



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Blast Exposure Analysis

Development of Occupational Standards for Repeated Blast Exposures

This research funded by Joint Program Committee-5 (JPC-5)/Defense Health Program (DHP), evaluates neurocognitive and vestibular data gathered from Service Members previously exposed to improvised explosive devices (IEDs). Researchers in the Neurotrauma Department at the Naval Medical Research Center (NMRC), in collaboration with clinical and scientific partners (including the Walter Reed Army Institute of Research (WRAIR), Uniformed Services University of the Health Sciences (USUHS), National Institute for Neurological Disorders and Stroke (NINDS), National Institute of Nursing Research, the James J. Peters VA Medical Center, the University of Virginia (UVA) School of Medicine, and National Intrepid Center of Excellence (NICoE)) have also initiated a series of studies to develop occupational exposure standards for repeated exposure blast overpressure (BOP) events to predict human safe blast exposure limits in terms of blast magnitude, number, frequency, and between-blast latency. Assessment modalities include neurocognitive (neuropsychological), functional (neuroimaging, magnetoencephalography), and physiologic (known and novel biomarkers) changes. The aim of these studies is to develop predictive models/algorithms of all data for use in the development of an occupational standard for use by operational planners. Research efforts will also explore potential interventions to mitigate the acute, subacute, and/or chronic neurological adverse effects of traumatic brain injury (TBI) and evaluate the cumulative deleterious effects of blast exposures on the brain to define exposure limits and standards to mitigate this risk among Service Members.

