



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

TBI Biomarkers

Lysophosphatidic Acids Levels as Biomarkers of Blast-induced Traumatic Brain Injury

Levels of lysophosphatidic acids (LPAs), fatty acid derivatives reported to promote inflammation, have been shown to increase in the cerebrospinal fluid (CSF) of mice and humans after brain injury. To determine the potential of LPA levels as biomarkers for blast-induced traumatic brain injury (bTBI), investigators at the Walter Reed Army Institute of Research (WRAIR; Silver Spring, MD) in collaboration with University of Kentucky (Lexington, KY) are characterizing changes in LPA species in the CSF and plasma in animals after exposure to single and repeated blasts using an advanced blast simulator.

Preliminary studies have shown that several LPA species increase acutely in the CSF and plasma after single and repeated blasts. LPA levels correlated positively with the number of blasts. These findings demonstrate the potential of LPA levels to serve as acute biomarkers of blast injury in affected Service members.

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