

# New study shows TBI laws effective at reducing rate of recurrent concussions

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Since 2014, all 50 states and the District of Columbia have enacted one or more traumatic brain injury (TBI) laws, more commonly known as concussion laws. These laws often include mandates to remove athletes from play following an actual or suspected concussion, requirements to be cleared to return to play, and annual education of coaches, parents, and/or athletes regarding concussion signs or symptoms. A recent study from the Center for Injury Research and Policy at Nationwide Children's Hospital done in conjunction with researchers from Colorado School of Public Health at the University at Colorado and Temple University used data from a large, national sports injury surveillance system to determine the effect of state-level TBI laws on trends of new and recurrent concussions among US high school athletes.

The study, published today in the *American Journal of Public Health*, showed that the rates of new and recurrent concussions initially increase after a law goes into effect. "This is what we want to see," explained Ginger Yang, PhD, MPH, senior author of the study and principal investigator in the Center for Injury Research and Policy at Nationwide Children's. "Most TBI laws require athletes, athletic trainers, and/or coaches to report all suspected and/or actual TBIs and concussions. So what happens is that after a law is enacted you see an initial increase because more people become aware of the symptoms and signs of [concussion](#). Many concussions that were going unreported or undiagnosed before are starting to get reported."

Approximately 2 ½ years after the law is in place the rate of recurrent

concussions shows a significant decline. This demonstrates that the laws are having an impact. "We were pleased to see that the laws are getting people to report initial concussions and are reducing the rate of recurrent concussions," said Dr. Yang, also a faculty member at The Ohio State University College of Medicine. "The laws are a great first step but there is still work to be done. We need to do a better job of finding ways to prevent concussions from happening in the first place."

The study looked at TBIs in high school athletes that competed in at least one of nine sports (boys football, boys wrestling, girls volleyball, boys and girls soccer, boys and girls basketball, boys baseball, and girls softball) between fall 2005 through spring 2016. During this time period, there were an estimated 2.7 million reported concussions in these 9 sports, or about 671 concussions per day, or about one every two minutes. Of the reported concussions, about 89 percent were new and 11 percent were recurrent (a repeat concussion in an [athlete](#) that has already had at least one other concussion). Concussions were more frequent among male athletes, in football, and during competitions. Football had the highest average annual concussion rate, followed by girls' soccer and boys' wrestling. Males had a higher average annual concussion rate than females. However, when comparing the rates in gender comparable sports (basketball, soccer, baseball/softball), females had almost double the annual rate of concussions as males.

Provided by Nationwide Children's Hospital

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