

10 highlights from a key MS research conference



What you need to know from ACTRIMS

At the 2020 Americas Committee for the Treatment and Research of MS (ACTRIMS) three-day conference, experts presented findings on a variety of MS research topics, including gut bacteria, brain connections, light therapy, social networks and emerging therapies.

Here are 10 important takeaways from the conference.

1. Light therapy might help MS fatigue

Student Andre Vogel and colleagues at Massachusetts General Hospital did a pilot study testing the feasibility of using bright white light to treat MS fatigue, since it has been shown to be helpful in treating fatigue in other disorders. They divided a group of people with MS who had fatigue into two groups: Half received bright white-light boxes and half received red dim-light boxes as a control. Both groups used the boxes at home for one hour, two times per day for four weeks. Although this pilot study wasn't designed to detect effectiveness, participants in both groups reported benefits, suggesting a strong placebo effect. Researchers plan to use their results to design a larger, longer study of bright white-light therapy to treat MS fatigue. ([Poster P293](#))

2. Intestinal bacteria and other microorganisms can influence responses

A session of the conference was devoted to the intestinal bacteria and other microorganisms, collectively called the **gut microbiome**, and its influence on immune and brain cells. Helen Tremlett, PhD, of the University of British Columbia noted that the microbiome can influence response to therapies, and disease-modifying therapies can influence the makeup of one's microbiome. Other things that can alter the gut microbiome include antibiotics, smoking and diet. In a National Multiple Sclerosis Society-supported study of children with MS, [presented earlier at ACTRIMS](#), the microbiome influenced the future rate of MS relapses. ([Abstract](#))

3. A customized probiotic to treat MS could be coming

Howard Weiner, MD, of Brigham and Women's Hospital discussed recent attempts to apply what's been learned about the gut microbiome to develop therapies. A team of researchers gave a supplement of **Lactobacillus**, **Bifidobacterium**, and **Streptococcus** to nine people with MS and to a group of people without MS. The researchers found that over two months, the probiotic appeared to be anti-inflammatory. Weiner said that his team is currently working on a probiotic customized to treat MS that would include potentially beneficial bacteria. ([Abstract](#))

4. Genes could offer clues to MS risk

Many factors combine to make people susceptible to MS. Besides genes, there is **epigenetics**, which studies how and what genes switch on and off. Maja Jagodic, PhD, of the Karolinska Institute in Sweden described the field of epigenetics as the way DNA is packaged and used within cells. She suggested that the environment changes this packaging, and those changes can influence MS risk as well as disease course. There is also some evidence that some epigenetic changes might be reversible. ([Abstract](#))

5. Obesity might increase risk of MS

Not all genes are active at all times. **DNA methylation** is one of several epigenetic mechanisms that cells use to control gene expression. Patrizia Casaccia, MD, of the City University of New York found obesity was shown to cause negative changes to DNA methylation, causing increased numbers of immune cells that were linked to brain volume loss and worsening disease. Obesity in adolescence has been identified as a factor that can increase the risk of getting MS; this study adds evidence that it might also affect the disease course in adults. ([Abstract](#))

6. Brain connections may be damaged by MS

Synapses are junctions where one nerve cell communicates with another nerve cell. Dorothy Schafer, PhD, of the University of Massachusetts and her team are trying to explore ways to protect synapses from becoming damaged. One prime candidate for reducing this loss is an immune system protein known as **complement component 3**. The goal is to figure out how to turn off the activity of complement 3 without interfering with its role in fighting infections. ([Abstract](#))

7. Brain cells may help with myelin repair

The most abundant cells in the brain are called **astrocytes**, and they also appear in MS lesions, according to Veronique Miron, PhD, of the University of Edinburgh. Astrocytes may play an important role in myelin repair. ([Abstract](#))

8. Depression can make MS worse

Depression is common in MS, and it is more prevalent in people with relapsing MS than people with progressive forms. During her Society-funded fellowship at Cleveland Clinic, Jenny Feng, MD, and her team found that people with depression showed more worsening in functions, relapses, and disease activity on MRI scans compared with people who did not

have depression. The results suggest that depression is not just a reaction to the stress of MS but is tied to the disease process itself and that people should be screened and treated for depression to possibly slow worsening. ([Abstract](#))

9. Telehealth shows benefits

Since research has shown that people with stronger social networks do better coping with their MS, Victoria Leavitt, PhD, and colleagues at Columbia University developed and tested two online telehealth programs: one to reduce loneliness and the other to encourage physical activity and increase accountability. Both programs were beneficial. These results add to others suggesting telehealth programs increase access to programs that can improve quality of life for people with MS. ([Poster P068](#))

10. Personalized medicine for MS could be coming

Sergio Baranzini, PhD, of the University of California, San Francisco is working with others on a project called SPOKE (Scalable Precision Medicine Oriented Knowledge Engine) that compiles several points of data — such as gene studies, symptoms, medications and lab tests — from 1 million people to begin creating individual profiles of diseases. In the future, this approach might contribute to personalized medicine — finding the best treatment approach for one individual — and may also reveal clues about MS. ([Abstract](#))

Read [a full summary of studies](#) that were presented, including those on MS lesions, myelin repair and imaging methods.

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