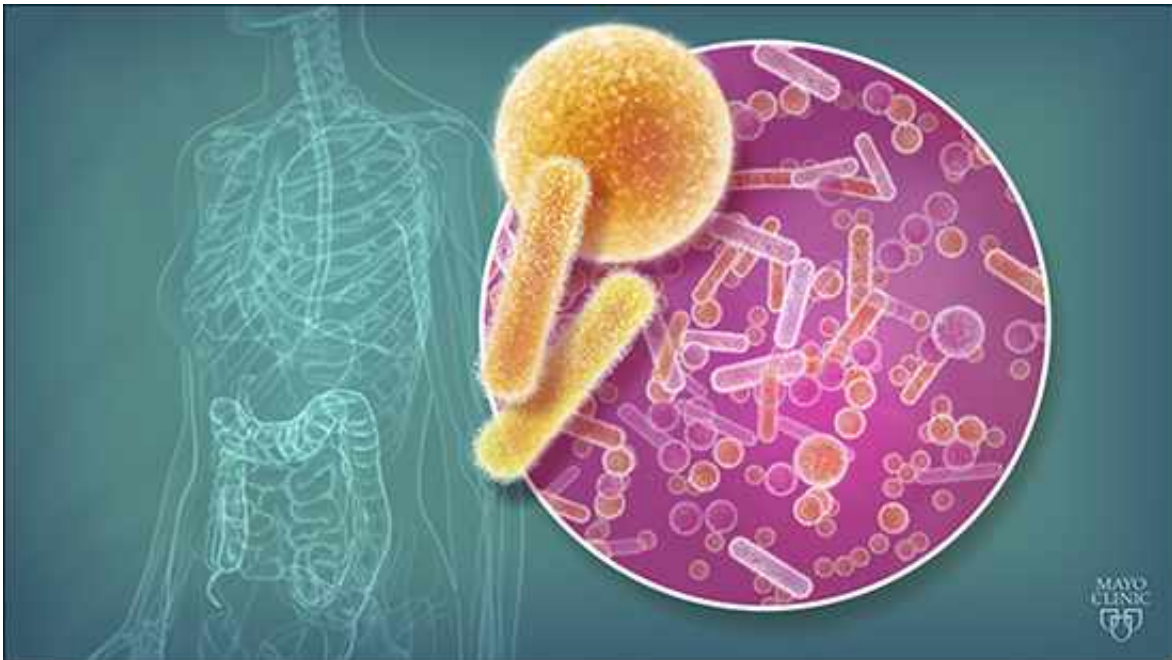


Human gut microbe may lead to treatment for multiple sclerosis

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Credit: Mayo Clinic

Mayo Clinic researchers, along with colleagues at the University of Iowa, report that a human gut microbe discovered at Mayo Clinic may help treat autoimmune diseases, such as multiple sclerosis. The findings appear in *Cell Reports*.

While probiotics have been used for millennia, there are little data showing how a bacterium can provide benefit against a disease outside

the gut. This research team tested gut microbial samples from patients on a mouse model of MS. Of three bacterial strains, they discovered that one microbe, *Prevotella histicola*, effectively suppressed [immune disease](#) in the preclinical model of MS.

"This is an early discovery but an avenue that bears further study," says Joseph Murray, M.D., a Mayo Clinic gastroenterologist and senior author of the article. "If we can use the microbes already in the human body to treat human disease beyond the gut itself, we may be onto a new era of medicine. We are talking about bugs as drugs." Dr. Murray coined the term "brug" to refer to this approach.

The researchers found that *P. histicola*, which is cultured from the human intestine, caused a decrease in two types of pro-inflammatory cells, while increasing families of cells that fight disease: T-cells, [dendritic cells](#) and a type of macrophage.

The team concludes that, in the future, this type of gut microbe may play a role in treating MS, which is caused by an attack by the immune system on the myelin sheath, a natural insulation that covers the nerves in the brain and spinal cord.

"Our work is a classic example of a bedside to bench and potentially back to bedside study. Recent MS microbiome studies have shown the lack of *Prevotella* genus in patients with the disease and an increase when patients were treated with disease-modifying drugs," says Ashutosh Mangalam, Ph.D., first author and assistant professor of pathology at University of Iowa Carver College of Medicine, and principal investigator of the study. "And it's not just for MS, because this may have a similar modulating effect on other nervous system and [autoimmune diseases](#)."

Provided by Mayo Clinic

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