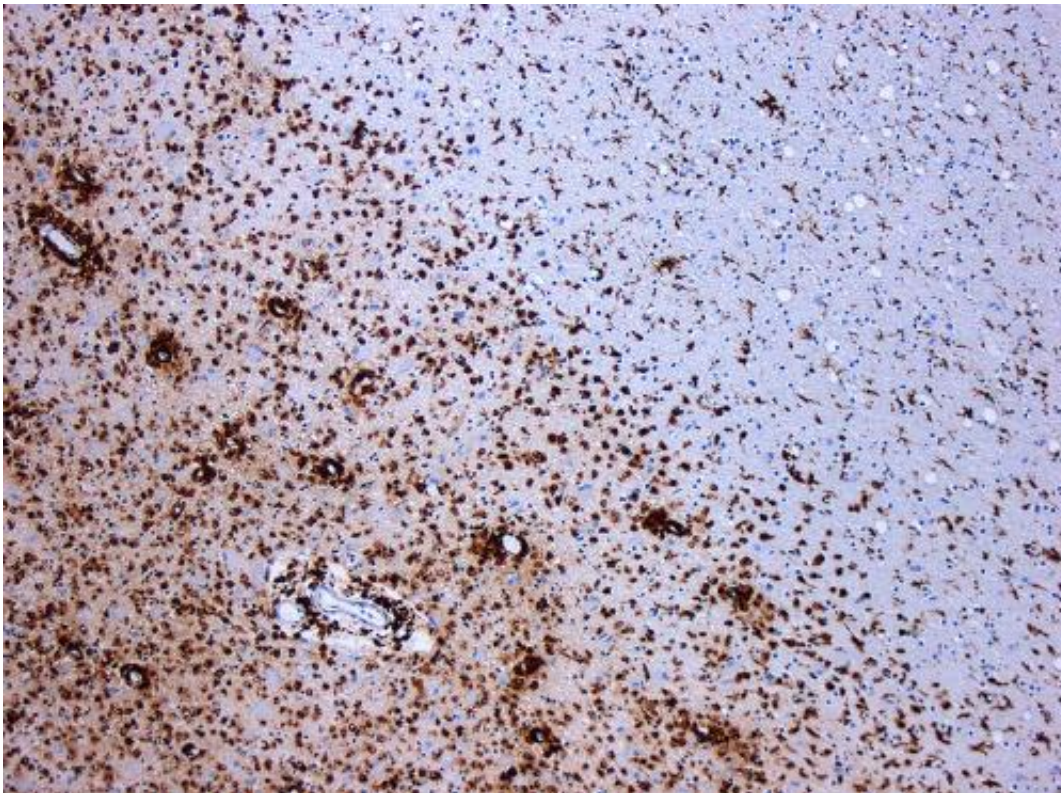


Serum microRNAs may serve as biomarkers for multiple sclerosis

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Demyelination by MS. The CD68 colored tissue shows several macrophages in the area of the lesion. Original scale 1:100. Credit: [CC BY-SA 3.0](https://creativecommons.org/licenses/by-sa/3.0/) Marvin 101/Wikipedia

MicroRNAs are small RNA molecules that influence basic cellular processes and have been proposed as biomarkers for the diagnosis, progression and treatment of multiple sclerosis. In a new study

conducted at the Ann Romney Center of Neurologic Diseases at Brigham and Women's Hospital, researchers have found that serum microRNAs are linked to MRI findings in the brain and spinal cord in patients with MS. These findings suggest that microRNAs could serve as promising biomarkers for monitoring the progression of MS and could help to identify distinct underlying disease processes, such as inflammation and tissue destruction.

The study was published on January 23, 2017 in *JAMA Neurology*.

In a large study, researchers examined the connection between serum microRNAs and MRI measures to evaluate the severity of MS, which included looking at lesions and atrophy, a measure of degeneration of the cells, in the central nervous system. Among the findings, the researchers identified that the expression of certain microRNAs were linked to MRI measures. The authors showed that these associations could be protective or harmful to patients (depending upon the function of the microRNA). They also found that different mechanisms were linked to different locations of MS changes, such as in the brain or [spinal cord](#). Additionally, the study suggested certain sets of microRNAs were linked to lesions, while others were linked to atrophy, which is known to cause more devastating effects to MS patients.

"These findings tell us the disease is heterogeneous. There's a complex set of mechanisms at play, and it may vary from patient to patient," says senior co-author Rohit Bakshi, MD, MA. "Another implication of this research is that it could eventually lead to us having a blood test to identify the subtype of MS in a patient, to help guide therapeutic decisions and prognosis," says Bakshi, also a neurologist at BWH.

"MicroRNAs could serve as [biomarkers](#) of the underlying MS disease processes, once validated and standardized for clinical settings. In addition, these markers have the potential to provide novel treatment

targets," says Roopali Gandhi, PhD, senior co-author and an assistant professor at BWH.

Provided by Brigham and Women's Hospital

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