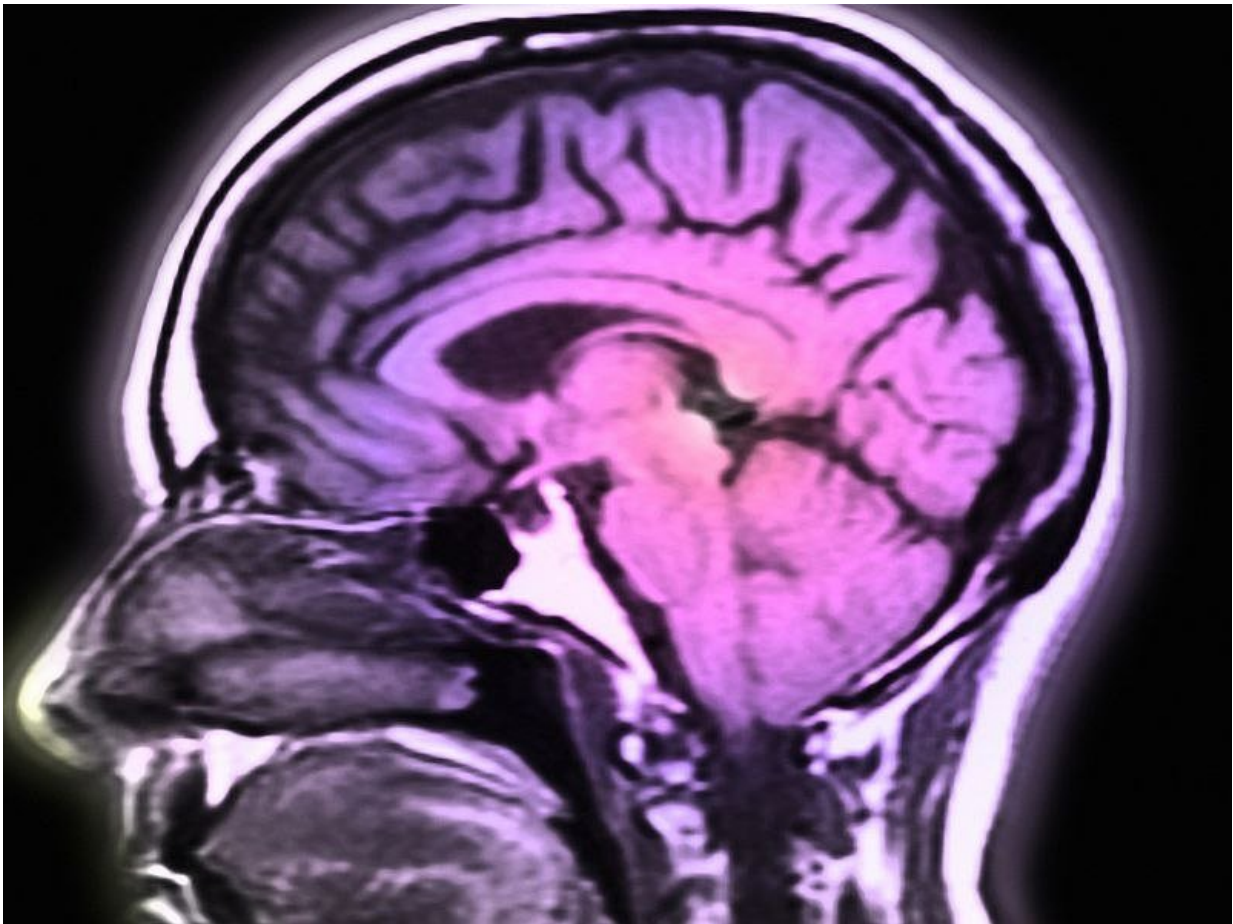


Cardiorespiratory fitness, white matter integrity tied to cognition

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(HealthDay)—Cardiorespiratory fitness (CRF) is associated with better

white matter (WM) fiber integrity in patients with mild cognitive impairment (MCI), according to a study published recently in the *Journal of Alzheimer's Disease*.

Kan Ding, M.D., from the University of Texas Southwestern Medical Center in Dallas, and colleagues examined the correlations of CRF measured by [maximal oxygen uptake](#) (VO₂max) with WM fiber integrity and neurocognitive performance. The correlation was assessed in 81 participants (aged 65 ± 7 years), including 26 cognitively normal adults and 55 amnesic MCI patients.

The researchers observed no difference in global WM fiber integrity and VO₂max for cognitively normal older adults and MCI patients. There was a positive correlation for VO₂max with diffusion tensor imaging (DTI) metrics of fractional anisotropy in about 54 percent of WM fiber tracts, and a negative [correlation](#) with mean and radial diffusivities in about 46 and about 56 percent, respectively, of the WM fiber tracts. After adjustment for age, sex, body mass index, WM lesion burden, and MCI status, the correlations of VO₂max with DTI metrics remained significant. In MCI patients, the DTI metrics obtained from the area that correlated with VO₂max correlated with executive function performance.

"Higher levels of CRF are associated with better WM fiber integrity, which in turn is correlated with better executive function performance in MCI patients," the authors write.

More information: [Abstract/Full Text \(subscription or payment may be required\)](#)

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