

Multiple Sclerosis
(MS)

MS is a chronic inflammatory disease of the central nervous system which tends to afflict young adults and which is characterized by destruction of the myelin sheaths which surround nerve fibers in the brain, optic nerves and/or spinal cord. The lesions characteristically occur at random intervals and random anatomic sites, such that clinical manifestations may be many and varied, with a changing pattern as time passes. The cause of MS has been a subject of speculation for generations. Genetic, viral and autoimmune theories all have supporting evidence.

The disease may rarely have a sudden onset with a fulminant course and rapid death over a period of weeks or months. More commonly it exists as (1) **exacerbating-remitting** disease or (2) **chronic, slowly progressive** disease. Remissions may be either complete (lasting from months to many years) or partial (with increasing increments of disability).

Signs and symptoms may be transient or permanent and include (in rough order of decreasing frequency): **retrobulbar neuritis** (with partial or total loss of vision in one eye), disturbances of sensation, ataxia (gait abnormality), diplopia (double vision), vertigo, nystagmus (abnormal eye movements), weakness in any one or all extremities, dysarthria (abnormality of enunciation), dysphagia (impaired swallowing), urinary dysfunction, impotence, hearing loss and numerous other neurologic deficits. More recently, it has been recognized that MS may also be associated with psychiatric abnormalities and impaired cognition (memory, attention, intelligence, conceptual and abstract reasoning, visiospatial skills).

The diagnosis of MS is largely based upon the history and neurologic examination. Supportive evidence may be obtained through electrophysiologic measurement of evoked potential, imaging studies (magnetic resonance imaging [MRI] and computed tomography [CT scan]) and analysis of cerebrospinal fluid (CSF). Characteristic CSF abnormalities are described in the Laboratory Section.

Treatment of MS varies with the clinical pattern. In the exacerbating-remitting form, corticosteroids and ACTH are usually very effective in hastening remission. However, doubt exists as to whether such therapy helps prevent future attacks or limits progressive disability. In the chronic progressive form, various immunosuppressive drugs are being used, but the results are less promising. Cyclophosphamide and azathioprine are the most commonly used agents. Others include interferon-B and cyclosporine-A.

The prognosis in MS is highly variable. A rare patient has fulminant disease with rapid progression to death. Others have a single attack followed by permanent remission and a normal life span. Most follow a course midway between these two extremes. Twenty percent or more of all MS patients have a totally benign course for 15 years or longer. Two long-term studies have revealed 25 year survival rates of 74-77% (compared to 82-86% for control populations). Among 25 year survivors, 2/3 remain ambulatory and 1/3 continue to work. Features which bear on the prognosis may be summarized as follows:

Feature	Relatively Favorable	Relatively Unfavorable
Gender	Female	Male
Initial Sx.	Optic Neuritis Sensory loss	Motor Dysfunction - Equilibrium - Strength
Clinical Pattern	Exacerbating-remitting	Chronic progressive
Disability	None 5 yr. After onset	Progressive from onset
Remissions	Complete, extended	Partial, brief

Rates are based on the duration since last attack and overall severity of disease.

Mild cases (only one attack) **Table 4** (1-3 years), **Table 2** (3-5 years), **STD** after 5 years

Moderate: 2-3 episodes & no residuals **Table 6**; mild residuals **Table 8**
4-5 episodes & no residuals **Table 8**; mild residuals **Table 12**

Severe : More than 5 episodes probably **No Offer**
No Offer