody testing.

Over the longer term, many people return to work, education, family roles, exercise, or driving, sometimes with adjustments. Others need ongoing personal support or mobility equipment. Fatigue and invisible symptoms can remain important even when outward movement has improved.

When to get medical help

Seek urgent same-day medical assessment for new or rapidly worsening:

These symptoms do not always mean transverse myelitis, but they can indicate a spinal cord problem that needs prompt testing.

Call emergency services if weakness is progressing quickly, breathing becomes difficult, you cannot stand safely, or symptoms occur with severe breathing trouble, collapse, or reduced consciousness.

During recovery, routine follow-up is appropriate for ongoing stiffness, pain, fatigue, sexual difficulties, equipment needs, or stable bladder and bowel symptoms. Contact your care team sooner if symptoms suddenly return, infections become frequent, or your usual bladder routine stops working.

- Arm or leg weakness
- Difficulty walking or repeated falls
- Numbness spreading up the body
- Inability to urinate or sudden loss of bladder or bowel control
- Severe back or neck pain with weakness or numbness

Common questions

Is transverse myelitis contagious?

No. Transverse myelitis itself cannot spread between people. An infection that occurred before it may have been contagious, but the later spinal cord inflammation usually reflects an individual immune response.

Will I walk again after transverse myelitis?

Many people regain some or all walking ability, while others need long-term walking aids or a wheelchair. The outcome is influenced by the severity and location of the injury, how quickly symptoms developed, the underlying cause, and recovery during the following months. Early findings cannot provide certainty.

Does transverse myelitis mean I have multiple sclerosis?

No. Transverse myelitis can be a first sign of multiple sclerosis, but many people never develop it. Brain MRI findings, spinal fluid results, antibody tests, and any later symptoms help clarify the cause.

Can transverse myelitis come back?

It can. A single unexplained episode often remains isolated, but recurrence is more likely with aquaporin-4 antibodies, MOG antibodies, multiple sclerosis, or another immune condition. Long-term treatment may be considered when the risk of another attack is significant.

Can transverse myelitis affect sex or pregnancy?

It can affect sexual sensation, arousal, erections, lubrication, or orgasm because spinal cord pathways are involved. Bladder symptoms, pain, and fatigue may also affect intimacy. Pregnancy may need coordinated planning when mobility is limited or immune medicines are being used, but transverse myelitis does not automatically prevent pregnancy.

Is transverse myelitis the same as a spinal cord injury?

It is a cause of spinal cord injury, but it is not usually caused by physical trauma. The injury results from inflammation. Rehabilitation needs can be similar to those following a traumatic spinal cord injury.

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