Cervical Injuries in Ice Hockey: A Comprehensive Analysis from 2014-2022

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Abstract

Purpose: The purpose of this study is to evaluate the incidence of neck injuries in ice hockey from 2014-2022 and identify prevention strategies using Haddon's Countermeasures.

Methods: Data was derived from the U.S. Consumer Product Safety Commission's National Electronic Injury Surveillance System (NEISS). Injury rate denominators utilized participation data obtained from the Sports Business Network. All emergency department admissions coded as ice hockey and neck injuries were included. Sample weights were applied to obtain national counts and rates of neck injury per 100,000 participants. Age was divided between 6-12, 13-17, and 18+. Using injury narratives, a Haddon Countermeasures framework was used to suggest interventions to mitigate risks.

Results: From 2014-2022, 10456 injuries were estimated nationally. The highest rate of neck injuries occurred in ages 6-12 in 2019 (65.1 injuries per 100,000), 13-17 in 2021 (121.7 per 100,000), and ages 18-65 in 2022 (32.0 per 100,000). Ages 13-17 consistently had the highest rate of neck injury, while ages 18+ had the lowest with an uptick in injury rate from 2019-2020. Haddon's Countermeasure strategies included promoting policies that discourage common mechanisms for neck injuries, like high force contact between players and the boards.

Conclusion: The results revealed an increasing trend in neck injuries across all age groups, indicating that current measures may not be effective. In ages 13-17 where rules permit body contact, there was a higher rate of injury compared to ages 6-12. Further research should address the factors contributing to neck injury to reduce the rate of neck injuries in ice hockey.