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RESEARCH/CLINICAL UPDATE

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Disputing Earlier Findings, New Study Reports Men and Women with MS Transmit the Disease Equally to Their Children

Researchers report that fathers and mothers with MS transmit the disease to their children at the same rate, disputing a recent study that found fathers with MS were more likely than mothers to pass on the disease. Dr. George Ebers, Dr. B. M. Herrera (Oxford University, UK) and colleagues report their findings in an early online release by the journal *Neurology* (June 27, 2007) from a study funded by the Multiple Sclerosis Society of Canada Scientific Research Foundation.

Although MS is not directly inherited, a person who has a parent with MS has an increased risk for developing the disease (previous studies have reported 1 chance in 40 versus 1 chance in 750 for the average American). Thus, while the risk increases, it still remains relatively low. Most researchers believe that MS occurs in individuals who have genes that make them susceptible to an unknown environmental trigger or triggers. In addition, women are twice as likely as men to develop MS. The reason for this difference is unknown.

A recently published [study](#) from the Mayo Clinic and other institutions, which was based on information from 197 families, had suggested that men with MS were more than twice as likely to transmit MS to their children than women. Dr. Ebers' team examined this possibility using a much larger sample of families available through the Canadian Collaborative Project on Genetic Susceptibility to MS. They focused on 3,088 families with one affected parent and a total of 8,401 of their children, of which 798 had developed MS. Transmission of MS from mothers and fathers to sons and daughters was compared.

The results show that 9.76 percent of affected mothers transmitted MS to their children, and 9.41 percent of affected fathers transmitted MS to their children -- not a significant difference.

The researchers also found a similar ratio of daughters to sons (about 2.4 to 1) developed MS no matter the sex of the affected parent.

These findings dispute the Mayo study findings and the possibility proposed by those authors that men (who are more resistant to MS) who actually develop the disease must have more susceptibility genes in order to overcome that resistance, and therefore might be expected to pass on a larger number of genes or stronger susceptibility genes to their children.

The findings of the current study, while interesting from a scientific perspective, are not likely to change any advice that genetic counselors might give to prospective parents.

The authors of the current study suggest that these and other findings shed doubt on the dominant hypothesis that MS susceptibility involves many genes.

“This strong study provides important information on the transmission of MS in families,” says John Richert, MD, Executive Vice President of Research & Clinical Programs for the National MS Society. “Many investigators believe that there is good, emerging evidence that MS involves multiple susceptibility genes. Thanks in part to vital, international collaborations supported by the National MS Society, the genetic picture in MS is starting to come into focus, and we should have some answers soon to these important genetic questions.”

-- Research and Clinical Programs Department