

# Fewer U.S. high school athletes play football amid concussion fears

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(Reuters Health) - Participation in high school football has been steadily falling in recent years amid mounting concerns about the potential for traumatic brain injuries to lead to lasting health problems, a U.S. study suggests.

Overall, participation in high school sports has surged from less than 4 million student athletes in 2001 to almost 4.6 million last year, researchers report in *JAMA Pediatrics*. But participation in football peaked in 2008 at 1.11 million athletes, and then declined almost 5 percent to 1.06 million players by 2017.

“This decline is associated with media attention focused on concussions or brain injuries among football players,” said study co-author Dr. Chris Feudtner of the Children’s Hospital of Philadelphia and the Perelman School of Medicine at the University of Pennsylvania.

News reports about football and brain injuries - one indication of public awareness about the health risks of head injuries on the field - started becoming more common in 2009 and increased each year through the end of the study.

“We are witnessing a large shift in behavior likely due to media coverage,” Feudtner said by email.

If the 8 percent increase in football participation from 2001 through 2008 had continued through the end of the study period, there would have been about 184,000 additional students playing this sport by 2017, researchers estimated.

The absence of these players may have avoided between 6,700 and 14,000 concussions during the last football season in the study, researchers calculated, based on a season with 10 games and 60 practices.

News reports in recent years have highlighted a number of health problems associated with what's known as chronic traumatic encephalopathy (CTE), which is linked to the type of head-to-head hits that have long been a part of tackle football at both the amateur and professional level. Among other things, CTE is thought to cause aggression and dementia.

CTE can only be diagnosed by examining brain tissue during an autopsy. It is suspected in dozens of former high school, college and NFL players including Hall of Fame linebacker Junior Seau and Pro Bowl safety Dave Duerson, who both committed suicide.

The current study wasn't a controlled experiment designed to prove whether or how increasing awareness about CTE or media coverage of football injuries may have impacted participation at the high school level. It also wasn't designed to examine the health effects of brain injuries or collisions on the field.

Still, this isn't the first research to link increased awareness about concussion risks to a decline in football participation among children and teens, and parents' fears about brain injuries are likely contributing to a decline in participation, said Anthony Kontos, a researcher at the sports medicine concussion program at the University of Pittsburgh Medical Center.

The current study, however, may not have accurately estimated any resulting changes in the number of brain injuries because it didn't look at the large number of youth players in non-scholastic leagues like USA Football and Pop Warner, Kontos, who wasn't involved in the study, said by email.

“This study does suggest a shift to other sports,” said Dr. Monica Vavilala, director of the Harborview Injury Prevention and Research Center in Seattle.

“While at the outset, this might seem like we have solved the problem of sports related concussion, this is not necessarily the case because other sports are also associated with concussion such as hockey, soccer, and basketball,” Vavilala, who wasn’t involved in the study, said by email.

It’s also not clear how many athletes might have opted out of football only to select other sports that also have a risk of concussions, said Dr. Paul Echlin of the Elliott Sports Medicine Clinic Burlington in Ontario, Canada. Head injuries are a risk with all sports played in close quarters at high speeds that involve a ball or other projectiles, Echlin, who wasn’t involved in the study, said by email.

But parents should still urge teens considering tackle football to consider another sport instead, Echlin advised.

“No child should be ethically allowed to participate in tackle football,” Echlin said.

SOURCE: [bit.ly/2GllTU7](https://bit.ly/2GllTU7) JAMA Pediatrics, online March 12, 2018.

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