

LIMBIC-CENC Clinical Care Monographs: **TBI and NeuroDegenerative Conditions**

Key Finding: LIMBIC-CENC researchers found associations between TBI and Dementia,¹ and Parkinson's disease (PD).² The association was strongest for Moderate to Severe TBI, but still present for Mild TBI diagnoses. Estimates of overall risk for dementia following TBI are 4%-6%, while the risk for PD following TBI remains <1%. Evidence also suggests that dementia following TBI on average may occur 1-2 years earlier than for those without TBI.

Perspective: The associations found between TBI diagnoses and neurodegenerative disorders are concerning, especially for the common mild TBI, such that the risk of TBI-related neurodegenerative disorders should be taken seriously. The ongoing prospective, longitudinal, multicenter CENC study will yield more definitive evidence on the nature and degree of the link.

Clinical Pearls:

- The clinical care of Servicemembers and Veterans with prior TBI should include recognition and treatment of known modifiable, lifestyle dementia risk factors (e.g., diet, exercise, sleep, tobacco, alcohol/illicit substances, socialization).
- Servicemembers and Veterans with prior TBI, even mild TBI, should be monitored for PD and/or dementia. Servicemembers and Veterans should be referred for specialty evaluation when signs are present, even if Servicemembers and Veterans are a little younger than would normally be expected.

References:

1. Barnes DE, Byers AL, Gardner RC, Seal KH, Boscardin WJ, Yaffe K: Association of Mild Traumatic Brain Injury with and Without Loss of Consciousness With Dementia in US Military Veterans. *JAMA Neurol.* 2018 Sep 1;75(9):1055-1061. doi: 10.1001/jamaneurol.2018.0815. PMID: 29801145
2. Gardner RC, Byers AL, Barnes DE, Li Y, Boscardin J, Yaffe K: Mild TBI and risk of Parkinson disease: A Chronic Effects of Neurotrauma Consortium Study. *Neurology.* 2018 May 15;90(20):e1771-e1779. doi: 10.1212/WNL.0000000000005522. Epub 2018 Apr 18. PMID: 29669907

n.b.: The 'Perspectives' and 'Clinical Pearls' expressed are based on interpretation of findings from the described Long-term Impact of Military-related Brain Injury Consortium/Chronic Effects of Neurotrauma Consortium (LIMBIC-CENC) research studies and their assimilation with the extant literature. These views are endorsed by LIMBIC-CENC leadership but may vary across individual researchers. All findings involve Service Members (SMs), Veterans (Vs) or both.

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