

Decreased symptoms of PTSD and TBI plus increased pulmonary function following multi-modality protocol

Delina H. Bishop, Stacy Sweeney, Michael Sweeney

ABSTRACT

A 40-year-old female Marine Corps Veteran diagnosed with chronic post traumatic stress disorder (PTSD), traumatic brain injuries (TBI), and significant environmental contaminants exposure induced constrictive bronchiolitis participated in a 12-week mixed-modality protocol of hyperbaric oxygen, red light therapies, intermittent hyperoxic/hypoxic training (IHHT), neurofeedback, and oral pre/probiotic supplements.

Final results subjectively revealed marked improvements in PTSD and depression scores falling below diagnosable thresholds, qEEG neurofeedback results, and pulmonary function. Additional reported benefits included increased sleep quality, improved mood, diminished depression and noticeable increased lung function in daily living.

Case Report

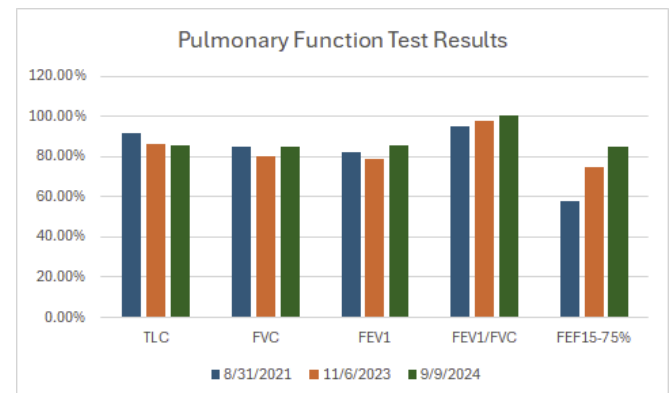
A 40-year-old female Marine Corps Veteran is diagnosed with post traumatic stress disorder, traumatic brain injuries, and environmental contaminants exposure induced constrictive bronchiolitis. Her symptoms included fatigue, interrupted sleep, migraines, negative thought patterns, anger, poor focus, and relationship issues derived from PTSD/TBI and diminished pulmonary function symptoms.

The 12-Week Protocol included Hyperbaric Oxygen Therapy (HBOT), Intermittent Hyperoxic/Hypoxic Training (IHHT), photobiomodulation (red light), neurofeedback, 90 days of Amare Global pre/probiotic/nootropic oral supplementation, and health coaching sessions addressing sleep, diet, and thought patterns.

Measurable Outcomes

- PCL-5 Assessment decreased from 43, 32, and 13, pre, mid and post-protocol respectively. *Scores below 35 represent <15% probability of PTSD.*
- PHQ-9 Assessment - decreased from 23, 15, to 7, respectively. *From moderate to mild depression scores.*

- PSQI Sleep Assessment - maintained an average score of 4.5. *Scores below 5 are associated with good sleep quality.*
- qEEG Brain Mapping - Mid-protocol 29% plasticity and 46% normalization and post-protocol 40% plasticity and 45% normalization. *Score over 30% plasticity and 35% normalization are considered outstanding.*
- Cognitive Emotional Checklist (CEC) - pre to post protocol responses demonstrated a 30% improvement in memory. The CEC is a standardized psychological test that allows a client to rate the severity of various cognitive and emotional issues.
- Pulmonary Function - Trend from 2021 to 2023 reveals declining pulmonary function in 3 of 5 measurements - TLC, FVC, and FEV1. Post Protocol assessment reveals notable improvement in nearly all 5 measurement criteria.



Subjective Outcomes

“My two biggest improvements have been my breathing and depression. Depression in the sense I no longer feel like I want to end my life every single day. There has been a mild improvement on PTSD and anxiety but life situations are keeping that pretty elevated.”

Discussion

This Veteran endured numerous life stresses throughout the Protocol to include an autoimmune diagnosis and significant family challenges which led to a less robust participation in the Protocol. In light of the unforeseen life stresses during this protocol and health/physical limitations of the participant, this case

report demonstrates the effectiveness of multi-modal treatment for the symptoms of post-traumatic stress, traumatic brain injuries, and constrictive bronchiolitis over a 12-week period. This study followed a protocol focusing upon root-cause issues to include enhancing angiogenesis and neurogenesis in the brain through oxygen modalities ^{1,2}, enhancing ATP production through NAD+ ³ and photobiomodulation ⁴, minimizing brainwave dysregulation with qEEG neurofeedback ⁵, and diminishing gut-brain axis neurochemical imbalances through supplementation.⁶⁻⁹ This data derived from this regimen will significantly impact the treatment protocols of future Veterans and First Responders suffering from the effects of PTSD and TBI within this continuing program and beyond.

Delina Bishop, MD

Medical Director OPTI Health Lake Norman
dmbishopmd@optihealthlkn.com

Stacy Sweeney, MSPT, MS

Founder, Director Neurocognitive Services
OPTI Health Lake Norman
stacy@optihealthlkn.com

Michael Sweeney, MBA

Founder and Chief Executive Officer
OPTI Health Lake Norman
mike@optihealthlkn.com

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