

Science Discussion Series: Yesterday was the Super Bowl, and today we are hosting a team of concussion experts. Let's discuss pediatric, sports-related, military-related, and chronic brain injuries!

ScienceModerator<sup>1</sup> and r/Science AMAs<sup>1</sup>

<sup>1</sup>Affiliation not available

April 17, 2023

### Abstract

Hi reddit! In honor of the Super Bowl yesterday, we have assembled a panel of clinicians and researchers who specialize in the study of traumatic brain injury (often referred to as concussions). TBI is of growing interest to researchers, especially with questions surrounding the effects of chronic (repeated) injuries. Recent autopsies of deceased professional football players have found evidence of chronic traumatic encephalopathy, a neurodegenerative disease thought to be caused by chronic TBI. TBI is also a problem in other groups as well. Military members are often at risk of TBI— between 2000 and 2012, there were over 310,000 reported TBIs in active duty military serving in Middle Eastern combat theaters. Likewise, in the general population, children and older adults experience the highest rates of TBI (according to recent data from the Centers for Disease Control). If you have ever had questions about head injury, or some of the long-term outcomes of head injury, now is the time to ask! The panel we have assembled represent expertise in pediatric, sports-related, military-related, and chronic brain injury. Our panel includes: Dr. Robert Stern (u/RobertAStern) - I am a Professor of Neurology, Neurosurgery, and Anatomy & Neurobiology at Boston University (BU) School of Medicine, where I am also Director of the Clinical Core of the BU Alzheimer's Disease Center. My primary area of research is chronic traumatic encephalopathy (CTE) and the long-term effects of repetitive head impacts in athletes. I am Co-Founder and Director of Clinical Research for the BU CTE Center, and I am proud to be the lead investigator of the DIAGNOSE CTE Research Project, a \$16 million, 7-year grant (funded by the National Institutes of Health) for a multi-center, longitudinal study to develop methods of diagnosing CTE during life as well as examining potential risk factors of the disease. I have published over 160 peer-reviewed journal articles, as well as two new textbooks, including Sports Neurology. As a clinical neuropsychologist, I have also developed several commonly used cognitive, including the Neuropsychological Assessment Battery (NAB). Dr. Keith Yeates (u/KeithYeates) - Keith Yeates: I am a pediatric neuropsychologist by training. I hold the Ronald and Irene Ward Chair in Pediatric Brain Injury and am Professor and Head of the Department of Psychology at the University of Calgary in Alberta, Canada. I head the University's Integrated Concussion Research Program. I have been doing clinical and research work on TBI in children for about 30 years. Dr. Elisabeth Wilde (u/LisaWildePhD) - I am an Associate Professor in the Department of Neurology at the University of Utah and an Associate Professor in the Departments of Physical Medicine and Rehabilitation, Neurology and Radiology at Baylor College of Medicine. I also hold an appointment as a Health Research Scientist in the US Veterans Affairs Health System (VA Salt Lake City Healthcare System). My research interests include the use of advanced forms of neuroimaging to enhance diagnosis and prognosis, monitor recovery and neurodegeneration, evaluate the efficacy of therapeutic intervention, and elucidate aspects of neuroplasticity in traumatic brain injury. As a clinical neuropsychologist, I have an interest in brain-behavior relationships involving cognitive, neurological, and functional outcome and clinical trials in traumatic brain injury and associated comorbidities. For the last 20 years, I have worked with patients with traumatic brain injury and concussion across a spectrum of age, severity, and acuity, with particular interests in children and adolescents, athletes, and Veteran and Active Duty Service Members with concussion or traumatic brain injury. I have participated in over 40 federally-funded clinical projects in TBI, and authored over 120 peer-reviewed publications. I am currently the Director of the Neuroimaging Core for the Department of Defense and Veterans Affairs co-funded Chronic Effects of Neurotrauma Consortium (CENC) Neuroimaging

Core and has been actively involved in the International Common Data Elements (CDE) initiative and co-leads the Enhancing Neuroimaging Genetics Meta-analysis (ENIGMA) Working Group for TBI. Dr. Vicki Anderson (u/VickiAndersonPhD) - I am a clinical neuropsychologist at the University of Melbourne and Royal Children's Hospital, Australia. My work spans clinical practice, research and teaching, with my focus being on children with acquired brain injury and their families. In particular, I am interested in the impact of environment and family on socio-emotional recovery, and on developing parent-based psychosocial interventions to optimise child recovery. Dr. Chris Giza (u/grizwon) - I graduated from Dartmouth College, received my M.D. from West Virginia University and completed my training in Neurology at UCLA. Then I worked on the Yosemite Search and Rescue team before joining the UCLA Brain Injury Research Center in 1998. I served on the California State Athletic Commission from 2005-2015, and traveled to Afghanistan in 2011 as a civilian advisor to the Department of Defense. I founded and direct the UCLA Steve Tisch BrainSPORT program, and serve as Medical Director for the Operation MEND-Wounded Warrior Project mild TBI program. I co-authored concussion / mild TBI guidelines for the American Academy of Neurology, Centers for Disease Control and the Concussion in Sport Group (Berlin guidelines), and have been a clinical consultant for the NFL, NHL/NHLPA, NBA, MLB and Major League Soccer. I am a Professor of Pediatric Neurology and Neurosurgery at the David Geffen School of Medicine and UCLA Mattel Children's Hospital.

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