

Heading the ball, player-to-player contact and concussions in high school soccer

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Credit: Gustavo Rezende/public domain

Contact with another player was the most common way boys and girls sustained concussions in a study of U.S. high school soccer players, while heading the ball was the most common soccer-specific activity during which about one-third of boys and one-quarter of girls sustained concussions, according to an article published online by *JAMA Pediatrics*.

Soccer has increased in popularity in the United States over the past three decades. In 1969-1970, there were 2,217 schools that fielded 49,593 [boys'](#) soccer players and no [girls'](#) soccer players compared to 2013-2014 when 11,718 schools fielded 417,419 boys' soccer players and 11,354 schools fielded 375,564 girls' soccer players.

R. Dawn Comstock, Ph.D., of the Colorado School of Public Health, University of Colorado Anschutz Medical Campus, Aurora, Colo., and colleagues analyzed data collected from 2005-2006 through 2013-2014 in a large nationally representative sample of U.S. high schools where the participants were boys and girls [soccer players](#). The authors looked at trends in concussions over time and

identified the mechanisms of concussion as well as the soccer-specific activities during which most concussions occurred.

Overall, the authors found in girls' soccer that 627 concussions were sustained during almost 1.4 million athlete exposures (AEs are defined as one [high school](#) athlete participating in one school-sanctioned soccer practice or competition) for a rate of 4.5 concussions per 10,000 AEs. In boys' soccer, there were 442 concussions sustained during almost 1.6 AEs for a rate of 2.78 concussions per 10,000 AEs.

Other findings were:

- For boys (68.8 percent) and girls (51.3 percent), player-player contact was the most common way concussions were sustained.
- Heading was the soccer-specific activity during which almost one-third of boys' concussions (30.6 percent) and just over one-quarter of girls' concussions (25.3 percent) occurred.
- Contact with another player was the most common mechanism of heading-related concussions among boys (78.1 percent) and girls (61.9 percent).

The authors note soccer has been allowed to become a more physical sport over time with more athlete-athlete contact occurring.

"Banning heading is unlikely to eliminate athlete-athlete contact or the resultant injuries. Athlete-athlete contact was the most common mechanism of all concussions among boys (68.8 percent) and girls (51.3 percent) regardless of the soccer-specific activity during which the injury occurred. These trends are consistent with prior literature. Therefore, we postulate that banning heading from soccer will have limited effectiveness as a primary prevention mechanism (i.e. in preventing

[concussion](#) injuries) unless such a ban is combined with concurrent efforts to reduce athlete-athlete contact throughout the game," the study concludes.

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