



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Neurocognitive and Psychological Health Treatment Strategies

Hyperbaric Oxygen Therapy (HBOT) in the Treatment of Chronic Mild-Moderate Blast-Induced Traumatic Brain Injury (TBI), Post-Concussive Syndrome (PCS), and Posttraumatic Stress Disorder (PTSD)

TBI and PCS severely and disproportionately affect Service Members who have served in Iraq and Afghanistan, with approximately 546,000 having TBI, PCS, and PTSD, yet their treatment options are limited. FY10 Congressional Special Interest funding to Louisiana State University (LSU) and managed by the Congressionally Directed Medical Research Program (CDMRP) supports this study to determine if an eight-week course of forty low-pressure hyperbaric oxygen treatments can significantly improve symptoms and cognitive function in military Veterans and civilians with mild TBI (mTBI) and PCS. The proposed design is a randomized controlled (non-treatment, non-sham) single-arm crossover single-blind study. The scope of the project is to recruit, enroll, test, treat, re-test, and follow-up on 50 subjects at LSU. In FY16 the project has continued to enroll subjects and look for ways to improve recruitment. To date, 27 subjects have fully completed the study; three subjects completed the hyperbaric treatment and some post-treatment testing; six subjects have completed the hyperbaric treatment and are in the process of completing their post-treatment testing; two subjects are in the eight-week control period; one subject has been consented and will be randomized; five subjects have signed the screening consent and are moving through the screening process. MTBI causes wounds in the brain, and HBOT has been shown to treat wounds and has duplicated human success in chronic TBI in animal models; therefore, HBOT has the potential to help Veterans with chronic mTBI/PCS. Due to the assessor-blinded study design there are no preliminary results to report at this time; however, this study offers an effective and economical treatment for PCS and TBI, without the dangerous and negative side-effects of medication.

