Even without heading, high school soccer players face concussion risk, study finds

By Sasha Harris-Lovett 7/14/2015

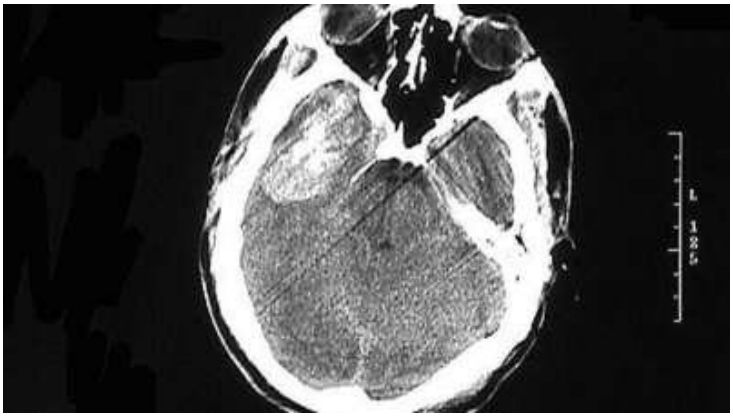
Most of the concussions sustained by high school soccer players aren't the result of heading the ball, new research shows. Instead, most head injuries come from athlete-to-athlete contact, the kind of rough play that is against the rules.

The study, published this week by the journal JAMA Pediatrics, also found that girls seem to be at higher risk of getting concussions than boys.

The findings challenge the conventional wisdom that heading the ball is the most dangerous part of soccer. Though heading was the most common single activity that led to a concussion, the majority of concussions -- 69% for boys and 51% for girls -- came from crashing into another player while defending, goaltending, chasing a loose ball, receiving a pass or dribbling down the field, the researchers reported.

Only about one-third of boys' concussions and one-quarter of girls' concussions happened while heading the ball.

"If you ban heading, yes, you will prevent some concussions in soccer, perhaps as much as 30%," said Dawn Comstock, an epidemiologist at Colorado School of Public Health at the University of Colorado Anschutz Medical Campus. "But if you simply enforce the existing rules of the game, reduce the aggressive play and limit the amount of athlete-athlete contact, you would actually prevent many more concussions."

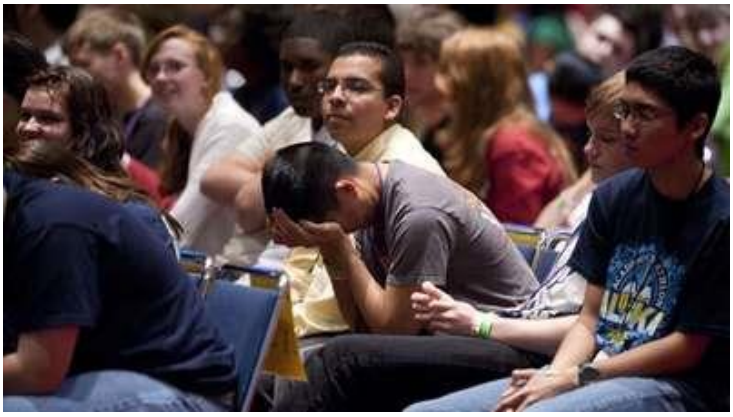


Full coverage: Concussions

The rest of the concussions came from slamming into a playing apparatus, like a goal post (29% of those for girls and 17% of those for boys), or from banging the head on the ground (19% for girls and 13% for boys).

Female athletes were more likely to get concussions than males, researchers found. Girls averaged 4.5 concussions per 10,000 games or practices, while boys averaged only 2.78 concussions per 10,000 games or practices.

"Consistently in gender comparable sports like soccer and basketball, where girls and boys play by the same rules using the same equipment, we see higher rates of concussion in girls," Comstock said. "Nobody honestly knows why."



After concussions, kids face persistent difficulties with school

But the researchers have some theories. It could be that girls have less neck strength than boys, so their brains get more jostled by an impact to the head, Comstock said.

Another possibility is that girls don't actually get more concussions than boys do, she said. Rather, girls may be more likely to notice the symptoms of concussions and report them to their coaches. Additionally, adults who spend time around student athletes may be more attentive to the health of female players than of males.

Comstock and her research team based their calculations on data reported by high school soccer coaches from 2005 to 2014 as part of the National High School Sports-Related Injury Surveillance Study. They used a random sample of 100 high schools from across the nation to determine the proportion of players who got concussions during school-sanctioned soccer practices or games, as well as what the athletes were doing when they received the head injury.

Nearly 800,000 high school students of both sexes played on school soccer teams in the United States in 2014, up from only about 50,000, all male, in 1969, the study noted. And as the game has become more popular, it has also become more dangerous, with concussion rates rising for both male and female players. Previous studies have demonstrated that soccer matches have become rougher over time, with fewer fouls and penalties called for illegal player-to-player contact.

The most effective way to cut down on concussions — for both male and female players — would be to reduce the amount of physical contact between athletes, Comstock said.

"We don't have to allow soccer to turn into football," she said. "There will always be some athlete-athlete contact while soccer is played. But a large amount of the athlete-athlete contact that's currently happening is technically against the rules of the game."

Roger Blake, executive director of the California Interscholastic Federation, which governs high school sports in the state, agreed with that assessment.

"The rules are there," Blake said. "The game can be physical, but the officials have to make those calls to keep it from getting overly rough."

If referees are going to make errors, he added, they should "err on the side of safety for these kids."

Parents can help by making sure their children are playing for a coach who doesn't encourage overly aggressive behavior and in a league that hires referees who appropriately call fouls and give penalties when players are too rough, Comstock said.

Despite the risks, playing a sport like soccer is good for kids, she said.

"The long-term negative risks of an inactive lifestyle — obesity, cardiac disease, diabetes — those are much more concerning than the very small likelihood that any individual soccer player will be seriously injured," she said. "We want more kids to play sports more often. We just want to keep them as safe as possible while they do so."