What Is Multiple Sclerosis?

Multiple sclerosis (MS) is a chronic autoimmune disease that damages the protective covering around nerves in the brain and spinal cord due to inflammation.

In areas of the brain and spinal cord affected by MS, signals transmitted across nerves are slowed or blocked, causing neurological symptoms that can result in decreased quality of life and disability.

Who Is Affected by and at Risk of MS?
About 900,000 people in the US have MS. Onset of symptoms typically occurs at age 20 to 30 years. Women are nearly 3 times more likely to develop MS than men. Other risk factors for MS include certain genetic factors, low vitamin D levels, low levels of sunlight exposure, Epstein-Barr virus infection, and cigarette smoking.

Common Types and Symptoms of MS
Individuals with relapsing-remitting MS (the most common type) have neurologic symptoms that appear suddenly (relapse), followed by a period of complete or near-complete recovery (remission). Over time, the relapsing-remitting episodes may occur less frequently and individuals may develop gradually worsening disability (secondary progressive MS). Persons with primary progressive MS have symptoms that worsen over time without relapses and remissions.

Symptoms of MS include fatigue, blurred vision and eye pain (optic neuritis), weakness or changes in sensation in parts of the body such as the face, arms, or legs, dizziness, balance difficulty, impairment in memory or thinking, and problems with bladder control. Patients with MS are also at increased risk of depression and anxiety.

Diagnosis and Treatment of MS
The diagnosis of MS is typically made by a neurologist and is based on history of symptoms, physical examination, and characteristic abnormalities found on brain magnetic resonance imaging (MRI). In some cases, a lumbar puncture (spinal tap) is performed to confirm the diagnosis of MS.

Patients with MS should receive comprehensive, coordinated care from a neurologist and a team of other clinicians. Medications and other health interventions (such as physical, occupational, and speech therapy and counseling) are used to treat nerve pain, muscle spasms, fatigue, depression and anxiety, and urinary incontinence. Assistive devices, such as a brace or cane, may be helpful for patients with MS who have difficulty with balance and walking.

There are several classes of disease-modifying therapies for relapsing-remitting MS or progressive MS that develops after the onset of relapsing-remitting MS. These treatments include interferons, glatiramer, teriflunomide, S1P receptor modulators, fingolimod, cladribine, and several types of monoclonal antibodies. One drug (ocrelizumab) is approved for patients with primary progressive MS. Depending on which treatment is used, these disease-modifying therapies can decrease MS relapses by approximately 30% to 70%. Potential side effects of some of these treatments include infection, injection site reactions, low heart rate, and autoimmune thyroid disease.

Recommended Lifestyle Modifications for Patients With MS
People with MS should avoid cigarette smoking. They should also be encouraged to engage in physical activity, which is associated with fewer MS symptoms and decreased depression and fatigue. Pursuit of intellectually challenging activities may be associated with improved cognitive function for individuals with MS.