

EVALUATING AND TREATING TRANSVERSE MYELITIS



This fact sheet is provided to help you understand the best methods of evaluating and treating transverse myelitis (TM).

Neurologists from the American Academy of Neurology are doctors who identify and treat diseases of the brain and nervous system. The following evidence-based information* is provided by experts who carefully reviewed all available scientific studies on diagnostic tests and therapies for TM.

What is TM?

TM is a rare nervous system disorder. It is a type of myelopathy, which refers to any disorder of the spinal cord. In TM, an area of the spinal cord becomes inflamed (swollen). The affected area extends partly or wholly across the width of the spinal cord. The inflammation can damage the spinal cord. When this happens, part or all of the body below the inflamed area can be affected. Symptoms may include muscle spasms, muscle weakness, and lower back pain. The person may have odd sensations of the skin and soft tissue. These include tingling, numbness, coldness, or burning. The skin may become very sensitive to touch. In some people, loss of bladder or bowel function and paralysis may occur.

Mild types of TM are more common than severe types. Both children and adults can be affected. The disorder typically develops from a single event. However, some people may have a relapse later. Symptoms develop and progress over hours, days, or weeks. TM and its causes are not well understood. However, the disorder may be linked to an autoimmune response. This happens when the immune system mistakenly attacks part of the body. Other diseases involving inflammation, such as multiple sclerosis (MS) or lupus, may also play a role. TM can also develop as part of a more involved nervous system disorder called neuromyelitis optica (NMO). In NMO, both the optic nerve, which controls the eyes, and the spinal cord are affected. TM of unknown cause is very rare. It occurs at a rate of one to eight people per million per year. The cause of TM is unknown in about 15 percent to 36 percent of people with the disorder.

Some cases of TM can be devastating. However, effective diagnostic tests and therapies are available. For many people with this disorder, rehabilitation and recovery are possible.

My doctor said I may have TM. How do I know for sure if I have it or what caused it? Are there tests to help confirm this?

TM is rare and sometimes confused with other spinal cord disorders. For these reasons, it is not fully understood.

However, tests can help confirm a diagnosis of acute TM. Also, some tests can help to identify the cause of the disorder. Knowing the cause can help in planning care and treatment.

Confirming the diagnosis

To diagnose TM, the doctor may begin by ruling out other types of myelopathy. The doctor may note the person's age, gender, and ethnicity. Weak evidence shows age and gender may help to narrow down the cause of the disorder. In particular, more older people than younger people tend to develop myelopathy that does not involve inflammation. Also, more females than males tend to develop TM caused by MS. There is not enough evidence to show if ethnicity points to a particular type of myelopathy. There also is not enough evidence to show if clinical features provide helpful information. Such features include length of time from onset to development of worst symptoms.

The doctor may test the spinal fluid for presence of abnormal levels of certain proteins. Presence of such proteins suggests inflammation may be involved. There is weak evidence that testing for these proteins may help rule out some types of myelopathy.

Understanding the cause

When a diagnosis of acute TM has been confirmed, it is important to pinpoint the cause of the disorder.

Understanding the types of acute TM can help. There are two main types: acute partial transverse myelitis (APTM) and acute complete transverse myelitis (ACTM). In APTM, the inflammation typically extends only partway across the spinal cord. People with APTM may have mild to moderate muscle weakness and odd sensory symptoms. The bladder also can lose functioning. In ACTM, inflammation affects the full width of the spinal column. Moderate or severe loss of body functioning can occur.

Because TM involves inflammation, testing for an autoimmune response can be helpful. Moderate evidence shows that testing for an autoimmune response to

aquaporin-4, a protein present in the nervous system, can help confirm acute TM caused by NMO. Moderate evidence also shows that this test can help predict risk of a relapse. Relapse is more common in APTM.

There is weak evidence that identifying the type of acute TM—APTM or ACTM—may help determine its cause. Specifically, studies show that APTM may be more likely than ACTM to develop into MS. MRIs of the brain support this. Weak evidence shows that brain lesions seen on MRIs may help predict conversion to MS after a first APTM episode.

MRIs of the spine also may give helpful information. Weak evidence shows that length of spinal lesions seen on MRI may help identify if a person has NMO or MS.

There is not enough evidence to show if age, gender, or ethnicity can point to a definite cause.

My doctor says I have acute TM. Are treatments available?

Several therapies are used to treat acute TM. One therapy, known as plasma exchange, involves replacing the plasma in a person's blood. Weak evidence shows plasma exchange may help treat TM in those who do not improve after corticosteroid treatment.

Another therapy, rituximab, is commonly used to treat cancer and some autoimmune diseases. Weak evidence shows rituximab may help reduce the number of relapses in people with TM caused by NMO.

There is not enough evidence to show if the following therapies help treat TM:

- Azathioprine
- Corticosteroids
- Cyclophosphamide
- Intravenous immunoglobulin (IVIg)
- Mitoxantrone

It is important to note that doctors commonly use high-dose corticosteroids as the first treatment for TM.

Not enough evidence is available to show if any other therapies help to lower the risk of future attacks.

Overall, current research supports the use of some of the available methods of diagnosing and treating TM. However, more and better studies are needed to understand and treat this disorder better.

Based on an AAN guideline endorsed by the Consortium of MS Centers

This statement is provided as an educational service of the American Academy of Neurology. It is based on an assessment of current scientific and clinical information. It is not intended to include all possible proper methods of care for a particular neurologic problem or all legitimate criteria for choosing to use a specific procedure. Neither is it intended to exclude any reasonable alternative methodologies. The AAN recognizes that specific patient care decisions are the prerogative of the patient and the physician caring for the patient, based on all of the circumstances involved.

*After the experts review all of the published research studies, they describe the strength of the evidence supporting each recommendation:

Strong evidence = more than one high-quality scientific study

Moderate evidence = at least one high-quality scientific study or two or more studies of a lesser quality

Weak evidence = the studies, while supportive, are weak in design or strength of the findings

Not enough evidence = either different studies have come to conflicting results or there are no studies of reasonable quality

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1080 Montreal Avenue • St. Paul, MN 55116
www.aan.com • (651) 695-1940