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Importance of neck in concussion

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Importance of neck in concussion

Mild traumatic brain injury (mTBI), commonly known as concussion, is a growing concern in contact sports as the number of incidents is on the rise each year for both young and professional athletes. Developing neck strength and stiffness through proper neck muscle training and awareness of impact could help mitigate concussive force to the head. However, the biomechanical effect of cervical muscles on head and brain response is not clearly understood due to methodological constraints and complexities involving physical experiments. Hence, we used a novel computational approach using a finite element human body head-neck model to find answers that could have been difficult to understand otherwise. We analyzed all major anatomical parts of the cervical region to study their significance in stabilizing the head in a direct impact.