

LaNasa- ABSTRACT- 2024

Over the past two decades, over 400,000 military service members were diagnosed with a traumatic brain injury, with 80% classified as a mild traumatic brain injury (mTBI). mTBIs are often underreported in military populations and can lead to balance and vision deficits. Balance assessments are used post-mTBI to detect these abnormalities, yet a more challenging functional balance test is necessary to be able to detect more hidden deficits. This was tested by adding vision occlusion to a Y-balance Test (YBT) through stroboscopic glasses. The aims of this study are to determine the effects of mTBI history and visual occlusion on functional balance performance in Special Operations Forces combat Soldiers. Participants were from the United States Army Special Operations Command (USASOC) and completed three successful trials of a YBT under three different vision conditions (eyes open, low vision occlusion, and high vision occlusion). The YBT composite reach distance score determined the effects of vision occlusion, mTBI history, and the interaction of the two. There was no significant interaction between mTBI history and vision occlusion on the YBT scores, as well as no significant main effect of mTBI history on YBT scores either. There was an observed main effect of vision occlusion on YBT scores, with a post hoc test identifying significant differences across all three vision occlusion levels. Therefore, one can create a rehabilitative training program that visually loads the individual to mimic an environment where there may not be a constant flow of visual information.

