

The Unknown Disease: Multiple Sclerosis

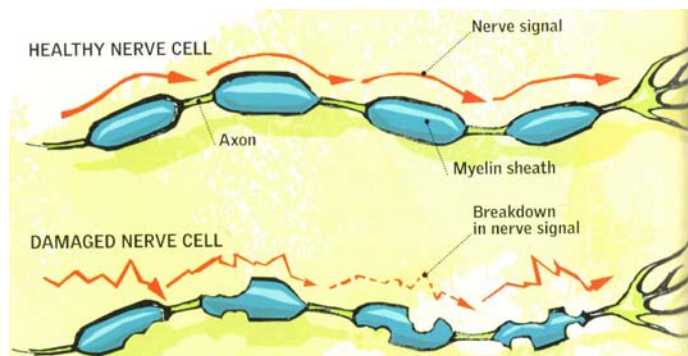
Paul Gilbert

April 16, 2007

What is Multiple Sclerosis?

Multiple Sclerosis is a chronic, long duration, disease that causes degeneration of myelin sheaths in the central nervous system. The myelin sheaths are areas of protective coverings on nerves that allow the proper fast conduction of electrical signals; the central nervous system (CNS) is made up of the brain, optic nerves, and spinal cord (Margolis, 2004). The following picture gives an excellent representation of myelin sheaths on a

nerve and the damaging results of Multiple Sclerosis (Take, 2006). Following a seemingly random attack on localized myelin, the damaged sheaths



(demyelination) form scar tissue (sclerosis). The distinct areas of scar tissue, multiple sclerosis plaques, present at different locations in the CNS give rise to the name Multiple Sclerosis (Crowley, 2004).

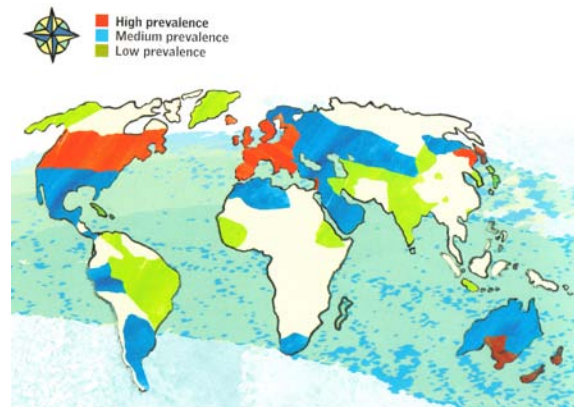
Multiple Sclerosis is a fairly unknown, complex disease, but is considered by many in the field to be an autoimmune disease: in a sense, the body is attacking itself. Initial symptoms commonly include eye problems such as blurred or double vision, muscle weakness in extremities, and loss of coordination and balance (NINDS, 2007). For a more detailed explanation of symptoms and disease progression, please see “What is life like with Multiple Sclerosis?”

There are two main types of Multiple Sclerosis: relapsing-remitting and primary progressive. Relapsing-remitting, responsible for 80% of MS cases, is characterized by a series of attacks. Symptoms will come (relapse) and go (remit) for variable periods of time. A relapse may last as short as a few weeks or as long as a few years. Remission is equally variable and, in some cases, remains permanent. Primary progressive MS gradually worsens without remission (Noseworthy, 2000).

Who gets Multiple Sclerosis?

There are around 400,000 patients in the United States and 2.5 million globally with MS (Take, 2006). Most people present initial symptoms between the ages of 20 – 40. MS is quite rare in children under 15 and rarely onsets after the age of 50 (Margolis, 2004). There are areas around the globe

of high prevalence: including the northern United States, Canada, and Europe as seen in the following picture (Take, 2006). Furthermore, there are twice as many women with MS than men (Take, 2006).



What causes Multiple Sclerosis?

To date, there is no known direct cause of MS. Scientists and doctors *believe* a combination of factors cause MS: a genetics component, an autoimmune component, and an environmental or infectious component. The genetics component is substantially supported by higher prevalence in families and studies done isolating certain types of

genes. The autoimmune component is almost fully accepted by those in the field by overwhelming evidence present in active cases. The more far-fetched hypothesis includes an environmental or infectious component. This is based on the high prevalence seen in certain geographic areas. Simply, Multiple Sclerosis “may be caused by a viral infection that stimulates an abnormal immune response... in a genetically predisposed individual” (Crowley, 2004).

How does a doctor diagnosis Multiple Sclerosis?

An MS diagnosis is commonly a result of months of testing and is the end result of ruling out other diseases that may be causing MS-like symptoms. At this point in time, there is no single, definitive test for MS. Doctors will, however, want a complete medical history, complete a broad range of clinical tests to determine motor and sensory functions, order a spinal fluid test (lumbar puncture), and have the patient undergo an MRI (Take, 2006). A definite diagnosis is very tough to make and usually can take 6 months to over a year. The doctor will be looking for a history of relapsing-like symptoms, current symptoms matching those common to MS, certain cells present in spinal fluid, and the presence of MS plaques of different ages at various locations in the CNS (Noseworthy, 2000). This long process of testing is often very taxing for patients.

How do you treat Multiple Sclerosis?

Unfortunately, there is no none cure for MS. Standard treatments aim to relieve neurological symptoms, shorten and lessen severity of relapses, and help psychological problems. Treatment plans are highly individualized for each patient. Steroids are used to help a patient through a relapse; beta interferons, such as Avonex, are aimed to reduce

the number of relapses and hopefully slow the progression of the disease (NINDS, 2007). Antidepressants may be prescribed along with therapy sessions with either a psychologist or a specialized MS nurse. Many MS drugs, however, have serious side effects; thus, some patients choose to forgo treatment and many of these patients do very well.

Whether the patient elects a prescription drug treatment or not, all doctors will recommend some standard life-style changes: avoid overheating, avoid overexertion, and stay active. Elevated body temperatures (from sunbathing, hot tubs, hot baths, heavy exertion, etc.) can exacerbate symptoms (Margolis, 2004). Staying active, commonly with the help of physical therapy, is an important factor for all MS patients in hopes to maintain and preserve remaining motor and sensory functions (NINDS, 2007).

Can you prevent Multiple Sclerosis?

There is no known way to prevent the onset of Multiple Sclerosis. Please note: Although some researchers believe there is an “infectious” viral component of the disease, Multiple Sclerosis is NOT contagious.

What is life like with Multiple Sclerosis?

MS patients will experience a wide range of symptoms throughout their relapsing or progressing disease course. Common symptoms include eye pain and visual disturbances (MS of the optic nerve), confusion and loss of memory (MS of the brain), and muscle weakness and eventual paralysis (MS of the spinal cord). Additional symptoms include fatigue and depression as a result of fighting a chronic disease (Margolis, 2004). Approximately 10% of patients will enter permanent remission, while

50% of patients will need some aid for walking within 15 years (Noseworthy, 2000). MS is not considered a life-threatening condition, but a life-changing one.

What research is being done on Multiple Sclerosis?

Many labs are researching new potential treatments for MS, focusing on the promising natural antiviral proteins: interferons (NINDS, 2007). Other labs are searching for the cause and pathology of MS to better understand this unknown disease (Noseworthy, 2000). Finally, many clinical trials for new treatments are ongoing across the nation. For information about clinical trials and how to join see www.nmss.org.

Where can you find more information about Multiple Sclerosis?

There are many accredited websites which will offer information on research, treatments, and living with MS. Furthermore, some of these resources will help you find a local MS chapter in your area. For more information, please visit:

www.nmss.org (National Multiple Sclerosis Society)

www.msaa.com (Multiple Sclerosis Association of America)

www.ninds.nih.gov (NIH's National Institute of Neurological Disorders and Stroke)

www.iomsn.org/slides/patientflipchart-IOMSN.pps#276,1,Slide 1
(Similar content to "Take on MS" patient hand-out, both the hand-out and this online source were reviewed by the International Organization of Multiple Sclerosis Nurses)

The MS motto:

HOPE

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