



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Neurocognitive Function and Psychological Health Analysis of Post-deployment Cognitive Performance and Symptom Recovery in US Marines

Computerized neurocognitive testing is proposed to be a useful screening tool for identifying post-deployment cognitive deficits; however, a study of the Automated Neurocognitive Assessment Metric (ANAM) demonstrated a need for additional methods for identifying Service Members requiring clinical follow-up post-concussion. A research team at the CRSR at USUHS assessed the clinical utility of ANAM testing post-injury/post-deployment, particularly as a measure of change in symptoms over time. In a longitudinal study published in Public Library of Science One, pre-deployment baseline ANAM tests were compared with two post-deployment ANAM tests in a group of Marines who experienced combat during deployment. Overall, there was a measurable deployment effect on cognitive performance, although this effect appears to resolve without lasting clinical sequelae in those without history of deployment-related concussion; however, the second simple reaction time component of the ANAM remained particularly impaired at an average of eight months post-deployment, and was the most consistent and sensitive indicator of the cognitive decrements. This study suggests that reliance solely upon computerized neurocognitive testing as a method for identifying Service Members requiring clinical follow-up post-concussion is not recommended, as cognitive functioning only slowly returned to baseline levels while clinical symptoms persisted. Instead, there is a need for a detailed clinical examination for Service Members with history of concussion and persistent clinical symptoms.