



## Naval Medical Research Center

503 Robert Grant Ave.  
Silver Spring, Md.

October 16, 2012

**Contact:**

**NMRC Public Affairs**

**Office: 301-319-9378**

[Doris.Ryan@med.navy.mil](mailto:Doris.Ryan@med.navy.mil)

SILVER SPRING, Md. – Researchers from the Naval Medical Research Center, the Mount Sinai School of Medicine, and a Veterans Affairs Medical Center published a paper in the October 10, 2012, issue of the Journal of Neurotrauma focused on possible warfighter post-traumatic stress disorder-related traits induced by multiple blast exposures.

Researchers from the James J. Peters Veterans Affairs Medical Center in the Bronx, N.Y., working with collaborators from NMRC in Silver Spring, Md., showed, in a laboratory model, that repeated blast exposure induced a variety of PTSD-related traits many months after the blast exposure. These traits include anxiety, increased startle responses and heightened fear responses.

The lead author of the paper, Dr. Gregory Elder, a neurologist at the VA hospital said, “The study is the first to suggest that blast exposure may change the brain’s reactions to stress in ways that increase the likelihood of developing PTSD.”

The paper points out that mild traumatic brain injury (TBI) from blast exposure has been a major cause of injury in Iraq and Afghanistan. A feature of TBI cases has been the prominent association with post-traumatic stress disorder. Because of the over-lapping symptoms, distinction between the two has been difficult.

“The research results showed heightened fear reactions were associated with an increase in a specific protein, stathmin 1, known to affect fear responses in the amygdale, an area of the brain associated with regulating fear responses and thought to be involved in the development of PTSD,” said Dr. Stephen Ahlers, lead on the Navy collaborative team with NMRC’s Department of Neurotrauma. Ahlers presented the results at the Military Health System Research Symposium in Ft. Lauderdale, Fla., August 15, 2012.



The NMRC Neurotrauma Department conducts research on a variety of topics pertinent to the protection, care and resuscitation of combat casualties, primarily those occurring in austere circumstances with anticipated delay to definitive care. The department maintains three major programs: The Blast Injury Program, the Operational Medicine Program, and the Polytrauma Program.

**Article: Blast Exposure Induces Post-Traumatic Stress Disorder-Related Traits in a Rat Model of Mild Traumatic Brain Injury.** Gregory A. Elder, Nathan P. Dorr, Rita De. Gasperi, Miguel A. Gama Sosa, Michale C. Shaughness, Eric Maudlin-Jeronimo, Aaron A. Hall, Richard M. McCarron, and Stephen T. Ahlers. *Journal of Neurotrauma*.