Medical Xpress

Study: Concussion rate in high-school athletes more than doubled in seven-year period

May 6 2014, by Emily Caldwell

Concussion rates in U.S. high-school athletes more than doubled between 2005 and 2012, according to a new national study using data on nine team sports.

Overall, the rate increased from .23 to .51 concussions per 1,000 athlete exposures. An athlete exposure is defined as one athlete participating in one competition or practice.

The increase might appear to sound an alarm about sports safety, but the researchers suspect the upward trend in reported concussions reflects increased awareness – especially because the rates went up the most after the 2008-09 academic year.

Around that time, states began passing legislation promoting education about concussions and setting "return to play" guidelines for youth sports. Media coverage about head injuries in professional athletes has also increased over the last five to 10 years.

"It's scary to consider these numbers because at first glance it looks like sports are getting more dangerous and athletes are getting injured more often," said Joseph Rosenthal, clinical assistant professor of physical medicine and rehabilitation at The Ohio State University and lead author of the study. "This study is observational so it doesn't offer any proof about why the rates are going up. But I think in reality it's showing that

concussions that were occurring before are now being diagnosed more consistently – which is important."

A concussion is an injury to the brain that produces a transient loss of brain function with symptoms of dizziness, lightheadedness, confusion, headache and vision changes. Typically, nothing will be seen on imaging. Recovery usually occurs within a short time, but previous research has suggested that high-school athletes take longer to recover than do older athletes, and that even teenage athletes are at risk for repetitive head trauma.

The study is published online in the *American Journal of Sports Medicine*.

Rosenthal and colleagues analyzed data from the High School Reporting Information Online (HS RIO) sports injury surveillance system. The system contains data from a representative sample of 100 U.S. high schools that have at least one certified athletic trainer on staff.

Between 2005 and 2012, the system captured 4,024 concussions suffered by athletes in nine sports: boys football, boys and girls soccer, girls volleyball, boys and girls basketball, boys wrestling, boys baseball and girls softball.

Among the injuries tracked by HS RIO, reportable concussions were those that required medical attention and resulted in a restriction on athlete participation for one or more days after the day of the injury. Criteria were expanded in the 2007-08 school year to report concussions regardless of play restrictions. Concussions were diagnosed by the athletic trainers using their expertise, as well as any physician consultation.

The researchers calculated the rates by dividing the reported number of

concussions by the total number of athlete exposures for each sport. In the time frame studied, HS RIO contained almost 11.3 million athlete exposures for the nine team sports.

In addition to the overall doubling of concussion rates, the rates of these head injuries increased significantly in five sports: football, boys basketball, boys wrestling, boys baseball and girls softball. The other four sports showed upward trends in concussion rates, but based on statistical analysis, those increases could have occurred by chance. Football had the highest concussion rate among these nine sports.

Rosenthal, a physician who treats non-athletes with concussions and other brain injuries at Ohio State's Wexner Medical Center, noted that concussions affect much more than just the ability to play sports.

"A lot of injured athletes don't want to come out of games or stop practicing because they don't want to lose their position. But they can have symptoms that can last for an extended time period that can affect day-to-day life, school and personal relationships – they can experience irritability, pain, difficulty concentrating and sleep problems," he said. "Furthermore, if they continue to play while symptomatic, they are at risk for a second impact that can lead to severe disability and death. If you have symptoms, you've got to rest your brain and prevent further injury in order to recover."

Tracking these injury rates over time will enable clinicians, coaches, parents and athletes themselves to understand what risk factors influence changes in concussion rates and explore new ways to protect young athletes, he said. This initial study, Rosenthal said, suggests that "people are starting to recognize the seriousness of concussions and how important it is to treat them appropriately.

"Our theory is that more people are looking for concussions, and athletes

, parents and coaches are being educated on the symptoms and importance of removal from participation, as well as treatment. There is a greater emphasis on monitoring for injury."

Provided by The Ohio State University

Citation: Study: Concussion rate in high-school athletes more than doubled in seven-year period (2014, May 6) retrieved 6 May 2024 from https://medicalxpress.com/news/2014-05-concussion-high-school-athletes-seven-year-period.html