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Researchers Reduce MS Disability With Stem Cells

By Jessica Berman

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Steven Mintz, diagnosed with multiple sclerosis more than 20 years ago, increasingly depends on his wife, Suzanne, for his daily needs.

Scientists are hesitant to call it a cure, but they have succeeded in significantly reducing -- and in some cases, reversing -- disability caused by the crippling disorder multiple sclerosis. The therapy involves using the patient's own stem cells in a single treatment.

The stem cells are collected from the patient's blood and they are used to reset the immune

system, so the body's fighter cells no longer mistake the patient's own nervous system tissue for an invader. Those attacks cause disability and autoimmune diseases like multiple sclerosis.

MS is a degenerative disease. Ten years after being diagnosed, half of all MS patients are unable to work, and after 25 years with the disease, half lose the ability to walk.

Richard Burt, chief of the Division of Immunotherapy at Northwestern University in Evanston, Illinois, led a study of 150 MS patients, most with the mildest form of the disease called relapsing-remitting MS, in which they received the stem-cell therapy.

He said their disability seemed to reverse itself or disappear.

"This is a one-time treatment and then you are done. And so we hope patients never need to be treated again," said Burt.

About half of the patients tested two years after the study showed significant improvement in their movement and cognitive function. Of the three dozen participants tested after four years, 23 had continued improvement of their symptoms, and 80 percent were free of relapses or flare-ups.

Ten percent of patients required another treatment after five years. Some of the participants, who had a more serious form of MS, did not improve.

MS disease progression and severity are measured by the number of lesions in the brain seen by high-tech imaging. Most of the patients who received the stem cells had fewer brain lesions.

Treatment for multiple sclerosis is expensive, typically close to \$50,000 or more per year.

While stem cell therapy also would cost a lot of money, most likely a lot more than current treatments, Burt said it could be more cost efficient.

".. a win-win where the patient gets better. Their life improves. They are free of medications, the majority for a long period of time, and may end up, if you look at it over at least 18 months, start saving money for society," he said.

Writing in the [Journal of the American Medical Association](#), Burt said the results for the long term are promising, but he remains cautious about the [lasting effects of the treatment](#).

Studies of the stem-cell therapy for multiple sclerosis continue at Northwestern University, and in Brazil, Sweden and the United Kingdom.

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Osteoarthritis is a common condition seen in older people in which the tissue between joints becomes worn down, causing severe pain. In what could be an important development for people who suffer from it, U.S. researchers have isolated stem cells in adult mice that regenerate both worn tissue, or cartilage, and bone. For the past decade, researchers have been trying to locate and isolate stem cells in the spongy tissue or marrow of bones of experimental animals.



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