

**Recap of information as it relates to the need to provide Hyperbaric Oxygen Therapy (HBOT) treatment to suicidal, concussed and brain-injured veterans and athletes**

- June 2016. A soon-to-be-released, peer-reviewed journal article [Neurology] states: ***"There is sufficient evidence for the safety and preliminary efficacy data from clinical studies to support the use of HBOT in mild-to-moderate traumatic brain injury/persistent post-concussion syndrome (mTBI/PPCS). The reported positive outcomes and the durability of those outcomes has been demonstrated at 6 months post HBOT treatment . Given the current policy by Tricare and the VA to allow physicians to prescribe drugs or therapies in an off-label manner for mTBI/PPCS management and reimburse for the treatment, it is past time that HBOT be given the same opportunity. This is now an issue of policy modification and reimbursement, not an issue of scientific proof or preliminary clinical efficacy."***
- May 2016. Preliminary reporting from the VA shows that the reported 22 service members a day suicide rate, 8,000 a year, is now closer to 29 per day. Another 45 a day try and fail, over 16,000 more a year. Special Operations warriors commit suicide at twice that rate. Female veterans are 12 times more likely to commit suicide than their civilian peers.
- April, 2016. The Department of Veterans Affairs plans to contact nearly 25,000 veterans nationwide to say they're entitled to new exams for traumatic brain injury because their TBI exams were not done by the proper specialists from 2010-2014.
- March 24, 2016. The New York Times Finds Massive Flaws in NFL's Concussion Studies downplaying the effects and dangers of concussions in professional football.
- March 14, 2016. Jeff Miller, NFL Executive Vice President of Health and Safety Policy for the first time admitted a link between football and Chronic Traumatic Encephalopathy (CTE): "the answer to that is certainly yes." The NFL issued a statement the following day saying "The comments made by Jeff Miller yesterday accurately reflect the view of the NFL." Owners tried to walk that admission backward a week later, claiming the science was not solid.
- March 2016. Dr Ann McKee reports that 90 of 94 brains of former football players autopsied showed signs of CTE.
- February 24, 2016. The SCIENTIST reports that "Each and every TBI drug that has reached late-stage clinical trials has failed [41 of 41]. This 100 percent failure rate represents a huge human and economic cost. " The former head of Army Research states that "it is time to think differently."
- Feb 8, 2016. Canadian researchers report that "Adults with a diagnosis of concussion had a three-fold increase in the long-term risk of suicide, particularly after concussions on weekends. Greater attention to the long-term care of patients after a concussion in the community might save lives because deaths from suicide can be prevented."
- Jan 5, 2016. DOD's Suicide Prevention Office calls the increase in suicides among the Army's active and reserve components alarming.

- As of Dec 2015, the TreatNOW Coalition has treated and helped heal over 1,900 service members, police, fire, first-responders, athletes and civilians with brain injury: TBI/PTSD/Concussion/PCS
- Dec 2015. TreatNOW Coalition reports that over one dozen former NFL football players and over three dozen Special Operations warriors have experienced significant medical improvement after treatment with HBOT for their brain injuries.
- Dec 2015. A peer-reviewed meta-study of the use of HBOT-for-TBI concludes: "Compelling evidence suggests the advantage of hyperbaric oxygen therapy (HBOT) in traumatic brain injury."
- Nov, 2015. USAF reevaluation of data in original DOD/VA/Army HBOT-for-TBI study finds that ".... Hyperbaric oxygen therapy for mild traumatic brain injury and PTSD should be considered a legitimate adjunct therapy...."
- An neurosurgeon advising the NFL's head-neck-and-spine committee wrote in a textbook: "Substantial animal and human research now suggests that...natural dietary supplements, vitamins and minerals, and the use of hyperbaric oxygen may be a better first-line choice for the treatment of [concussion] which has generally been underreported by both athletes and the military."
- Jan 2015. Johns Hopkins reports that the brains of Iraq and Afghanistan combat veterans who survived blasts from improvised explosive devices and died later of other causes show a honeycomb of broken and swollen nerve fibers in critical brain regions, including those that control executive function. The pattern is different from brain damage caused by car crashes, drug overdoses or collision sports, and may be the never-before-reported signature of 'shell shock' suffered by World War I soldiers.
- A June 2014 report by DOD says that 7 in 10 of America's youth cannot qualify for entry into the military. "The quality of people willing to serve has been declining rapidly," says the head of Recruitment Command, leading to a relaxation in recruitment standards.
- June 2014. The journal PLOS ONE reports on the effects of HBOT: "Repetitive Long-Term Hyperbaric Oxygen Treatment (HBOT) Administered after Experimental Traumatic Brain Injury in Rats Induces Significant Remyelination and a Recovery of Sensorimotor Function", further validating the reported positive biological effects of HBOT for TBI. Myelination, the insulation around the nerve fibers, does not fully complete in young men until around the age of 25 and is an added variable in the TBI epidemic of our young service members.
- 2014. "The patient-safety system is broken." Dr. Mary Lopez, a former staff officer for health policy and services under the Army surgeon general.
- 2014. Echoing recent concerns about the effectiveness of military mental health efforts, an American Legion survey of veterans found that nearly half thought clinical help they received for post-traumatic stress and traumatic brain injury had little or no effect on their conditions. Veterans also expressed frustration with physicians' reliance on medication to address their symptoms. More than half of those on prescriptions said they take five or more medications; 30 percent said they use 10 or more.
- June 2014. IOM Report: "Treatment for Posttraumatic Stress Disorder in Military and Veteran Populations: Final Assessment." The Defense and Veterans Affairs departments spent \$9.3 billion to treat post-traumatic stress disorder from

2010 through 2012, but neither knows whether this staggering sum resulted in effective or adequate care.

- Current DOD/VA/Army response to TBI treatments do not include even informing the brain injured that a safe treatment for TBI exists -- HBOT. There is effectively no "informed consent" to brain-injured service members from military medicine about even the possibility that HBOT might alleviate the symptoms and underlying physiological brain injuries.
- June 2014. Military Risk Factors for Alzheimer's Dementia & Neurodegenerative Disease, Alzheimer's Dementia. Increasing evidence suggests that a single traumatic brain injury can produce long-term gray and white matter atrophy, precipitate or accelerate age-related neurodegeneration, and increase the risk of developing Alzheimer's disease, Parkinson's disease, and motor neuron disease. In addition, repetitive mTBIs can provoke the development of a tauopathy, chronic traumatic encephalopathy... Four of the five veterans with early-stage chronic traumatic encephalopathy were also diagnosed with posttraumatic stress disorder. Advanced chronic traumatic encephalopathy has been found in veterans who experienced repetitive Neurotrauma while in service and in others who were accomplished athletes. Clinically, chronic traumatic encephalopathy is associated with behavioral changes, executive dysfunction, memory loss, and cognitive impairments that begin insidiously and progress slowly over decades." Findings from "Military-related traumatic brain injury and neurodegeneration." AC McKee, ME Robinson, in In the same Journal, the Editors write: "Today, there is now growing evidence that a single traumatic brain injury (TBI) sustained early in life might trigger a cascade of neurodegenerative processes. The outcomes may manifest as dementia, Alzheimer's dementia (AD), Lewy Body dementia (LBD), or other motor neuron diseases many years or decades later. The scientific and medical community has known the effects of trauma on boxers since the 1920s. Now, increasing number of studies are showing that even mild repetitive trauma may lead to onset of symptoms in some athletes as early as in their second decade of life. The renewed interest in the idea that mild repetitive trauma to the head can trigger not only chronic traumatic encephalopathy (CTE) but also other neurodegenerative diseases is indeed timely. This important recognition is reinforced by the increased risk and prevalence of TBI and posttraumatic stress disorder (PTSD) among young military personnel associated with combat experiences."
- April 2014. ADM McRaven, head of SOCOM, reports in April 2014 that Special Operations warriors commit suicide at twice the rate of the regular force. An emerging body of research suggests that Special Operations forces have experienced, often in silence, significant traumatic brain injury and post-traumatic stress disorder [there are eerie parallels between special operator and NFL ballplayer "Can't happen to me" responses to head injury.]  
2014. Summary of positive findings in Army Studies in use of HBOT for TBI: Army medicine has run trials investigating the use of Hyperbaric Oxygen to treat and help heal Traumatic Brain Injury. They have shown that HBOT is both safe and effective: **"Randomization to the chamber . . . . offered statistical and in some measures clinically significant improvement over local routine TBI care."** Also: **".... total scores for [both] groups revealed significant improvement over the course of the study for both the sham-control group .... and the**

**HBO2 group....." Expert outside consultants to DOD declared that "[HBOT] is a healing environment."**

- 2014. The journal *Neurology* reports that TBI in older veterans was associated with a 60% increase in the risk of developing dementia over 9 years after accounting for competing risks and potential confounders. Results suggest that TBI in older veterans may predispose toward development of symptomatic dementia and raise concern about the potential long-term consequences of TBI in younger veterans and civilians.
- The Oklahoma Veterans Traumatic Brain Injury Treatment and Recovery Act of 2014 was signed into law, establishing that "Any Oklahoma veteran who has been diagnosed with a traumatic brain injury (TBI) and prescribed hyperbaric oxygen treatment (HBOT) by a medical professional authorized under Section 2 of this act may receive HBOT at any facility in the state that has a hyperbaric chamber."
- March 29, 2013. The government has already spent \$134 billion on medical care and disability benefits for veterans returning from Iraq and Afghanistan. . . . [30 to 40 years out] these benefits would cost an additional \$836 billion. Of the 1.56 million troops that have been discharged, more than half have received treatment at Veterans Affairs facilities and filed claims for lifetime disability payments.
- March 2013. PTSD clinical practice guidelines, which also apply to the Defense Department, caution providers against using benzodiazepines to manage PTSD due to "the lack of efficacy data and growing evidence for the potential risk of harm...." The Army determined, like VA this month, that treatment of PTSD with benzodiazepines could intensify rather than reduce combat stress symptoms and lead to addiction. "mounting evidence suggests that the long-term harms imposed by benzodiazepine use outweigh any short-term symptomatic benefits in patients with PTSD."
- 2013. ***Military Caregivers***, a report from the RAND Corporation sponsored by the Elizabeth Dole Foundation, found that between 275,000 and a million or more "caregivers in general suffer from physical strain and overall worse health and tend to put their own concerns behind those of the individuals for whom they are caring." Military caregivers suffer disproportionately from mental health problems and emotional distress. Despite the well-known problems, "no national strategy for supporting military caregivers exists."
- July 26, 2012. Secretaries of Defense and the VA in testimony to Congress lament that the cultures in the government's two largest departments "resist change. They resist coordination. They resist trying to work together." Both men vow to "kick ass" to improve service to veterans.
- July 2012. *Journal of Neurotrauma* reports "**...that a blast related mTBI exposure can in the absence of any psychological stressor induce PTSD-related traits that are chronic and persistent. These studies have implications for understanding the relationship of PTSD to mTBI in the population of veterans returning from the wars in Iraq and Afghanistan.**"
- July 2012. *Neurological Review* reports that multiple epidemiologic studies show that experiencing a TBI in early or midlife is associated with an increased risk of dementia in late life. The best data indicate that moderate and severe TBIs increase risk of dementia between 2- and 4-fold.

- June 2012. SECDEF orders sweeping review of how DOD diagnoses PTSD amid allegations that the Army might have reversed PTSD diagnoses based on the expense of providing care and benefits to members of the military
- June 2012. Editor of major Journal comments: "Every day we are... gathering more data validating its efficacy.... I feel , as do many of my colleagues, that there is sufficient clinical and research evidence to justify the use of [HBOT] as a standard-of-care treatment for [TBI] that should be reimbursed by CMS and Tricare.... I have no doubt that, over the next several years, [HBOT] will be proven beyond a reasonable doubt to be one of the most effective treatments for [TBI].... There is a preponderance of evidence now to justify the use and funding for the treatment...."
- June 2012. Army cancels a 3-year, \$18M TBI software development program that turns out not to have anything to do with TBI, though the money has all been spent.
- May 2012. DOD reports that mental illness ranks as the leading cause of hospitalization for active-duty troops.
- May 2012. An active-duty Army doctor noted that the "stunning growth in numbers and rates of mental health hospitalizations . . . is undeniable evidence of an unprecedented and arguably unmanageable epidemic that is now threatening the viability of the force...." yet another epidemic to accompany those already identified by the DOD: suicide; TBI/PTSD; sexual assault; drug overdosing and death-through-overprescribed medication; homelessness, joblessness and incarceration; bad-paper-discharges; and violence against families.
- January 2012. Commander of the 1st Armored Division writes: "I have now come to the conclusion that suicide is an absolutely selfish act....I am personally fed up with soldiers who are choosing to take their own lives so that others can clean up their mess. Be an adult, act like an adult, and deal with your real-life problems like the rest of us."
- August 2011. The VA spent \$846 million on Seroquel since 2001 and \$717 million on Risperidone, another atypical antipsychotic, during the same period. A paper published by VA researchers said Risperidone was no more effective than a placebo in treating PTSD. The Army nevertheless reordered \$250M of Risperidone, despite its potential to contribute to suicidal thoughts.
- April 2011, Army Secretary John McHugh made it official: Soldiers could get Purple Hearts for traumatic brain injuries. Hundreds of thousands of service members with "invisible wounds" were finally recognized as having suffered physical damage to their brains, in addition to the psychological consequences of their physically wounded brain
- 2011. RAND issues Report on ***Preventing Suicide in the U.S. Military***. RAND estimates the one-year cost for service members who had accessed the healthcare system and received a diagnosis of TBI to range from \$27,259 to \$32,759 (2007 dollars). For moderate to severe cases, the costs ranged from \$268,902 to \$408,519 (2007 dollars). Applying the RAND costs for mild TBI to the current DOD estimated number of 202,481 yields a projected one-year cost of \$5.5B to \$6.6B June 2010. An internal report from the Defense Department's Pharmacoeconomic Center at Fort Sam Houston in San Antonio showed that 213,972, or 20 percent of the 1.1 million active-duty troops surveyed, were taking

some form of psychotropic drug: antidepressants, antipsychotics, sedative hypnotics, or other controlled substances.

- February 2010. Congress receives testimony that NONE of the drugs currently used and paid for by Tricare and the VA to treat our brain injured veterans are FDA-approved to treat TBI. Nearly all of the anti-depressants carry FDA Black Box warnings urging caution in 17-24 year olds because of the increased risk of suicide.
- A "wait-time" scandal that started in Phoenix and has led to deaths of veterans has been shown to be replicated at numerous VA facilities across the nation. Presumably, some of the over 500,000 veterans with TBI/PTSD have been negatively affected.
- Current DOD/VA response to TBI treatments do not include even informing the brain injured that a potential treatment for TBI exists -- HBOT. There is effectively no "informed consent" to brain-injured service members from military medicine about even the possibility that HBOT might alleviate the symptoms and underlying physiological brain injuries. The same is true uniformly across the United States medical community, including in professional sports.
- November 2008. Army has not administered its own brain injury assessment test (ANAM) as recommended and has rarely used its results. The Army has so little confidence in ANAM -- developed by the Army at a cost over \$20M -- that the Surgeon General issued an explicit order that soldiers whose scores indicated cognitive problems should not be sent for further medical evaluation.
- November 2008. A TBI Consensus Conference sponsored by DOD/VA/Army declares that Hyperbaric Oxygen Therapy for Traumatic Brain Injury is safe.