



National MS Society Information Sourcebook

www.nationalmssociety.org/sourcebook

Autoimmune Disease

Multiple sclerosis is believed by MS experts to be an autoimmune disease. The prefix “auto” means “self.” Autoimmunity means that the immune system is reacting against normally-occurring antigens in the person’s body, as if these antigens were foreign. Antigens are generally proteins that stimulate an immune response.

Some other diseases thought to have an autoimmune basis are:

- myasthenia gravis
- rheumatoid arthritis
- systemic lupus erythematosus
- insulin-dependent (*Type 1*) diabetes mellitus.

In the case of MS, the target of the immune attack is believed to be a component of myelin in the central nervous system. Myelin is a fatty sheath that surrounds and protects nerve fibers. T cells, which are one type of white blood cell in the immune system, become sensitized to myelin and cross the blood-brain barrier into the central nervous system (CNS). Once in the CNS, these T cells not only injure myelin, but secrete chemicals that damage nerve fibers (axons) and recruit more damaging immune cells to the site of inflammation.

It is not known what causes T cells in persons with MS to become activated but it is postulated that both genetic and environmental factors are important.

Research Directed at Role of Immune System in MS

Scientists have begun to identify the sites or “receptors” on the T cells that bind to the myelin. The precise identification of these receptor sites may help lead to the development of more specific immunosuppressant therapies that destroy these sensitized T cells while leaving other cells intact. Much of the ongoing research in MS is directed towards finding answers to questions about the role of the immune system in the development of MS.

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See also...

Sourcebook

- Chemotherapy
- Clinical Trials
- Research
- T Cells

Society Web Resources

- About MS
www.nationalmssociety.org/AboutMS
- Spotlight: MS and Myelin
www.nationalmssociety.org/Myelin

Book

Kalb R. (ed.) *Multiple Sclerosis: The Questions You Have; The Answers You Need* (3rd ed.). New York: Demos Medical Publishing, 2004.
—Ch. 2 Neurology

The National Multiple Sclerosis Society is proud to be a source of information about multiple sclerosis. Our comments are based on professional advice, published experience, and expert opinion, but do not represent individual therapeutic recommendations or prescription. For specific information and advice, consult your personal physician.

To contact your chapter, call **1-800-FIGHT-MS** (1-800-344-4867) or visit the National MS Society web site: www.nationalmssociety.org.

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Last updated January 2006