

## ***LIMBIC-CENC Clinical Care Monographs:*** **mTBI and Blood Biomarkers**

**Key Finding:** LIMBIC-CENC researchers found that blood levels of exosomal proteins, especially neuronal proteins (NFL, p-tau, tau) and neuroinflammatory proteins (IL-6 and IL-10), are associated with both mild TBI history and symptom levels in Servicemembers and Veterans.<sup>1</sup>

**Perspective:** In early discovery studies, exosomal proteins emerged as potential diagnostic or prognostic biomarkers of late effects of mild TBI, especially repetitive ( $\geq 3$ ) mild TBI.

**Clinical Pearl:** While preliminary, these findings lend support to the clinical pearl that “secondary TBI prevention strategies are increasingly important as the number of mild TBIs sustained increase.”

### **References:**

1. Kenney K, Qu BX, Lai C, Devoto C, Motamedi V, Walker WC, Levin HS, Nolen T, Wilde EA, DiazArrastia R, Gill J; CENC Multisite Observational Study Investigators. Higher exosomal phosphorylated tau and total tau among veterans with combat-related repetitive chronic mild traumatic brain injury. *Brain Inj* 2018;32(10):1276-1284. doi: 10.1080/02699052.2018.1483530. Epub 2018 Jun 11. PMID: 29889559.

*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.*

*LIMBIC-CENC research and its KT products were supported financially and is based upon work supported by the U.S. Army Medical Research and Materiel Command and from the U.S. Department of Veterans Affairs Chronic Effects of Neurotrauma Consortium under Award No. W81XWH-13-2-0095, the U.S. Department of Veterans Affairs Long-term Impact of Military-related Brain Injury Consortium/Chronic Effects of Neurotrauma Consortium under Award No. 1I01CX002097-01, the U.S. Department of Defense Chronic Effects of Neurotrauma Consortium (CENC) Award W81XWH-13-2-0095 and the U.S. Department of Defense Long-term Impact of Military-relevant Brain injury Consortium Award No. W81XWH-18-PH/TBIRP-LIMBIC. The U.S. Army Medical Research Acquisition Activity, 820 Chandler Street, Fort Detrick MD 21702-5014 is the awarding and administering acquisition office. Any opinions, findings, conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Government, or the U.S. Department of Veterans Affairs, and no official endorsement should be inferred.*