MEDICAL BREAKTHROUGHS

RESEARCH SUMMARY

TOPIC: **MS: ROBOTIC EXOSKELETON RETRAINS THE BRAIN**

REPORT: **MB #4716**

BACKGROUND: Multiple sclerosis (MS) interrupts the flow of information within the brain, and between the brain and body. It is thought to be triggered in a genetically susceptible individual by a combination of one or more environmental factors. The immune system attacks tissue and cells within the central nervous system (CNS) and causes damage to nerve connections resulting in neurological symptoms. Although MS is thought by some scientists to be an autoimmune disease, others disagree because the specific target of the immune attack in MS has not yet been identified. Most people are diagnosed between the ages of 20 and 50, although an estimated 8-10,000 children under the age of 18 also live with MS, and people as old as 75 have developed it.

(Source:https://www.nationalmssociety.org/nationalmssociety/media/msnationalfiles/brochures/brochure-just-the-facts.pdf)

DIAGNOSING: A doctor will begin with a thorough medical history and examination. Then, the doctor may perform a blood test which can check for specific biomarkers associated with MS. A spinal tap, or lumbar puncture, in which a small sample of fluid is removed from the spinal canal may be performed and sent for laboratory analysis. This sample can show abnormalities in antibodies that are associated with MS. An MRI may be taken which can reveal areas of lesions on the brain and spinal cord. The doctor may also perform evoked potential tests which record the electrical signals produced by the nervous system in response to stimuli. This test may use visual stimuli or electrical stimuli, in which you watch a moving visual pattern, or short electrical impulses are applied to nerves in your legs or arms. Electrodes measure how quickly the information travels down your nerve pathways.
(Source: https://www.mayoclinic.org/diseases-conditions/multiple-sclerosis/diagnosis-treatment/drc-20350274)

THE HUMAN GUT AND MS: A study by University of Iowa scientists shows that a type of human gut bacteria is as effective as an approved drug in blocking multiple sclerosis-like symptoms in a mouse model of the disease. The study led by Ashutosh Mangalam, Ph.D., UI Assistant Professor of Pathology, provides more evidence that this bacterium, Prevotella histicola (P. histicola), may have potential as a treatment for multiple sclerosis (MS). The team compared the effect of P. histicola with the effect of a disease-modifying drug used to treat MS called Copaxone. They found that treatment with P. histicola was as effective in suppressing disease as treatment with Copaxone. However, combining P. histicola with Copaxone was not more effective than either individual treatment. Mangalam says, “P. histicola might be tested in

patients who do not respond to Copaxone, as well as in new patients as an alternate to Copaxone or other disease-modifying therapies." The findings suggest the disease-suppressing activity of the bacterium and the drug work through different mechanisms.
(Source: https://medicine.uiowa.edu/content/ui-study-tests-human-gut-bacteria-potential-therapy-multiple-sclerosis)

FOR MORE INFORMATION ON THIS REPORT, PLEASE CONTACT:

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If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at mthomas@ivanhoe.com