

What is post TBI fatigue? ¹

What is the study about?

This article is about post-traumatic brain injury fatigue (PTBIF). The characteristics and correlates of PTBIF are described. The authors summarize the empirical and theoretical literature on PTBIF, including a variety of biologically based theories for a type of fatigue that is likely to be regulated by the central nervous system. The article discusses the challenge of reliably identifying fatigue since it is difficult to measure objectively and relies on patients' self-reports. Another problem is that there is no generally accepted definition of clinical fatigue or of PTBIF and this presents difficulties for research and standardizing treatments and measuring outcomes. The potential causes of PTBIF and existing treatments for PTBIF and the research supporting them are reviewed.

How was the study conducted?

This article is a qualitative review of the literature. The authors reference many clinical studies published about PTBIF and fatigue in general. Its intent is to present current knowledge about PTBIF.

What did the study find?

The authors identify a significant problem about the lack of consensus on the definition and measures of fatigue and specifically PTBIF. They point out that Aaronson and colleagues² offer a fairly comprehensive definition: "The awareness of a decreased capacity for physical and/or mental activity due to an imbalance in the availability, utilization, and/or restoration of resources needed to perform activity." Cantor and colleagues³ reported that 75% of the sample of individuals with TBI included in their study reported significant levels of fatigue as opposed to 40% of those in a non-injured comparison group. Even though there is a high incidence of fatigue after a TBI, PTBIF remains inadequately measured and treated. There are many measures of fatigue but there is no scale that is viewed as the "gold standard." The causes and precipitants of PTBIF are poorly understood. The theoretical explanations for central fatigue suggest that multiple mechanisms may contribute to PTBIF and that fatigue is likely to have many causes. Cognitive, psychosocial, neuroendocrine, genetic, and neuroanatomical factors are discussed in this article. Additionally, there are no empirically supported treatments for PTBIF, although neurostimulants, dopaminergic medications, antidepressant medications and atomoxetine, as well as caffeine and herbal medications are all used in managing fatigue, they are not supported by research evidence. Interventions shown to improve fatigue in other populations (e.g., cognitive behavioral treatment and aerobic exercise) should be considered in treating PTBIF. The contributing role of pain, depression, insomnia, sleep disorders, and other conditions in the creation and maintenance of PTBIF needs to be studied further. In summary, the authors suggest that further research is necessary to develop sound objective and subjective measures of PTBIF.

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¹ Cantor, J. B., Gordon, W., & Gumber, S. (2013). What is post TBI fatigue?. *NeuroRehabilitation*, 32(4), 875-883.

² Aaronson, L. S., Teel, C. S., Cassmeyer, V., Neuberger, G. B., Pallikkathayil, L., Pierce, J., ... & Wingate, A. (1999). Defining and measuring fatigue. *Journal of Nursing scholarship*, 31(1), 45-50.

³ Cantor, J. B., Ashman, T., Gordon, W., Ginsberg, A., Engmann, C., Egan, M., ... & Flanagan, S. (2008). Fatigue after traumatic brain injury and its impact on participation and quality of life. *The Journal of head trauma rehabilitation*, 23(1), 41-51.