

## **Understanding MS**

Multiple Sclerosis (MS) is an inflammatory autoimmune disorder of the brain and spinal cord, characterized by neurologic dysfunction caused by damage to myelin, the fatty substance surrounding nerve cells that normally facilitates nerve transmission. For this reason, MS is referred to as a demyelinating disorder.

MS occurs about twice as frequently in women as men, and tends to be diagnosed between the ages of fifteen and fifty. The incidence and prevalence varies in different areas of the world, with the northern United States being one of the areas of high frequency.

The exact cause of MS is unknown, although both environmental and genetic factors may play a role.

Discrete episodes of neurologic dysfunction, called relapses, occur in MS. Although signs and symptoms can vary, some of the findings during relapses might include visual disturbances, including optic neuritis which is inflammation of the optic nerve, gait disturbance, spasms, numbness and tingling, fatigue, heat insensitivity, weakness, trouble speaking, tremor, vertigo, bladder and/or bowel dysfunction, balance difficulty, pain, depression, and others.



Major subtypes of MS are relapsing remitting, secondary progressive, primary progressive, and progressive relapsing MS.

At diagnosis, most people have the relapsing remitting type of MS, which is characterized by discrete relapses with near or total remissions and no disease progression between relapses.

Favorable consideration may be possible for cases with little functional impairment and stable MRI findings.

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Many with relapsing remitting MS will eventually enter the secondary progressive phase characterized by a progressive course and which may be associated with significant disability.

The primary progressive type is characterized by progressive disease at the onset with a steady decline in function rather than discrete episodes of relapse.

Progressive relapsing MS is associated with progressive disease at onset with acute relapses and disease progression between the relapses.

# Diagnosing MS

The diagnosis of MS is based upon the demonstration of abnormal clinical or MRI findings in the brain and spinal cord that are "disseminated in space and time".

Dissemination in space implies that the abnormal areas found on MRI are located in at least two of the regions that typically are involved in MS.



Dissemination in time signifies that clinical attacks occurred at different times or that the abnormal MRI areas appeared at different times.

The presence of areas of demyelination on imaging does not necessarily prove that MS is definitely present. But MS is highly likely if there are MRI findings typical of MS and the clinical findings and the doctors' impressions support this diagnosis.

Other test results that might also add supporting evidence for the diagnosis of MS include the presence of antibodies called oligoclonal bands in the cerebrospinal fluid (the fluid that surrounds the brain and spinal cord), and abnormal evoked potentials, which measure the electrical response of the central nervous system to stimulation.

# **Treating MS**

Acute exacerbations of MS are usually treated with large doses of corticosteroids, sometimes given intravenously.

A number of medications have been found to decrease the relapse rate, slow the progression of disability, and slow the accumulation of demyelinating lesions in relapsing remitting MS.

Some of these disease modifying medications include the interferons, glatiramer acetate, and natalizumab. Natalizumab can cause serious and potentially fatal side effects and is not considered to be a first line agent.

Certain characteristics may affect prognosis in MS. For example, the relapsing remitting type has a better prognosis than progressive types. Individuals who are younger at the time of onset tend to do better than those over age 40 at onset. The prognosis also tends to be more favorable if most of the symptoms are sensory, such as numbness and tingling.

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## **Underwriting MS**

The underwriter considers a number of factors when evaluating applicants with MS, some of which include the subtype, number of attacks per year, stability of neurologic function, symptoms, complications, treatments prescribed, and evidence of disability. It is helpful if complete neurology records are provided. If recent information indicates little in the way of functional impairment and stable MRI findings, more favorable consideration may be possible.

#### **Case Studies**

**Applicant 1** is a 50 year old who had relapsing remitting multiple sclerosis diagnosed twelve years ago, had not had an episode in the past ten years, has no symptoms, a normal neurologic examination, and had a favorable follow up with the neurologist two months ago.

This would be considered as "benign" multiple sclerosis. *This case can be Standard Plus*.

**Applicant 2** is a 35 year old who had relapsing remitting multiple sclerosis diagnosed five years ago, has had one episode per year, has been in remission for the past ten months, has a normal neurologic examination, and has no disability and no symptoms.

This case can be Two Tables.

**Applicant 3** is a 30 year old who had progressive relapsing multiple sclerosis diagnosed two years ago, is wheelchair bound, taking natalizumab, and who was recently hospitalized with an exacerbation and received intravenous corticosteroids.

This case is a decline.

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