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News Release

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FOR IMMEDIATE RELEASE

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Blast TBI Associated with Increased Myopia and Chronic Convergence Insufficiency

BOSTON – Veterans with history of blast-related mild traumatic brain injury face an increased risk for myopia and chronic convergence insufficiency, according to research published May 14 in the journal *Vision Research* by investigators at the VA Boston Healthcare System.

“Chronic visual symptom complaints are common among Veterans with a history of mild traumatic brain injury, but the potential impact of blast mTBI on refractive error had not been explored,” said co-author Dr. Francesca Fortenbaugh, a researcher with the VA Translational Research Center for TBI and Stress Disorders, the VA Geriatric Research, Education and Clinical Center, and the Harvard Medical School Department of Psychiatry. “This study investigated the impact of blast mTBIs on a range of visual function measures.”

The Translational Research Center for TBI and Stress Disorders, known as TRACTS, is a VA Rehabilitation Research and Development-funded national research center for TBI located at the VA Boston Healthcare System. Its mission is to improve understanding and develop better treatment options for returning Veterans with TBI and PTSD.

Results from the study showed an increased frequency in participants with a history of blast-related mTBI of convergence insufficiency, when the eyes have trouble working together while focusing on an object that is close, and myopia, commonly known as nearsightedness. Analysis also showed that these conditions are associated with the number of blast mTBIs during military service, but not the number of non-blast mTBIs. The paper can be found at <https://www.sciencedirect.com/science/article/abs/pii/S0042698921000808>.

The VA and National Institutes of Health-funded study cohort consisted of thirty-one post-9/11 Veterans for whom detailed clinical interviews regarding military and TBI history were available. Seventeen participants had a history of blast-related mTBI while 14 did not.

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“While additional work is needed to understand the underlying cause of the increased myopia, the additional finding of chronic convergence insufficiency years post-injury suggests that damage to subcortical structures that underly oculomotor functions may play a role,” concluded study co-author Dr. Jennifer Gustafson, Vision Rehabilitation Clinic director at VA Boston, and a researcher with TRACTS and the Harvard Medical School Department of Psychiatry.



“Blast mild traumatic brain injury is associated with increased myopia and chronic convergence insufficiency” study lead co-authors Dr. Francesca Fortenbaugh, left, a researcher with the VA Translational Research Center for TBI and Stress Disorders, known as TRACTS, the VA Geriatric Research, Education and Clinical Center, and the Harvard Medical School Department of Psychiatry, and Dr. Jennifer Gustafson, Vision Rehabilitation Clinic director at VA Boston, and a researcher with TRACTS and the Harvard Medical School Department of Psychiatry, at the TRACTS National Network Research Center on the Jamaica Plain campus of the VA Boston Healthcare System, May 19, 2021. (VA Boston HCS photo)

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