USAMMDA Mission

Develop and deliver quality medical solutions to protect, treat, and sustain the health of Our Service Members.

USAMMDA Vision

USAMMDA is the premier developer of world class military medical solutions.

HBO_2 multi-person chamber

For more information about USAMMDA

Visit our website:

www.usammda.army.mil/hbo2.html

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HBO_2 Program Partners

Developed by:
HBO_2 Program Management Office

U.S. Army Medical Research and Materiel Command

Protect the Warrior, Sustain the Force

Last updated: January 8, 2013

USAMMDA

U.S. Army Medical Materiel Development Activity

Developing Quality Medical Products for U.S. Forces

Hyperbaric Oxygen (HBO_2) in mild Traumatic Brain Injury

Hyperbaric Oxygen Research for Persistent Symptoms associated with mild Traumatic Brain Injury (Post Concussion Syndrome)

U.S. Army Medical Materiel Development Activity

The U. S. Army Medical Materiel Development Activity is leading an effort to determine if hyperbaric oxygen is of benefit in the treatment of chronic symptoms of mild traumatic brain injury (mTBI) or post-concussion syndrome (PCS).

What is a concussion/mTBI?

A concussion is a brain injury from a hit, blow, or blast wave to the head that briefly causes loss of consciousness or alterations of consciousness, such as “seeing stars” or “confusion”.

Immediately or soon after the concussion, the following symptoms may be experienced: disorientation, headaches, dizziness, balance difficulties, ringing in the ears, blurred vision, nausea, vomiting, irritability, temporary gaps in your memory, sleep problems, or attention and concentration problems.

Recovery Process

Recovery is different for each person and depends on the nature of the injury.

Most people fully recover in days to three months. The most important treatment is cognitive rest to allow time for the brain to heal.

Why some people continue to have persistent post-concussion symptoms is unknown. The effects of these symptoms adversely impacts military operational readiness and effectiveness.

Treatment for Persistent PCS

Currently there is insufficient evidence to recommend hyperbaric oxygen to treat PCS; however, the DoD is conducting clinical trials to generate scientific evidence to guide therapy.

Research on Hyperbaric Oxygen and Traumatic Brain Injury

HBO_2 is defined as the administration of oxygen in a chamber at greater than atmospheric pressure. Oxygen becomes increasingly dissolved in the blood, which results in higher than normal amounts of oxygen delivered to body tissues. There is anecdotal evidence to suggest that HBO_2 may be beneficial in the treatment of acute and chronic symptoms associated with TBI. Stronger evidence including sham-controlled, randomized trials must be obtained prior to determining if hyperbaric oxygen should be used as a treatment for traumatic brain injury.

Completed DoD Studies

- U.S. Air Force, San Antonio Military Medical Center (Principal Investigator [PI]: Dr. George Wolf). Double blind: 1.3 atmosphere absolute (ATA) air (sham) vs. 2.4 ATA O2 x 30 sessions. Results: No benefit observed in the treatment group.

Current DoD Studies

- Defense Advanced Research Projects Agency, McGuire Veterans Affairs Medical Center, Richmond, VA; Naval Operational Medical Institute, Pensacola, FL (PI: Dr. David Cifu and CAPT Brett Hart). Double blind, randomized to three cohorts: 1.0 (air) vs. 1.5 vs. 2.0 ATA O2 x 40 sessions. Study completion expected May 2013.
- USAMMDA - multi-cohort pilot study (PI: COL Scott Miller, USAMMDA; CAPT Meg Ryan, Camp Pendleton; LTC Rob Price, Ft. Carson; LCDR Virginia Skiba, Camp Lejeune; and Dr. Scott Mooney, Ft. Gordon). Double blind: 1.2 ATA air (sham) vs. 1.5 ATA O2 vs. no chamber in data anaysis.
- USAMMDA (PI: Dr. Lin Weaver, LDS Hospital; three sites); multi-center, with Data Safety Monitoring Board. Projected 75 enrollment. Double blind, randomized to 1.3 ATA air (sham) vs. 1.5 ATA O2 x 40 sessions. Completion expected summer 2014.