

# This Could Be Game-Changing News in the Battle Against Multiple Sclerosis

Multiple sclerosis affects more than 400,000 people in the United States and around 2.5 million people globally. That's why this potentially game-changing study's results are so promising and important.



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SOURCE: [FLICKR](#) USER DOMINIK GOLENA

For a disease that affects more than 400,000 people in the United States and approximately 2.5 million around the globe, multiple sclerosis is arguably not getting its fair share of attention from drug developers and researchers.

According to the National Institutes of Health, which has an annual budget near \$40 billion, only \$115 million is expected to be spent on MS research in 2015.

What makes MS a particularly scary disease -- beyond just its more serious complications like loss of vision and/or paralysis -- is that there are a number of unknowns even after decades of research. For example, scientists are still uncertain what causes MS, although they have a hunch it has to do with some combination of genetics and environmental factors, since the rate of MS prevalence above the 37th parallel is about to double what it is below the 37th parallel.

In recent years, MS diagnoses have been on the rise, although researchers

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simply attribute this to earlier diagnosis and better detection of the disease. MS

can strike anyone at any age, but it's most often diagnosed when people are between the ages of 20 and 40.

Clearly, MS patients need help now, and not just in curbing their symptoms, but in actually finding ways to stop or reverse their disease. Thankfully, new research out of Northwestern University's Feinberg School of Medicine just might offer some game-changing and positive news.

### **Potentially game-changing news for select MS patients**

Based on a [study](#) published in the *Journal of the American Medical Association* by Dr. Richard Burt and his team at Northwestern University, utilizing nonmyeloablative hematopoietic stem cell transplantation resulted in substantial improvements in select MS patients' quality of life and neurological disability.



SOURCE: [FLICKR USER LWP](#)  
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What's hematopoietic stem cell transplantation, or HSCT? It's the process whereby researchers harvest a user's own stem cells from their bone marrow or peripheral blood (stem cells can come from a donor as well), and subsequently infuse these potent stem cells back into the body in an effort to get an MS patients' immune system back onto the right track.

For its study, Northwestern University researchers examined 123 patients with relapse-remitting MS and 28 with secondary progressive MS who had been previously treated with HSCT. At a median of 30 months following treatment, researchers observed that 64% of those tested at the 48-month mark had demonstrated significant Expanded Disability Status Scale (EDSS) scores, as well as 50% of those tested at the 24-month mark. This marked the first true long-term and sustainable improvement in EDSS scores recorded in a clinical study involving MS.

HSCT was also associated with improved cognitive function and quality of life with these patients, as well as a reduction in the volume of brain lesions as demonstrated by the use of an MRI. Furthermore, the relapse-free survival rate after four years was 80%, and the progression-free survival rate (i.e., disease stabilization) was 87%.

There are two notable downsides worth mentioning. First, EDSS scores for those with secondary progressive MS didn't improve. The implication is that HSCT may only work in earlier stages of the disease, although that's merely an

educated guess on my part following this study, and would require additional research.

The other concern is HSCT comes with a number of possible complications. HSCT is an aggressive treatment usually reserved for aggressive forms of cancer, so the complications data could be a bit misleading, but its safety profile is nonetheless something worth keeping a close eye on.

### **Quality of life improvements are already here**

It would truly be a great thing if researchers could safely find a way to treat earlier stages of MS in a way that leads to long-term disease stabilization, or perhaps even a cure. Of course, as a realist, I also understand that more time and testing will be needed before this becomes a reality.

The good news is that a handful of drug developers have devoted substantial research and development dollars toward improving MS patients' quality of life. I'm happy to say we're already seeing improvements.

Although **Sanofi's** Aubagio and **Novartis'** Gilenya are helping, it's really **Biogen Idec's** ([NASDAQ:BIIB](#)) Tecfidera that's [making a world of difference](#).

Tecfidera is a pill MS patients take twice daily that, in clinical studies, lessened relapse rates by 49% and reduced new or expanding lesions as observed via an MRI by 71% to 99%, depending on the study. Best of all, Tecfidera was a [substantial improvement in safety](#) relative to Aubagio, which comes with a serious black-box warning concerning the potential for severe liver problems, and Gilenya, which, in rare cases, has the potential to cause cardiovascular problems.



SOURCE: BOGEN IDEC.

Strong efficacy and a safer product is the ultimate goal of drug developers, and a reason Tecfidera has been such a runaway success for MS patients.

There's room for more improvement, though. One compelling experimental therapy currently being examined is daclizumab for relapse-remitting MS. Developed by Biogen Idec and **AbbVie** ([NYSE:ABBV](#)), daclizumab delivered encouraging results in a late-stage study known as DECIDE, the results of which were announced over the summer. The results showed that daclizumab was superior to Biogen's injectable Avonex based on the study's primary

endpoint and led to a statistically significant 45% reduction in annualized relapse rate relative to Avonex.

What's really intriguing about daclizumab is that it's a once-monthly injection, making it a very convenient and quick treatment option for relapse-remitting MS patients. I'd opine that its chances of approval by the Food and Drug Administration are better than 50-50.

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SOURCE: ALBERTA INNOVATION AND ADVANCED EDUCATION VIA [FLICKR](#)

Another interesting solution could be to take an existing medication like Tecfidera and, as a play on words, put it on steroids. **Alkermes** ([NASDAQ:ALKS](#)) announced the initiation in July of a phase 1 study utilizing a novel monomethyl fumarate (MMF) molecule to treat MS. Tecfidera is a dimethyl fumarate compound that breaks down into MMF once in the body. The idea for Alkermes is to develop a non-inferior MS product in terms of efficacy that potentially has [an improved safety profile](#) relative to Tecfidera.

### **Moving forward one step at a time**

This is an encouraging week if you're a relapse-remitting MS patient, as it signals that new therapies may soon be on the way. It also reminds the medical community that more funding and research is needed to help fight this currently incurable disease. I'll continue to look toward Biogen Idec to lead the charge in helping to control MS symptoms and progression, but I remain hopeful that one day, these drug developers will have a genuine cure for MS.

### **10 stocks we like better than AbbVie**

When investing geniuses David and Tom Gardner have a stock tip, it can pay to listen. After all, the newsletter they have run for over a decade, *Motley Fool Stock Advisor*, has tripled the market.\*

David and Tom just revealed what they believe are the [ten best stocks](#) for investors to buy right now... and AbbVie wasn't one of them! That's right -- they think these 10 stocks are even better buys.

[See the 10 stocks](#)

\*Stock Advisor returns as of December 1, 2019

