



National MS Society Information Sourcebook

www.nationalmssociety.org/sourcebook

Experimental Allergic Encephalomyelitis (EAE)

Experimental allergic encephalomyelitis (EAE), and the related experimental autoimmune encephalomyelitis, are diseases of the brain and spinal cord, similar in many respects to MS, which are induced in laboratory animals. Animals with EAE serve as animal models for MS, allowing experimentation that would be impossible and unethical in humans who have the disease. Like MS, EAE is a demyelinating disease—it destroys the myelin, the fatty sheath that protects and surrounds nerve fibers. EAE can be induced in rats, mice, guinea pigs, rabbits, and monkeys. Like MS, it takes several clinical forms, including relapsing-remitting and progressive-relapsing.

EAE is induced in strains of lab animals that are susceptible to the disease by injecting myelin or specific myelin proteins in combination with an immune-exciting agent, called an adjuvant.

Animal Studies Yield Important Information About MS

Much of our current knowledge about the disease damage (pathology) and immune responses underlying MS has been gained from studies of animals with EAE. Information derived from microscopic and biochemical examination of the brain, blood, and spinal cord of animals with EAE includes:

- Identifying sites in the central nervous system that are more likely to develop MS lesions—damaged areas—also known as plaques;
- Finding out which immune cells are involved in the formation of plaques and how they interact; and
- Developing experimental treatments or manipulations that can stop or reverse the demyelinating process.

At least two of the currently available MS therapies—mitoxantrone (Novantrone) and glatiramer acetate (Copaxone) were developed because of promising findings in mice with EAE. Ongoing studies of EAE in the laboratory will continue to be an important early step in the development of new therapies for MS.

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See also...

Sourcebook

- Animals in MS Research
- Research

Society Web Resources

- FAQ about Society-Funded MS Research
www.nationalmssociety.org/ResearchFAQ
- Research Fact Sheet
www.nationalmssociety.org/ResearchFactSheet

Book

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

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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