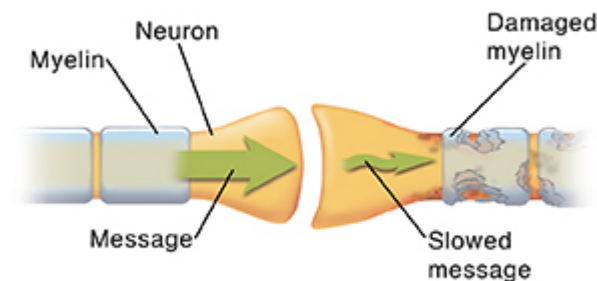


Understanding Multiple Sclerosis (MS)

Multiple sclerosis (MS) is a disease of the brain and spinal cord. Unfortunately, there is no cure for MS. But there are many treatments available. Many people with MS can manage their symptoms and lead active, healthy lives. Read on to learn more about MS and its treatments.



What is MS?

The brain is the body's control center. Each part of the brain controls specific functions. These include movement, balance, sensation, and reasoning. The brain controls these functions by sending and receiving messages through nerves. Nerves have a protective covering (myelin). With MS, the myelin on nerves in the brain and spinal cord is damaged. The loss of this covering causes messages traveling along affected nerves to slow or stop. This results in MS symptoms.

Causes and risk factors for MS

Experts don't know what causes MS. But most research suggests that the body's immune system attacks and destroys myelin by mistake. MS most often begins in adults between ages 20 and 40. It happens in women more often than men. It also is more likely to occur if a person has a family history of MS. Many genes have been identified that increase the risk of developing MS. A past infection with Epstein-Barr (mononucleosis) is more common among people with MS. Those with MS are also more likely to smoke, have vitamin D deficiency or childhood obesity.

Types of MS

There are 4 main types of MS. These are:

- Relapsing-remitting MS. This type of MS is the most common. It's marked by isolated episodes of symptoms (also called attacks or flare-ups). Periods of partial or complete recovery follow these episodes. Each attack may be worse than the one before it.
- Primary-progressive MS. This type of MS is marked by a slow onset of symptoms that gradually worsen over time. There are no periods of recovery.
- Secondary-progressive MS. This type of MS begins as relapsing-remitting MS. After a period of stability, the disease steadily gets worse. About 50% of people with

relapsing-remitting MS have secondary-progressive MS within 10 years of their first attack. About all of them have it within 25 years.

- Progressive-relapsing MS. This type of MS includes both slowly progressive symptoms and periods of flare-ups together.

Symptoms of MS

MS symptoms vary from person to person. The type of symptoms a person has depends on which nerves are affected. It also depends on how much nerve damage there is in the brain and spinal cord. A person can also have different symptoms during the course of the disease. Symptoms can include:

- Extreme tiredness (fatigue)
- Numbness, tingling, or loss of feeling
- Pain
- Muscle spasms or weakness in the arms, legs, or both
- Vision problems, such as rapid eye movements, double vision, or vision loss
- Balance and coordination problems
- Problems walking or moving the arms, legs, or both
- Bowel and bladder control problems
- Problems with sexual function
- Dizziness
- Trouble concentrating, focusing, or remembering things
- Trouble reasoning and solving problems
- Trouble speaking or swallowing
- Depression

Diagnosing MS

- MRI. This test provides detailed pictures of the brain and spinal cord. It helps check for areas of damaged nerves. These are often referred to as lesions or plaques.
- Visual evoked potentials. This test is done to see how well your optic nerves are working.
- Spinal tap (also called lumbar puncture). This test checks the health of the fluid around your brain and spinal cord for signs of nerve sheath damage (demyelination).
- Blood tests. These help rule out other causes of the symptoms.

Treating MS

The goal of treatment is to manage your symptoms and slow the rate at which the disease worsens. You can manage your symptoms in one or more of the following ways:

- **Medicines.** Some medicines help keep your body's immune system from attacking the myelin. This may reduce the frequency and severity of attacks. Other medicines help control symptoms or relieve pain when attacks happen.
- **Rehabilitation (rehab).** Symptoms or problems due to MS can interfere with daily living. Rehab includes physical, occupational, or speech therapy. This can help you maintain strength and function. If needed, your healthcare provider will prescribe aids such as canes, walkers, or wheelchairs. You can also make changes in your work or living space to improve your safety.
- **Supportive services.** These include counseling and support groups to help you cope with the challenges of living with MS. Family members and friends may also benefit from these services.
- **Lifestyle changes.** Making certain changes in your lifestyle and daily routine may help you manage symptoms. This includes getting enough rest and regular exercise. It also includes eating healthy foods and reducing stress. It's helpful to figure out and stay away from things that trigger MS episodes.
- **Other treatments.** Researchers are exploring new treatments for MS. Many of these are in clinical trials. This means they are being tested for safety and effectiveness. Your healthcare providers can give you more information about any treatments that might be an option for you.

Long-term concerns

MS is an unpredictable disease. Your experience will be different from other people's experiences. In general, if you have MS, you should have regular visits with your healthcare provider. They will watch your symptoms. Your healthcare provider will review how well your medicines and other treatments work. MS symptoms may get worse as your disease progresses. If this happens, you may need more aggressive care and treatments.