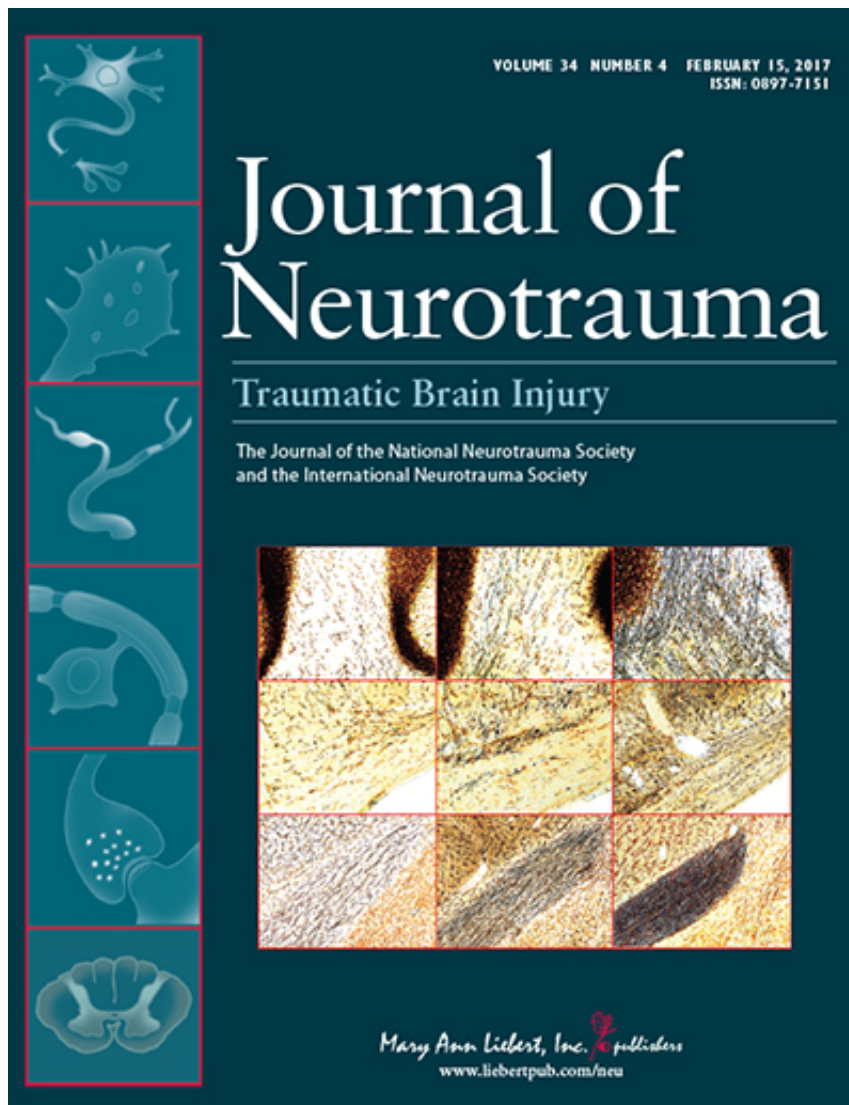


# Changes in brain connectivity can help diagnose and predict outcomes of mild TBI

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Credit: Mary Ann Liebert, Inc., publishers

A new study shows that patients with mild traumatic brain injury (mTBI), even without evidence of brain lesions, may exhibit changes in brain connectivity detectable at the time of the injury that can aid in diagnosis and predicting the effects on cognitive and behavioral performance at 6 months. Brain connectivity maps showed differences between patients with mTBI and healthy controls, including different patterns depending on the presence of brain lesions, as reported in an article in *Journal of Neurotrauma*.

The article entitled "Resting-State Functional Connectivity Alterations Associated with Six-Month Outcomes in Mild Traumatic Brain Injury" describes the prospective multicenter TRACK-TBI pilot study. Eva Palacios and coauthors from University of California, San Francisco, San Francisco General Hospital and Trauma Center, University of Texas, Austin, University of Pittsburgh Medical Center (PA), Virginia Commonwealth University (Richmond), Icahn School of Medicine at Mount Sinai (New York, NY), and Antwerp University Hospital (Edegem, Belgium) concluded that resting state [functional magnetic resonance](#) imaging (MRI) to assess [brain connectivity](#) and compare spatial maps of resting state brain networks can serve as a sensitive biomarker for early diagnosis of mTBI and later patient performance.

"While, as the authors acknowledge, they are not the first group to explore the utility of resting state functional MRI in probing the morbidity associated with mild [traumatic brain injury](#), they do elegantly capitalize on the TRACK-TBI study population to critically evaluate [functional connectivity](#) in a patient population that is well characterized and followed by traditional imaging approaches," says John T. Povlishock, PhD, Editor-in-Chief of *Journal of Neurotrauma* and Professor, Medical College of Virginia Campus of Virginia Commonwealth University, Richmond. "Their finding of altered patterns of functional connectivity even in that mild TBI patient population, revealing no CT/MRI abnormalities, is an extremely important

observation, as is the fact that these same changes in functional connectivity portend the development of a persistent post-concussive syndrome."

**More information:** Eva M. Palacios et al, Resting-State Functional Connectivity Alterations Associated with Six-Month Outcomes in Mild Traumatic Brain Injury, *Journal of Neurotrauma* (2017). [DOI: 10.1089/neu.2016.4752](https://doi.org/10.1089/neu.2016.4752)

Provided by Mary Ann Liebert, Inc

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