LIMBIC CENC

Key Points Summary

Tate, D. F., Wade, B. S., Velez, C. S., Drennon, A. M., Bolzenius, J. D., Cooper, D. B., Kennedy, J. E., Reid, M. W., Bowles, A. O., Thompson, P. M., Gutman, B. A., Lewis, J. D., Ritter, J. L., York, G. E., & Bigler, E. D. (2018). Subcortical shape and neuropsychological function among U.S. service members with mild traumatic brain injury. Brain Imaging and Behavior, 13(2), 377-388. doi:10.1007/s11682-018-9854-8

Primary Question this Study Addresses

What is the relationship between shape descriptors of subcortical nuclei (thalamus, accumbens, amygdala) and neuropsychological performance in post-deployed U.S. Service Members?

Study Findings That Add to Our Knowledge

The shape of several cortical structures (i.e., caudate, putamen, thalamus) were significantly associated with measures of attention, processing speed, and memory.

Higher processing speed was associated with more dilation of caudate surface area among patients with mTBI who reported more than one concussion severity variable (loss of consciousness, alteration of consciousness, and/or post-traumatic amnesia).

How Study Evidence Might Be Used in Practice

Shape features may be associated with performance on cognitive measures in patients with mTBI.

Brain-behavior relationships may improve the understanding of the biological underpinnings of cognitive changes in patients with mTBI and potentially lead to improved patient-centered treatment approaches.

For more information on neuroimaging and mTBI, visit:

Resource

To access the study abstract, click here: Abstract

This work was supported by the Assistant Secretary of Defense for Health Affairs endorsed by the Department of Defense, through the Psychological Health/Traumatic Brain Injury Research Program Long-Term Impact of Military-Relevant Brain Injury Consortium (LIMBIC) Award/W81XWH-18-PH/TBIRP-LIMBIC under Awards No. W81XWH1920067 and W81XWH-13-2-0095, and by the U.S. Department of Veterans Affairs Awards No. I01 CX002097, I01 CX002096, I01 HX003155, I01 RX003444, I01 RX003443, I01 RX003442, I01 CX001135, I01 CX001246, I01 RX001774, I01 RX 001135, I01 RX 002076, I01 RX 001880, I01 RX 002172, I01 RX 002173, I01 RX 002171, I01 RX 002174, and I01 RX 002170.