



Frozen Dangers: Exploring Head and Neck Injuries Among Young Ice Skaters

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Introduction

Winter sport activities put individuals at risk for acute and chronic injuries, though there is relatively little data available on injuries sustained while ice skating [1,2]. The available literature has shown that head and neck injuries (HNI) make up a sizable fraction of all ice-skating injuries [3,4]. However, it is unclear how these injuries are classified specifically (e.g., contusions, lacerations, hematomas), as well as which anatomical regions are involved. The objective of this study was to better characterize HNI in the ice-skating population.

Methods

Data on ice-skating injuries from 2002-2021 were collected from the National Electronic Injury Surveillance System (NEISS) and reviewed to exclude non-ice-skating accidents. The dataset was revised and expanded, introducing additional codes for specific facial injuries and consolidating all data into a single spreadsheet. A retrospective review was conducted, focusing on patient demographics, injury diagnosis, and location. The compiled data was then subjected to Chi-squared testing with statistical significance set for a p-value less than .05 ($p < .05$), using Stata 15 software.

Demographic	
Age (years) (mean ± SD) (median [95%])	10.2 ± 3.8 10 [9-10]
Weight (kg) (mean ± SD) (median [95%])	27.8 ± 27.8 15.5 [15.5-15.7]
Sex N (%)	
Male	1659 (62)
Female	1027 (38)
Race N (%)	
White	1342 (50)
Black/African American	206 (8)
Asian	68 (2)
Other	100 (4)
Unknown	970 (36)

Table 1: Patient Demographics

Data Analysis

Code	Body part	N (%)
33	Arm, lower (not including elbow or wrist)	1 (0.04)
34	Wrist	1 (0.04)
75	Head	823 (31)
76	Face (unspecified location)	506 (19)
77	Eyeball	6 (0.2)
83	Foot	1 (0.04)
88	Mouth (including lips, tongue and teeth)	260 (10)
89	Neck	37 (1)
94	Ear	4 (0.15)
95	Chin	911 (34)
96	Nose	38 (1)
97	Forehead	93 (4)
98	Mandible	5 (0.2)

Table 2: Anatomical Location of Injury

Demographic	Head and neck body part	Non-head and neck body part	p-value
Age (median [95% CI])	9 [9-10]	10 [10-11]	.001*
Weight (median [95% CI])	15.5 [15.5-15.8]	15.4 [15.4-15.7]	.09*
Sex N (%)			.002**
Male	1023 (64)	636 (58)	
Female	571 (35)	456 (42)	

Table 3: Relationship Between Demographics and Anatomical Location of Injuries.

*Kruskal Wallis **Chi-squared

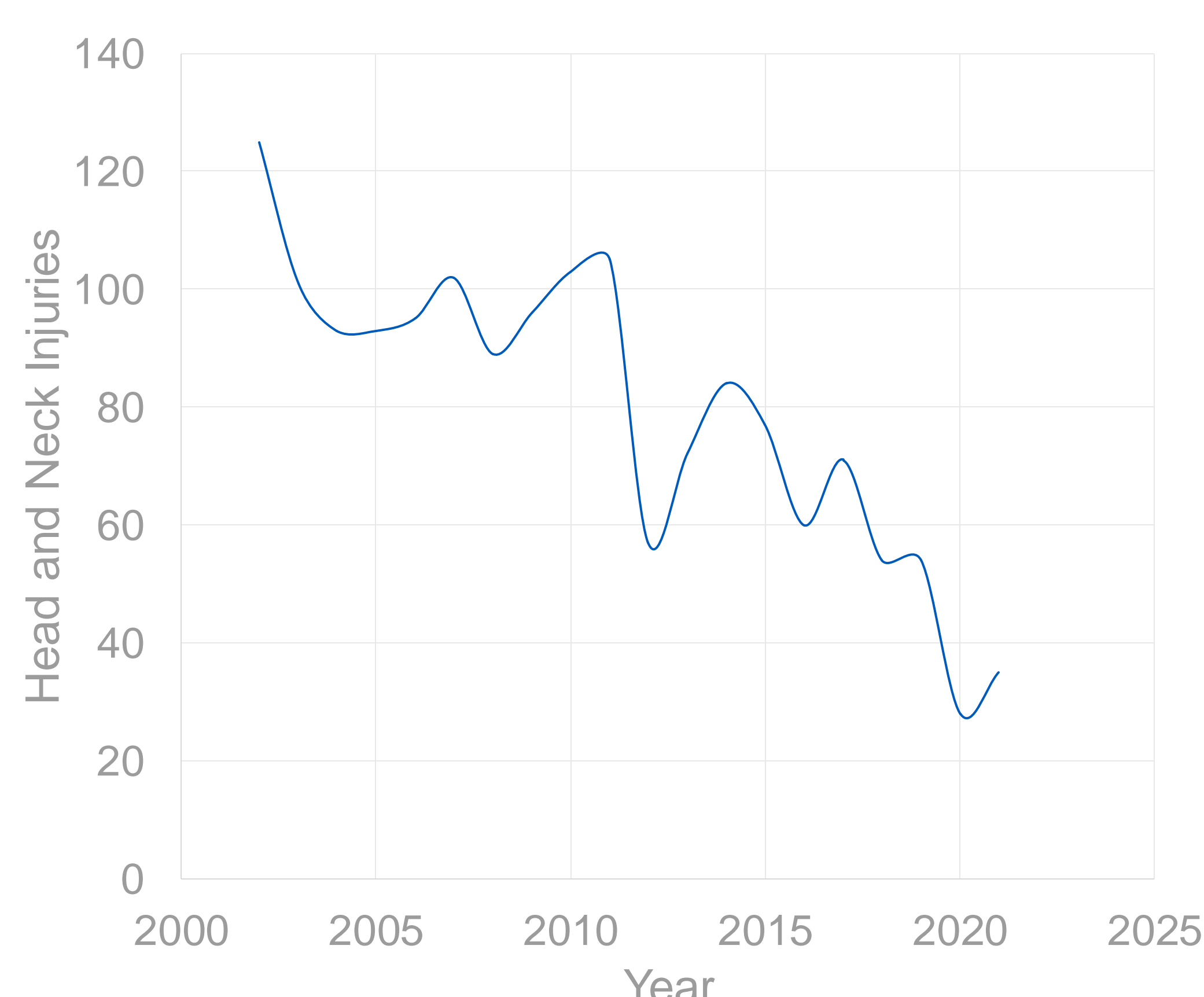


Figure 1: Trends in Head and Neck Injuries Over Time: 2002-2021 (Chi-squared $p < .001$)

Results

2,686 ice-skating injuries were identified between 2002-2021. 1659 (62%) of injuries were male with a median age of 10.823 (Table 1). Of all ice-skating injuries, 1594 (59%) were head and neck related. Lacerations were the most common injury, particularly to the face, ear, chin, and forehead. 911 (34%) and 823 (31%) of HNI were to the head and chin, respectively. Distribution of injury location can be found in Table 2. 2263 (84%) of HNI occurred at recreational or sporting venues and 2620 (98%) of these injuries were treated and released or examined and released from the hospital. Males and younger children were more likely to sustain ice-skating injuries to the head and neck (Table 3). Linear regression analysis also revealed a decrease in HNI over time (Figure 1). There were no reported mortalities resulting from ice-skating injuries.

Conclusion

This study enhances our knowledge HNI in ice-skating and offers insights for creating safety measures. The research suggests common HNIs necessitate specific protective gear and changes to ice-skating environments. Since HNIs significantly impact quality of life, more research is needed to understand their long-term effects. The results could inform public health policies, promoting protective gear use and ice-skating safety standards.

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