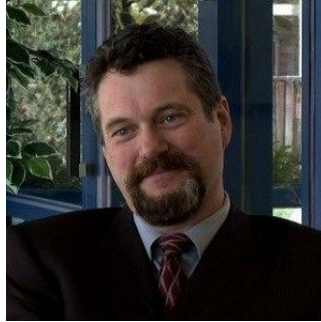


Study Pinpoints PTSD and Trauma Injury Differences



A brain imaging study has enabled researchers to identify the biological differences between post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI). Using single-photon emission computed tomography (SPECT) that looks directly at cerebral blood flow and indirectly at brain activity, the researchers were able to correctly differentiate 94 percent of PTSD and TBI cases from each other.

The ability to distinguish between the two conditions is important because treatments for PTSD differ from those for TBI. Results of the study are published in the April 2015 special US Veterans Issue of the journal *Brain Imaging and Behavior*.

The study was conducted by a team of brain-imaging scientists from Amen Clinics (USA), UCLA, Thomas Jefferson University (USA) and University of British Columbia (Canada).

"The need for a diagnostic tool to reliably distinguish PTSD from TBI in Veteran populations is urgent. Prior attempts to use imaging studies such as CT scans, MRIs, and conventional x-rays have been unsuccessful," says Theodore Henderson, MD, PhD, President of The Synaptic Space and a member of the research team. "SPECT brain imaging, a nuclear medicine technique, can show areas of overactivity and underactivity in the brain and can illustrate changes in brain function with treatment."

Improved diagnosis could lead to improved treatment for more than 400,000 US military personnel and veterans who have been diagnosed with PTSD or TBI since 2001. Available treatments of PTSD and TBI are vastly different, Dr. Henderson says, adding that the treatments for PTSD can be harmful, or at best, not helpful for those with TBI and vice versa.

He notes that the technique of analysing the data, and developing targeted treatments, is far superior to anything previously available in the United States.

"My colleagues and I have been developing a specific treatment for TBI which depends upon our ability to target the area of injury in the brain," says Dr. Henderson. "The use of SPECT allows us to see the location of the injury and direct this treatment to those specific foci of brain injury."

Source: [UCLA](#)

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