

5-2016

# Risk Factors for Concussion in Collegiate NCAA Division II Men's and Women's Soccer Athletes

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## Recommended Citation

Beckler, Isaac S. and Weller, Michael S., "Risk Factors for Concussion in Collegiate NCAA Division II Men's and Women's Soccer Athletes" (2016). *Kinesiology and Allied Health Faculty Publications*. 51.

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# Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association

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Volume 2

Issue 1 *Ohio Athletic Trainers' Association*  
Supplementary Edition

Article 17

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Beckler, Isaac S. and Weller, Michael S. ( ) "Risk Factors for Concussion in Collegiate NCAA Division II Men's and Women's Soccer Athletes," *Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association*: Vol. 2: Iss. 1, Article 17.

Available at: <http://scholarworks.bgsu.edu/jsmahs/vol2/iss1/17>

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## RISK FACTORS FOR CONCUSSION IN COLLEGIATE NCAA DIVISION II MEN'S AND WOMEN'S SOCCER ATHLETES

*Objective:* To identify risk factors for concussion among men's and women's college soccer athletes, and determine the likelihood of concussion based on those risk factors.

*Design and Setting:* A short electronic survey was sent out to NCAA Division II universities in Ohio. Survey questions included demographics, soccer-related questions, and concussion-related questions.

*Participants:* Men's and women's soccer athletes from division II universities in Ohio participating in varsity or junior varsity soccer at their respective universities who were at least 18 years of age.

*Intervention:* An online survey.

*Main Outcome Measurement:* Number of concussions sustained.

*Results:* Of the concussions sustained while playing soccer, 29.4% of female participants sustaining a concussion compared to only 17.4% male participants. Concussions occurred during a competitive match in 8 of the 9 concussions compared to during a practice. There were 2.8 concussions per 100 years for strikers as well as midfielders, while no concussions occurred while playing defender. Varsity athletes showed a high incidence of concussions (33.3%) compared to JV/Reserve athletes in which there were no concussions while playing soccer ( $p = 0.018$ ). Among players with a concussion history, 5 of the 12 (41.7%) sustained multiple concussions. The most common MOI was contact with another player's body (36.8%). Of the 40 respondents, there were only 3 players who wore mouth guards, and 1 who wore headgear. There was no significant difference between protective equipment worn and a diagnosis of concussion ( $p = .157$ )

*Conclusions:* Being a varsity athlete, playing in a game, having a previous history of concussion, and playing as a striker or midfielder were all risk factors for concussion.

*Keywords:* concussion, soccer, risk factors.