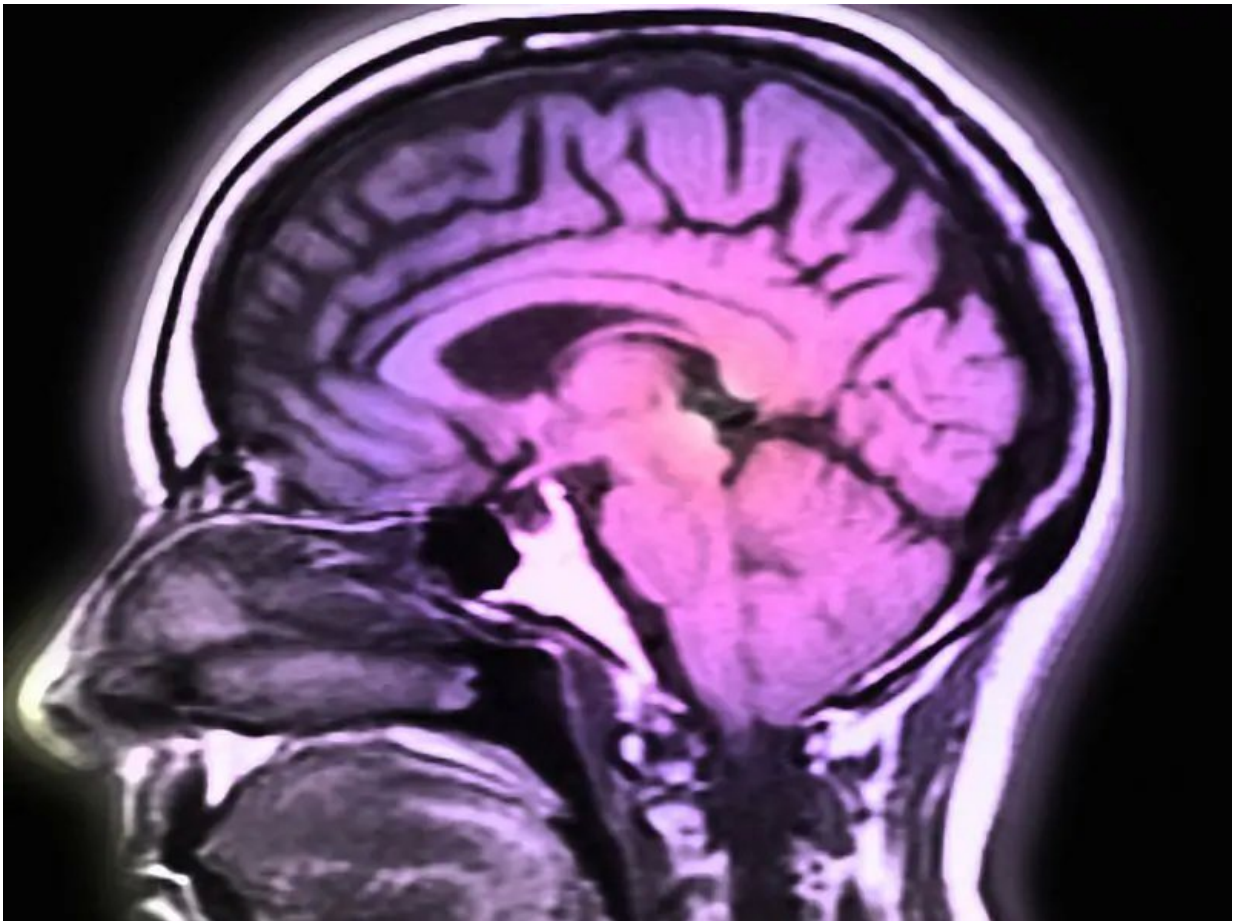


Brain iron on MRI linked to disability in multiple sclerosis

September 25 2018



(HealthDay)—Brain iron at quantitative magnetic resonance imaging

(MRI) is associated with disability in multiple sclerosis (MS), according to a study recently published in *Radiology*.

Robert Zivadinov, M.D., Ph.D., from the University at Buffalo in New York, and colleagues conducted a prospective study between March 2009 and November 2013 involving 600 participants with MS (452 with relapsing-remitting MS and 148 with secondary progressive MS) and 250 age- and sex-matched healthy controls. Magnetic [susceptibility](#) was measured using 3.0-T MRI.

The researchers found that participants with MS presented with lower thalamic susceptibility (-7.5 versus -1.1 ppb) and higher susceptibility of [basal ganglia](#) (62 versus 54.8 ppb), compared with control participants. There was a correlation for lower thalamic susceptibility with longer disease duration, higher degree of disability, and secondary progressive course ($\beta = -0.42, -0.64, \text{ and } -4.3$, respectively). There was a correlation for higher susceptibility of the globus pallidus with higher disability ($\beta = 2$). Lower thalamic susceptibility and higher susceptibility of the globus pallidus remained associated with clinical disability after correction for each individual structural volume in voxelwise analysis.

"In this large cohort of MS patients and healthy controls, we have reported, for the first time, [iron](#) increasing in the basal ganglia but decreasing in thalamic structures," Zivadinov said in a statement. "Iron depletion or increase in several structures of the brain is an independent predictor of disability related to MS."

Several authors disclosed financial ties to the pharmaceutical and medical device industries.

More information: [Abstract/Full Text](#)

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Citation: Brain iron on MRI linked to disability in multiple sclerosis (2018, September 25)
retrieved 27 April 2024 from
<https://medicalxpress.com/news/2018-09-brain-iron-mri-linked-disability.html>

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