

RESEARCH/CLINICAL UPDATE

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ADDITIONAL ROUTING

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SUMMARY OF RESEARCH PROGRESS – 2005

The year of 2005 saw rapid research progress in the fields of science and medicine that impact our understanding of the unpredictable neurological disease of multiple sclerosis. Thanks to its generous contributors, the National MS Society was able to invest over \$35 million this year into MS research projects in the U.S. and abroad. In 2005, the Society supported over 350 MS research projects including the launch of 125 new projects.

Significant advances have been made in both clinical and laboratory studies in MS. In addition, more than 130 clinical trials are underway around the world, and still other experimental drugs are in the pipeline. Key highlights of the year include:

- The [largest awards](#) ever made for research aimed at protecting and reversing neurological damage and restoring function in people with MS went to four teams in the U.S. and Europe, who are using \$15.6 million from the National MS Society to lay the groundwork for clinical trials over the next five years. These awards are part of the Society's Promise 2010 Campaign, a nationwide effort to raise at least \$30 million for targeted areas of research and patient care that hold great potential in the fight to end the devastating effects of MS but which have so far been under-explored.
- An international panel updated the criteria used to [diagnose](#) multiple sclerosis, incorporating new data which should speed the diagnosis without compromising accuracy. The International Panel on Diagnosis of MS, organized and supported by the National Multiple Sclerosis Society, with additional financial support from the MS International Federation, developed new diagnostic criteria for MS in 2001 which have been extensively tested and used since then.
- Researchers from the University of California, San Francisco, supported in part by the National MS Society, found significant differences when comparing the clinical characteristics of MS in [African Americans](#) and Caucasian Americans. Blacks with MS were more likely to experience a more aggressive course of disease, more likely to develop mobility impairments, and more likely to develop opticospinal MS and transverse myelitis.

- Two different experimental [oral therapies](#) for MS showed positive results in preliminary Phase 2 clinical trials, according to researchers reporting at the 2005 European Neurological Society meeting. The results suggest that FTY720 (Novartis Pharmaceuticals Corp) and temsirolimus (Wyeth Pharmaceuticals) warrant further clinical study.
- The Society announced the establishment of support for the first six [Pediatric MS Centers of Excellence[™]](#). As these new facilities set the highest standard for pediatric MS care, they are simultaneously gathering critical data to ultimately help researchers worldwide better understand the course that MS takes from the very beginning of the disease, when symptoms first appear.
- The National MS Society joined forces to convene an international workshop to identify major obstacles to the growth of MS [rehabilitation research](#) and recommended specific strategies to move MS rehabilitation research forward. Co-sponsors were the NIH's National Center for Medical Rehabilitation Research, the MS Society of Canada, and the University of Washington MS Rehabilitation Research & Training Center.
- A gene known as [Olig1](#) was linked for the first time to repairing damage that occurs to nerve fiber-insulating myelin in MS by a team of researchers funded by the National MS Society's Collaborative MS Research Center Award (Dana-Farber Cancer Institute, Boston, and Albert Einstein College of Medicine, Bronx, NY). The results may help to develop therapeutic strategies for MS that enhance Olig1 capabilities to reverse tissue damage in MS.
- An international team of investigators involved in the National MS Society-funded MS Lesion Project published findings indicating that individuals with a specific pattern of tissue damage responded to [plasma exchange therapy](#), a treatment used occasionally to treat individuals experiencing severe MS attacks that do not respond to standard steroid therapy.
- An international team led by Mayo Clinic researchers uncovered a [genetic clue](#) which, if confirmed, may help explain why women develop MS about twice as often as men. The team identified a variation in a gene that controls a powerful immune messenger chemical called interferon (IFN) gamma. IFN gamma has been linked to immune attacks in MS, and these findings suggest that men have the gene variant that causes high levels of interferon gamma less often than women. This project was funded through a collaborative initiative between the National MS Society and the National Institutes of Health (NIH).
- Harvard researchers funded by the National MS Society reported that [smoking](#) was associated with a moderate increase in the risk of developing MS in a study of 201 people with MS and 1913 people without MS; they also found an association between smoking and risk of MS progression in 20 people whose MS progressed during the study's follow-up period. This study is the first to show that smoking may be a risk factor for MS progression.
- In a separate study, Harvard researchers reported that women who used [oral contraceptives](#) had a 40% reduction in the risk of developing multiple sclerosis compared to nonusers during the previous three years. This study provides further support for the concept of hormonal influences in MS, but does not provide direct evidence that oral contraceptives can prevent the onset of this disease. One of the co-investigators is supported by a grant from the National MS Society.
- In a small, controlled clinical trial funded in part by the National MS Society, Oregon Health & Science University investigators administered [ginkgo biloba](#) or inactive placebo

for 12 weeks to 39 individuals with MS and cognitive impairment. The ginkgo group showed improvement in a test that measures learning and memory, but there were no significant differences between groups on other tests. The investigators suggest that further study of ginkgo biloba for improving attention in MS is warranted.

- With seed funding from the National MS Society, a group of leading MS researchers established a [collaborative group of clinical centers](#) poised to conduct major clinical studies to improve care and enhance therapy options for people with MS. The group, which has adopted the name MS-CORE (Multiple Sclerosis Cooperative Research Group), consists of integrated Coordination, Statistical, and Image Analysis centers as well as 85 study sites in the U.S. and Canada. The group is dedicated to research in which investigators design and implement the studies and maintain control of the data generated, unlike many drug company-sponsored clinical trials where the sponsor controls the data and its release.
- Mayo Clinic researchers have discovered a specific antibody in the blood of individuals with a relatively rare disorder called [neuromyelitis optica](#) (NMO, also known as Devic's syndrome) that clearly distinguishes it from MS. NMO was until recently regarded as a severe form of MS. Because MS and NMO have different treatment regimens, a test that distinguishes these disorders at the onset of symptoms would improve treatment outcomes. This study was funded in part by the National MS Society.
- In partnership with International MS Genetics Consortium (IMSGC), the National MS Society committed \$1.1 million to jump-start an international effort to [map the genome](#) (all of the genetic material within humans) of multiple sclerosis. The IMSGC is a group of international MS genetic experts created with funding from the National MS Society. This group is using a new technological advance, a DNA chip that enables investigators to test 500,000 individual genetic locations (sites within genes) at one time for possible involvement in MS, potentially speeding the genetic analysis to less than one year's time.
- Researchers at the San Raffaele Hospital (Milan, Italy) published unexpected results of studies in which [immature nerve cells](#) (adult mouse neural stem cells) injected into the blood of mice with MS-like disease were able to suppress the immune attacks that damage the brain and spinal cord tissues. The study was funded in part by the National MS Society.

These and other leaps forward have made 2005 a momentous year in the fight against MS.

-- Research Programs Department