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Veterans Health Administration
Boston Healthcare System

News Release

VA Boston Healthcare System
1400 VFW Parkway
West Roxbury, MA 02132
Contact: Winfield S. Danielson III
617-435-7809
winfield.danielsoniii@va.gov

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Inflammation and psychological symptoms may be related to blast exposure in post-9/11 Veterans

BOSTON – Chronic inflammation and psychological symptoms associated with neurodegeneration may be related to blast exposure in post-9/11 Veterans, according to research published online in *Translational Psychiatry* Saturday, Feb. 26.

“Mild traumatic brain injury is among the most common injuries sustained by post-9/11 Veterans,” said lead author Dr. Meghan E. Pierce, a research scientist with the Translational Research Center for TBI and Stress Disorders – known as TRACTS – at the VA Boston Healthcare System, Harvard Medical School, and Boston University School of Medicine. “Understanding the long-term effects of mTBI is critical to providing the care Veterans need, for the brain injury itself, as well as for associated psychological symptoms and cognitive function.”

The study examined biomarkers associated with inflammation and neurodegeneration in 550 post-9/11 Veteran men and women. Primary findings were twofold: 1) inflammatory markers were consistently higher in participants exposed to close blasts and were strongly related to deployment-related psychological symptoms; and 2) glial fibrillary acidic protein, or GFAP, was consistently lower in participants exposed to blast and mTBI, and lower GFAP was associated with more severe psychological symptoms. While more research is needed, the findings suggest that chronic increased inflammation and psychological symptoms associated with decreased GFAP may be related to blast exposure.

Researchers from TRACTS, Harvard Medical School, Boston University School of Medicine, Ohio State University, Cohen Veterans Bioscience, and the Geriatric Research, Educational and Clinical Center at VA Boston Healthcare System contributed to the study.

The paper is available at <https://www.nature.com/articles/s41398-022-01853-w>.

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Dr. Meghan E. Pierce, a research scientist with the Translational Research Center for TBI and Stress Disorders at the VA Boston Healthcare System, Harvard Medical School, and Boston University School of Medicine, who is lead author of a paper published online in Translational Psychiatry Saturday, Feb. 26, 2022, which found that chronic inflammation and psychological symptoms associated with neurodegeneration may be related to blast exposure in post-9/11 Veterans. (Photo courtesy of Dr. Meghan E. Pierce)

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