



Switching Disease-modifying Therapies for Multiple Sclerosis

The AAN is the world's largest association of neurologists and neuroscience professionals and is dedicated to promoting the highest quality patient-centered neurologic care. Neurologists are doctors who identify and treat diseases of the brain and nervous system.

Experts from the AAN carefully reviewed the available scientific studies on use of disease-modifying therapy, or DMT, for treating multiple sclerosis, or MS. The following information is a summary of the evidence from those studies and other key information.

Overview

In MS, the immune system attacks the brain and spinal cord. This damages nerves and the tissue that covers and protects nerve fibers. Damage to this protective tissue changes how the nerves deliver signals from the brain and spinal cord.

DMTs help slow the disease process and might help keep your condition stable. Several DMTs have either strong or moderate evidence supporting their use.

Using a DMT can be better than letting MS run its course without treatment. This is because MS usually gets worse over time. However, all medicines have possible risks.

Before deciding to start DMT, be sure to think about both the benefits and the risks.

For information on the AAN's levels of evidence, see the Key to Evidence Levels at the end of this sheet.

Types of Multiple Sclerosis

Relapsing

Relapsing-remitting MS (RRMS)

- Most Common MS Type
- Relapses—New or Worsening Symptoms
- Remission—Stable Between Relapses

Progressive

Secondary Progressive MS (SPMS)

- Started as RRMS
- Now Slowly, Steadily Getting Worse
- Some Relapses But Less Often

Primary Progressive MS (PPMS)

- Gradual Worsening from the Beginning
- Usually No Relapses

Clinically Isolated Syndrome (CIS)

CIS may become MS

- One or More Symptoms That Are Like MS Symptoms
- Symptoms Last 24 Hours or Longer
- At Higher Risk of MS
- Amount of Risk Depends on Clinical Exam and MRI Results

Treatment for Multiple Sclerosis

Disease-Modifying Therapies

Disease-modifying therapies (DMTs) for MS help slow the disease process to help keep your condition stable.

Lesions

DMTs lessen the number of new lesions that form or keep existing lesions from getting larger. These are abnormal spots on the brain or spinal cord.

Relapses

DMTs lessen the number of relapses that happen.

Symptom Management

DMTs are not prescribed to treat MS symptoms.

Dizziness, Fatigue, Pain

- Dizziness
- Feeling lightheaded
- Chronic pain
- Tiredness and lack of energy

Emotional Problems

- Depression, or a state of sadness that can last a short or long time
- Anxiety, or a state of fear that can last a short or long time

Vision

- Blurred vision
- Pain with eye movement

Thinking and Memory

- Trouble learning and remembering new information
- Trouble organizing and problem solving

Muscle/Movement

- Spasticity, or muscle tightness that makes it hard to move normally
- Weakness
- Numbness or tingling

Bladder/Bowel Problems

- Difficulty emptying bladder
- Difficulty moving or emptying bowels

Choosing Whether to Switch to Another DMT

Some people with MS have a return of disease activity while using a DMT. If this happens to you, talk with your clinician about whether to switch to another DMT. Be sure to let your clinician know the following things:

- How long you have been using the DMT—it can take a year or longer for a DMT to take full effect
- Whether you have been using the prescribed amount at the prescribed times

For people with RRMS whose disease activity returns during DMT use, some medicines may be more helpful choices. However, there is not enough evidence to show which DMTs to switch to. If you are thinking of switching to another DMT, talk with your clinician about which DMTs might be good choices.

The decision whether to switch from one DMT to another depends on the risks and benefits and your specific situation. Your clinician may want to determine your level of MS activity in the following way:

- Blood tests to rule out other disease processes
- An MRI scan to check for new or growing lesions in your brain or spinal cord

Pregnancy and Reproductive Health

Most DMTs have health risks for pregnant women with MS or their unborn babies. Some DMTs also can affect reproductive health for men with MS.

Tell your clinician if you are or plan to become pregnant. Your plans may affect your decisions about DMT use and choice.

Risk of Serious Infections

Progressive multifocal leukoencephalopathy, or PML, is a rare brain infection that damages the white matter of the brain. Certain DMTs can put people at risk of PML and other serious infections.

The DMT natalizumab carries the highest PML risk. This risk is higher if a person has a blood test showing antibodies to the John Cunningham virus. If this happens to you while using natalizumab, talk with your clinician about switching to a DMT with a lower PML risk.

If you develop a serious infection that could be linked to your DMT, work with your clinician to switch to another DMT.

To read the full guideline, visit [AAN.com/guidelines](https://www.aan.com/guidelines)

This practice guideline was endorsed by the Multiple Sclerosis Association of America and the National Multiple Sclerosis Society.

Key to Evidence Levels

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

Strong evidence = Future studies very unlikely to change the conclusion

Moderate evidence = Future studies unlikely to change the conclusion

Low evidence = Future studies likely to change the conclusion

Very low evidence = Future studies very likely to change the conclusion

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.

The AAN develops these summaries as educational tools for neurologists, patients, family members, caregivers, and the public. You may download and retain a single copy for your personal use. Please contact guidelines@aan.com to learn about options for sharing this content beyond your personal use.

American Academy of Neurology, 201 Chicago Avenue, Minneapolis, MN 55415
Copies of this summary and additional companion tools are available at AAN.com or through AAN Member Services at (800) 879-1960.