

Header Restriction Policy in Youth Soccer Shows Promising Impact on Concussion Rates

SAN DIEGO (March 10, 2025)—A new study presented at the 2025 Annual Meeting of the [American Academy of Orthopaedic Surgeons](#) (AAOS) examined the impact of a policy implemented by the United States Soccer Federation (USSF) to address youth players heading the soccer ball. Researchers found that the policy was associated with a decrease in soccer-related concussions; however, female players experienced a higher proportion of concussions than their male counterparts.

Soccer is one of the most popular youth sports in the United States and worldwide, and it's estimated that 3.9 million children play organized soccer in the U.S. each year.^{i,ii} The incidence of [concussions](#) in youth soccer is estimated to be 0.19 to 0.28 per 1,000 athletic-exposuresⁱⁱⁱ or 0.5 concussions per 1,000 playing hours.^{iv} Soccer-related concussion injury mechanisms include accidental contact with another player or field equipment, such as a goal post or the field, and intentional contact between the head and the ball in a technique called a header. Because of growing concerns regarding repeated head trauma, in 2016, the USSF banned headers for athletes under the age of 10 and limited athletes aged 11 to 13 to practicing headers for 30 minutes per week.

"We wanted to assess the impact of this policy on our patients," said Eugenia Lin, MD, resident at Mayo Clinic Arizona. "While policies are important, we don't always have the data to determine the effectiveness. This study aimed to analyze the long-term implications of the policy across different age groups, especially in light of growing concerns about traumatic brain injury and chronic traumatic encephalopathy, a progressive brain disease linked to repeated head injuries, in contact sports like football."

"[Pediatric Concussion Injuries in Soccer: Emergency Department Trends in the United States from 2012 to 2023](#)" is an epidemiological analysis utilizing data from the National Electronic Injury Surveillance System (NEISS) to analyze trends in soccer-related injuries relative to other injuries from soccer. The research team identified a 25.6% relative risk reduction in soccer-related concussions as a percentage of all soccer-related injuries presenting to the emergency department between 2020 to 2023 compared to 2012 to 2015.

Further breakdown of the data revealed distinct concussion trends pre- and post-policy implementation periods and concussion trends from 2012 to 2023 based on age and gender, providing insight into the policy's differential impact across demographic subgroups. Highlights include:

Concussions according to time frame

- Prior to the policy being enacted, there was an 8% proportion of concussions from 2012 to 2015.
- From 2020 to 2023, the proportion of concussions in relation to other injuries decreased to 6%, noting a relative risk reduction between time periods.

Concussions according to age

Soccer-related injuries and concussions were stratified by three age cohorts from 2012 to 2023 and data demonstrated an increase in soccer-related injuries and concussions as players got older.

- There were 8,793 total soccer-related injuries and 431 concussions (4.9%) in players 6- to 9-years-old.
- A total of 23,275 soccer-related injuries were reported in players 10- to 13-years-old, of which 1,527 were concussions (6.6%).
- A total of 26,907 soccer-related injuries were reported in players 14- to 17-years-old, of which 2,397 were concussions (8.9%).

Concussions according to gender

- Female players experienced fewer overall soccer-related injuries than male players, but a greater proportion of their injuries were concussions.

- Female players presented to the emergency department for 21,040 soccer-related injuries between 2012 and 2023, of which 2,010 were concussions (9.6%).
- Male players were seen for 37,935 soccer-related injuries, of which 2,345 were concussions (6.2%).
- The proportion of concussion diagnoses for both male and female players was lowest in 2023, at 4.3% and 7.8%, respectively. The highest annual proportion of concussion diagnoses was 8.4% for male players and 10.5% for female players, both in 2012.

“Although not all concussions result from headers, a measurable percentage still do, and it is encouraging to observe a trend indicating a decline in concussion rates,” said Anikar Chhabra, MD, MS, FAAOS, senior author, associate professor and director of Sports Medicine at Mayo Clinic Arizona. “While we cannot attribute this reduction solely to policy changes, these data suggest that these regulations may positively impact different age groups and time periods. Now that physicians, athletic trainers, coaches and parents understand the long-term implications of concussions, it is crucial to continue refining and reinforcing evidence-based policies that prioritize player safety and injury prevention.”

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2025 AAOS Annual Meeting Disclosure Statement

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