

August 2, 2022

Walter Koroshetz, MD
Director
National Institute of Neurological Disorders and Stroke
Bethesda, Maryland

Dear Dr. Koroshetz,

Thank you for initiating and continuing to fund research on chronic traumatic encephalopathy (CTE) at the National Institute of Neurological Disorders and Stroke (NINDS). NINDS-funded research on CTE has significantly advanced the field. Specifically, the NINDS Criteria for the Pathological Diagnosis of CTE have provided consistency in the diagnosis of CTE for brain banks and pathology departments around the world.

This new consistency in pathological diagnosis, combined with the proliferation of CTE research internationally, has led to new insights into CTE causation. To explore whether CTE is an environmentally caused disease, and is thus preventable, a group of 14 scientists and physicians recently collaborated to review the known association between repetitive head impacts (RHI) and CTE through the Bradford Hill Criteria for Causation.

Our attached review, *Applying the Bradford Hill Criteria for Causation to Repetitive Head Impacts and CTE*, was published in *Frontiers in Neurology* on July 22. In reviewing the data, we were surprised by how much the evidence for causation has been further strengthened over the last few years. In a review of the literature through Hill's nine viewpoints, combined with new statistical analyses of published data that revealed a previously hidden, but striking, strength of association, we conclude that the evidence in favor of RHI as a causal pathway leading to CTE is substantial. In conclusion, we urge our colleagues to consider this new evidence and to begin instituting policies to prevent CTE in the next current generation of contact sport athletes.


We have shared the article with our colleagues in CTE and related neurodegenerative disease research, public health and sports medicine fields, and 41 of us are writing to you today to invite you to review our analysis. **If you share our conclusion that there is clear evidence that RHI is a cause of CTE, we urge you to update the NINDS official statements on CTE causation.**

As you know, the Center for Disease Control issued a fact sheet in 2019 supporting causation, stating, "The research to-date suggests that CTE is caused in part by repeated traumatic brain injuries, including concussions, and repeated hits to the head, called subconcussive head impacts." Unfortunately, this statement is not widely known.

If the NINDS and CDC were aligned on causation of CTE, we believe this would ignite interest in CTE prevention, research into pathogenic mechanisms of CTE, diagnosis during life and effective treatments.

We look forward to your response. We are available individually or as a group to respond to any questions you or other members of NINDS might have.

Signed,



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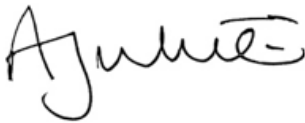
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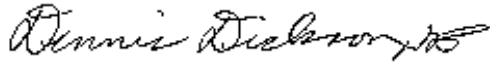
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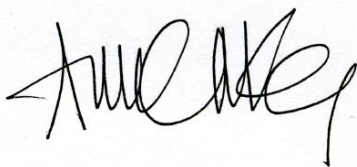
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