Evaluating the Impact of "*Heads-Up Football*" on Pediatric Facial Traumatic Injuries: A 20 Year Review

Kenechukwu Charles-Obi [1], Papa Abdoulaye Diack [1], Nathaniel Tchangou [1], Romaine Johnson [2], Robert Sataloff [1]

[1] Department of Otolaryngology, Drexel University College of Medicine, Philadelphia, PA [2] Department of Otolaryngology, University of Texas Southwestern, Dallas, TX

Introduction

Figure 1. U-11 youth football

- The 'Heads Up Football' (HUF) campaign was developed in 2012 to enhance player safety in youth and high school football through improved tackling techniques, proper equipment fitting, and comprehensive safety education

Figure 2. Facial laceration from football

- The head and neck region is one of the most commonly injured parts of the body in children
- While the impact of HUF on reducing concussion rates has been studied extensively, its effects on other injuries, such as head and neck injuries, remain unclear
- This study aims to evaluate the relationship between HUF and the incidence of head and facial injuries, providing insights into the broader safety benefits of this initiative

Method

United States CONSUMER PRODUCT SAFETY COMMISSION

- **Database**: National Electronic Injury Surveillance System (NEISS)
- **Injuries**: Avulsion, contusion or abrasions, crushing, fracture, hematoma, hemorrhage, laceration and nerve damage
- **Age**: 5 – 18 years
- **Body Parts**: Head and Face
- **Year**: 2004 – 2023

Results

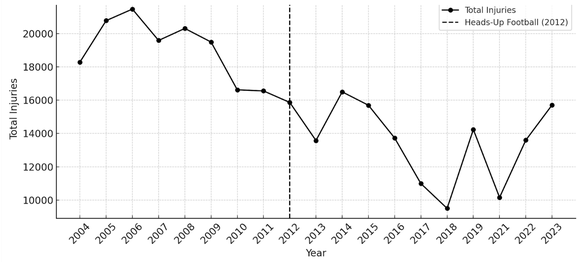

Figure 3: Total Football Injuries Per Year (2004–2023, Excl. 2020):
Annual total number of football-related head and face injuries reported between 2004 and 2023, excluding 2020. A dashed line marks the implementation of the Heads-Up Football initiative in 2012

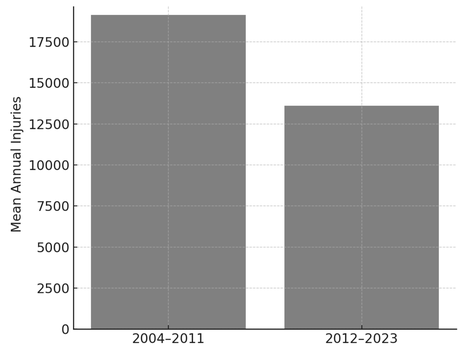

Figure 4: Mean Annual Football Injuries by Time Period
Comparison of mean annual football-related injuries before (2004–2011) and after (2012–2023) the implementation of the Heads-Up Football policy

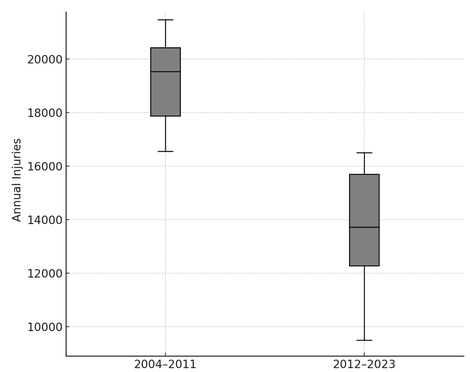

Figure 5: Distribution of Annual Football Injuries by Period
Box plot comparing the distribution of annual football-related injuries across two time periods: pre-policy (2004–2011) and post-policy (2012–2023). The box represents the interquartile range, and the median is shown with a white line.

Results

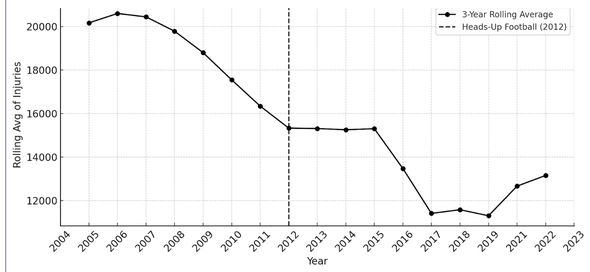

Figure 6: Three-Year Rolling Average of Football Injuries (2004–2023, Excl. 2020)
Three-year centered rolling average of football-related injuries from 2004 to 2023, excluding 2020. A dashed line indicates the introduction of Heads-Up Football in 2012. Rolling averages help illustrate injury trends while minimizing year-to-year fluctuations.

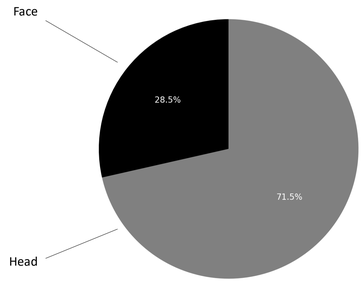

Figure 7: Proportion of Head vs Face Football Injuries (2004–2023, Excl. 2020)
Pie chart showing the proportion of total football-related injuries involving the head (gray) and face (black) from 2004 through 2023, excluding 2020. Head injuries constituted the majority of reported cases.

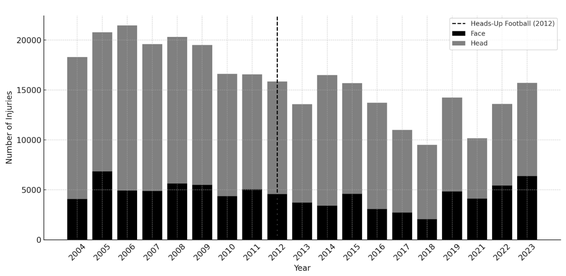

Figure 8: Annual Head and Face Injuries in Football (2004–2023, Excl. 2020)
Stacked bar chart showing the annual number of football-related injuries involving the head (gray) and face (black) from 2004 to 2023, excluding 2020. The 2012 Heads-Up Football policy year is marked with a vertical dashed line.

Discussion

- The mean annual number of head and facial injuries decreased from 20,544.9 injuries before HUF to 16,967.5 injuries after HUF ($p < 0.05$)
- Policy-level interventions like HUF can meaningfully contribute to head and facial injury mitigation in youth sports
- The persistence of injuries in the post-policy era underscores that HUF alone is not sufficient
- The effect of HUF highlights the need for increased safety policy implementation in all pediatric sports
- Although there is a notable difference in injuries before vs after HUF implementation, correlation ≠ causation
- Longitudinal studies and prospective injury registries could help disentangle the effects of policy from confounding factors and provide more definitive evidence of causality

USAFootball HEADS UP FOOTBALL

Conclusion

- The implementation of the Heads-Up Football Campaign in 2012 led to a decrease in head and facial injuries amongst the pediatric population
- Future studies should aim to clarify the mechanisms behind these trends and evaluate the effectiveness of evolving policies in real-world settings

Acknowledgements