

Research finds brain cancer risk increase after moderate/severe, penetrating TBI

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Moderate/severe and penetrating traumatic brain injury (TBI) are associated with an increased risk for subsequent development of brain cancer, according to a [study](#) published online Feb. 15 in *JAMA Network Open*.

Ian J. Stewart, M.D., from the Uniformed Services University of Health Sciences in Bethesda, Maryland, and colleagues conducted a [retrospective cohort study](#) to examine whether a history of TBI exposure is associated with subsequent development of [brain cancer](#). Data were included for 1,919,740 [veterans](#) (80.25 percent male; 63.11 percent non-Hispanic white).

The researchers found there were 449,880 individuals with TBI (385,848; 46,859; and 17,173 with mild, moderate/severe, and penetrating TBI, respectively).

Overall, brain cancer occurred in 0.02 percent of individuals without TBI and in 0.02, 0.04, and ≤ 0.06 percent of individuals with mild, moderate/severe, and penetrating TBI, respectively.

Moderate/severe TBI and penetrating TBI were associated with subsequent development of brain cancer after adjustment (adjusted hazard ratios [95 percent confidence intervals], 1.90 [1.71 to 6.49] and 3.33 [1.16 to 3.12], respectively), but mild TBI was not (adjusted hazard ratio, 1.14; 95 percent confidence interval, 0.88 to 1.47).

"We found that moderate/severe TBI and penetrating TBI were associated with the subsequent development of brain cancer," the authors write. "While the absolute number of brain cancer diagnoses was small, these diagnoses are associated with profoundly poor outcomes."

More information: Ian J. Stewart et al, Traumatic Brain Injury and Subsequent Risk of Brain Cancer in US Veterans of the Iraq and Afghanistan Wars, *JAMA Network Open* (2024). [DOI: 10.1001/jamanetworkopen.2023.54588](#)

Elie Massaad et al, Long-Term Health Outcomes of Traumatic Brain Injury in Veterans, *JAMA Network Open* (2024). [DOI:](#)

[10.1001/jamanetworkopen.2023.54546](https://jamanetworkopen.2023.54546)

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