

## **Transdiagnostic Implications of Repetitive Head Impact Exposure on Brain Aging and Mixed Neurodegenerative Disease**

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Millions of older adults have sustained repetitive head impacts (RHI) through common exposures like globally popular contact sports, military service, intimate partner violence, and other sources. RHI is the only known risk factor for chronic traumatic encephalopathy (CTE), a distinct neurodegenerative tauopathy, but also predisposes to other proteinopathies like TDP43 and  $\alpha$ -synuclein. This invited presentation will summarize emerging research on clinical and biologic correlates of RHI, with a focus on 1) limbic brain structure vulnerability to RHI and 2) fluid proteomics and the potential role for RHI-related inflammation as a unifying upstream risk factor linking RHI to neurodegenerative disease later in life. The presentation will also highlight progress with integrating detailed head trauma exposure measurement, including RHI, into local and national dementia research networks to better capture transdiagnostic implications across the full spectrum of Alzheimer's disease and related dementias.

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