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Abstract

Concussion has been linked to the presence of injurious strains in the brain tissues. Research investigating severe brain injury has reported that strains in the brain may be affected by two parameters: magnitude of the acceleration, and duration of that acceleration. However, little is known how this relationship changes in terms of creating risk for brain injury for magnitudes and durations of acceleration common in sporting environments. This has particular implications for the understanding and prevention of concussive risk of injury in sporting environments. The purpose of this research was to examine the interaction between linear and rotational acceleration and duration on maximum principal strain in the brain tissues for loading conditions incurred in