

## TRAUMATIC BRAIN INJURY

## Long-term tau elevation linked to chronic symptoms after brain injury

Traumatic brain injury (TBI) during military deployment leads to long-term increases in plasma tau concentrations, according to a new study. The findings could help identify individuals at risk of chronic neurological symptoms after TBI.

The study, led by Jessica Gill from the National Institute of Nursing Research, USA, built on the investigators' previous observations that TBI can have chronic effects on neurological function.

"Our understanding of these symptoms is limited, which limits clinical care," explains Gill. "We wanted to understand how to prevent long-term impacts of TBI."

Tau increases acutely after TBI, and high levels are linked to other chronic neurological disorders. However, the low blood concentration of this protein makes measurement difficult. To overcome this issue, Gill and her team used a recently developed single-molecule ELISA that is approximately 1,000-fold more sensitive than conventional tau assays.

The researchers analysed the blood levels of tau in 70 military personnel who had experienced TBI during deployment in the previous 18 months, and in 28 veterans who had not.

Increased plasma tau concentration was associated with a history of TBI, and people reporting three or more TBIs had higher tau levels than did those reporting fewer injuries. Moreover, the severity of long-term neurological symptoms correlated with tau concentration.

"Our findings suggest that tau elevations relate to chronic symptoms, and could facilitate the identification of individuals at risk and the provision of interventions to mitigate these risks," says Gill.

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