

Does the Wearing of Padded Headgear in Non-helmeted Contact Sports Reduce the Likelihood of Sustaining a Concussion? A Critically Appraised Topic

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INTRODUCTION

Concussions are a hot topic in the world of athletics. When most people think of sports related concussions, they generally think of American football or ice hockey. Current literature has found that men's rugby has the highest amount of concussions of all the team contact sports for both adult and adolescent athletes. High on the list for adolescent athletes is soccer, having the 5th most concussions behind hockey, American football, and lacrosse. It is important to note that of the top 5 sports for concussion, soccer and rugby are the only ones that do not require the use of a helmet. This raises the question: could wearing padded headgear decrease the amount of concussions in the high concussion risk sports that do not require a helmet?

OBJECTIVES

To determine whether the wearing of padded headgear in contact sports (i.e. rugby and soccer) reduce the likelihood of sustaining a concussion.

METHODS

Sources: PubMed, SPORTDiscus, and Google Scholar

Search Terms: soccer, rugby, padded headgear, concussions, prevention

Inclusion Criteria: studies that were performed on humans, looked at the relationship between padded headgear and concussions, were conducted within the last 15 years, and included only rugby or soccer.

Exclusion Criteria: studies that were performed on animals, looked strictly at how headgear dissipates force, looked at non-padded headgear (hard shelled helmets, mouth-guards, or face shields), researched how headgear effected accuracy, or sought out the athlete's opinions on headgear and concussions.

Search Results: Three studies, one cross-sectional study and two randomized controlled trials were selected based on the inclusion/exclusion criteria.

RESULTS

Data Synthesis

The cross-sectional study gave adolescents (12-17yo) on a traveling soccer team a survey asking them about their use of headgear and any concussion symptoms experienced. They found that a little more than 50% of non-headgear users reported concussion symptoms compared to 27% of headgear users. One RCT studied 14-18-year-old soccer players while the other studied 13-20-year-old male rugby athletes. Both studies showed that the wearing of headgear did not decrease the likelihood of sustaining a concussion.

Different Types of Headgears



Summary Table

	Delaney et al ⁴	McGuine et al ³	McIntosh et al ²
Study Design	Cross-sectional study	Randomized Controlled Trial	Cluster Randomized Controlled Trial
Level of Evidence	4	2b	2b
Validity Score	STROBE 16/22	PEDro 6/11	PEDro 5/11
Participants	278 athletes (180 boys, 98 girls), competing on traveling soccer teams between the ages of 12-17.	88 schools (62 male teams, 88 female teams). Athletes were between the ages of 14-18 y/o.	4,095 Male Rugby teams participating in under 13, 15, 18, and 20-yr age groups
Purpose	To study the effects of protective headgear in adolescent football (soccer) players	To determine if the number of concussion injuries in soccer players change depending on whether or not they wear protective HG or not	To determine the efficacy of padded headgear in decreasing the rates of head injury/concussion
Intervention	A questionnaire examining the 2006 football (soccer) season using self-reported symptoms	Teams were randomized and placed into HG & NO HG groups. 1498 subjects in HG group were compliant & 1539 No HG group were compliant	1493 participants were placed into the control group, 1128 participants were assigned to a standard HG group, and 1474 participants were assigned to a modified HG group.
Outcome Measures	The number of concussions experienced during the 2006 football (soccer) season	The number of sport related concussions athletes received and the severity of those concussions	The rates of head injury and concussion in each group
Main Findings	52.8% of the no HG group reported symptoms of concussion compared to 26.9% of HG athletes.	There was no difference in the rate of concussions between Headgear and Non-Headgear groups.	There was no statistical difference between any of the three groups when it came to concussions
Conclusion	Wearing HG may decrease the likelihood of sustaining a concussion.	The wearing of headgear in soccer did not reduce the likelihood of sustaining a SRC	The wearing of padded headgear did not reduce to rate of concussion

CONCLUSION

There is good, but conflicting evidence on the use of padded headgear in non-helmeted contact sports. It is due to this confliction that we can not say whether these headgears may be useful in preventing concussions. More focused research is necessary in order to better understand the impact padded headgear has on concussions. Based on the SORT system, a grade B recommendation is given due to inconsistent findings in level 2 evidence.

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