



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Neurophysiological Response to Blast

Characterization of Blast Exposure in a Large Sample of Military Personnel in Combat and Noncombat Environments

Researchers from the Naval Health Research Center (NHRC; San Diego, CA) are studying the effects of blast exposure on Service members involved in explosive ordnance disposal (EOD). Electrodermal activity (EDA), a proxy for sympathetic nervous system activity, was monitored during periods of exercise in a group of EOD operators ($n = 36$). Dose-dependent effects in EDA were observed, such that those who endorsed blast exposure showed blunted EDA responses. Similar differences in EDA patterns were observed between those who reported combat exposure and those who did not. These associations were robust to numerous confounding influences. These findings suggest that blast and combat exposure disrupt sympathetic nervous system function under conditions of acute exercise stress. This may have downstream effects on cardiovascular and behavioral health.

This effort was supported by MOMRP/JPC-5.

