

# Posttraumatic seizures risk factors

Traumatic brain injury site, injury type, and injury degree are the main risk factors for post-traumatic epilepsy. Traumatic brain injury outcome can be affected by early post-traumatic epilepsy.<sup>1)</sup>

1. acute subdural, epidural, or intracerebral hematoma SDH, EDH or ICH.
2. open-depressed skull fracture with parenchymal injury
3. seizure within the first 24 hrs after injury
4. Glasgow Coma Scale score <10
5. penetrating brain injury
6. history of significant alcohol abuse
7. ± cortical (hemorrhagic) contusion on CT<sup>2)</sup>.

The latency to first seizure can be decades after the inciting trauma. Given this “silent period,” much work has focused on the identification of molecular and radiographic biomarkers for risk stratification and on the development of therapies to prevent epileptogenesis.

Research suggests that there are reciprocal relationships between mental health (MH) disorders and epilepsy risk.

Data suggest that PTE is associated with mental health (MH) outcomes 2years after TBI, findings whose significance may reflect reciprocal, biological, psychological, and/or experiential factors contributing to and resulting from both PTE and MH status post-TBI. Future work should consider temporal and reciprocal relationships between PTE and MH as well as if/how treatment of each condition influences biosusceptibility to the other condition<sup>3)</sup>.

<sup>1)</sup>

Liu Z, Chen Q, Chen Z, Wang J, Tian D, Wang L, Liu B, Zhang S. Clinical analysis on risk factors and prognosis of early post-traumatic epilepsy. *Arq Neuropsychiatr*. 2019 Jul 15;77(6):375-380. doi: 10.1590/0004-282x20190071. PubMed PMID: 31314838.

<sup>2)</sup>

Torbic H, Forni AA, Anger KE, Degrado JR, Greenwood BC. Use of antiepileptics for seizure prophylaxis after traumatic brain injury. *Am J Health Syst Pharm*. May 2013;70(9):759-766. PMID: 23592358.

<sup>3)</sup>

Juengst SB, Wagner AK, Ritter AC, Szaflarski JP, Walker WC, Zafonte RD, Brown AW, Hammond FM, Pugh MJ, Shea T, Krellman JW, Bushnik T, Arenth PM. Post-traumatic epilepsy associations with mental health outcomes in the first two years after moderate to severe TBI: A TBI Model Systems analysis. *Epilepsy Behav*. 2017 Jun 25;73:240-246. doi: 10.1016/j.yebeh.2017.06.001. [Epub ahead of print] PubMed PMID: 28658654.

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