



US DEPARTMENT OF DEFENSE  
**BLAST INJURY RESEARCH PROGRAM**  
**COORDINATING OFFICE**

## **Neurocognitive Function and Psychological Health Dual-Task Assessment Using the CAREN: Implications for Service Members with Co-Morbid mTBI and PTSD**

Given the overlapping symptoms of mTBI and PTSD, the evaluation of dual-task skills is important because deficits can have a negative impact on decision making and the Service Member's ability to perform mission essential tasks. The NICoE's study seeks to determine whether the CAREN can be effectively utilized to assess dual-task performance in Service Members with comorbid mTBI and PTSD. Outcome measures will be obtained from a conventional dual-task performance assessment, the Walking and Remembering Test, and compared to those obtained through use of the CAREN Walking and Remembering Test and Dual-Task Rank Insignia applications. In the past, cognitive visual tasks had been ruled out when developing dual-task assessments because of the difficulty in implementing visual task components during gait; however use of the CAREN allows visual tasks to be incorporated on the screen as Service Members simultaneously walk on the system's treadmill. The CAREN Dual-Task Rank Insignia application may be more appropriate for evaluating this patient population and could provide clinicians with further insight into deficits identified. To date, 25 impaired and 12 control participants have completed the protocol. Preliminary analyses, of the results collected to date, indicate that there are trends emerging in the data but that a greater sample is needed to determine significance. Hence, the researchers are still recruiting healthy controls.