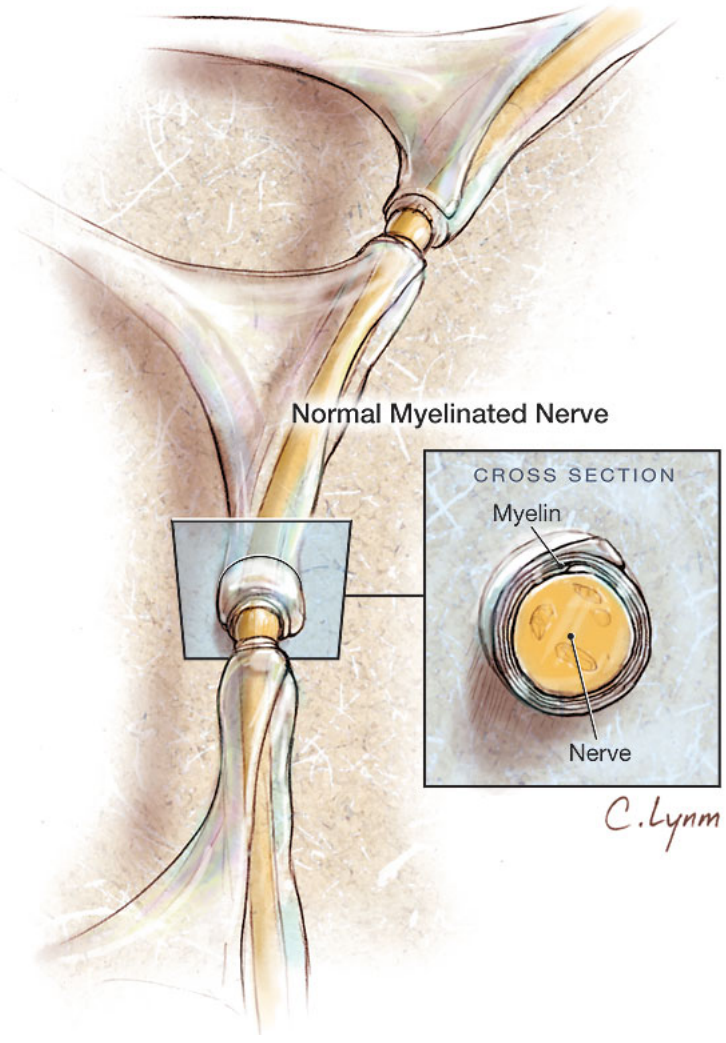
Multiple Sclerosis

Multiple sclerosis (MS) is a chronic neurological disorder that affects the **central nervous system** (brain and spinal cord). The disease process results in inflammation and damage to myelin (insulation of the nerve fibers) and other cells within the nervous system. Because myelin aids the conduction of nerve signals, damage to myelin results in impaired nerve signaling and may impair normal sensation, movement, and thinking. This damage occurs in patches that appear as distinct lesions on **magnetic resonance imaging** (**MRI**)—the use of magnetic fields to create detailed images of the body. The patches cause different symptoms depending on their location within the nervous system.

Multiple sclerosis primarily affects adults, with an age of onset typically between 20 and 50 years, and is more common in women than in men. The cause of this disorder is not known, but environmental, viral, and genetic factors are thought to play a role. The December 20, 2006, issue of *JAMA* includes an article about multiple sclerosis and vitamin D levels. This Patient Page is based on one previously published in the January 26, 2005, issue of *JAMA*.



SYMPTOMS

- Visual disturbances, which may include eye pain, distortion or loss of vision in one eye, or impairment of color perception
- Difficulty walking or performing tasks that require coordination
- Loss of sensation
- Fatigue and/or weakness
- Loss of bowel or bladder control

DIAGNOSIS

In addition to a complete medical history and physical examination including a detailed neurological examination, your doctor may order blood tests and refer you to a **neurologist** (a doctor with specialized training in diseases of the nervous system). Your doctor may also order an MRI scan of your brain and/or spinal cord to look for the characteristic patches of MS and may perform a **lumbar puncture** ("spinal tap")—sampling of the **cerebrospinal fluid** (the fluid that surrounds the brain and spinal cord)—to analyze for proteins associated with the disease.

TREATMENTS

Currently there is no cure for MS. However, there are treatments available that may slow its progression and alleviate associated symptoms.

- **Drug therapies**—Medications that target the body's immune system may decrease the frequency and duration of attacks. These medications can be used on a long-term basis and also to treat specific attacks. Additional medications may be prescribed for other symptoms, such as pain or depression.
- **Additional therapies**—Because MS may affect the patient's ability to perform self-care and other activities of daily living, treatment may also include referral to specialists for physical and occupational therapy.