



Concussion Is Serious

No one should be asked to “take one for the team.”

Concussion is a common and potentially very serious injury. An estimated 136,000 high school students experience concussions during each academic year. While football-related injuries make up about half of these concussions, other contact sports such as soccer, basketball, and baseball contribute a sizeable share as well.

Concussion is caused by a head injury that is significant enough to damage the brain. The injury (and subsequent damage) can range from very mild to extensive enough to lead to death. Multiple concussions can have long-lasting effects on memory and school performance. The American Academy of Neurology (AAN) recently updated its Position Statement on Sports Concussion, highlighting the importance of taking concussion seriously.

An important paper published in the *American Journal of Sports Medicine* in December 2010 lends strong support to the AAN's position. This paper evaluates the management of high school concussions in the 2008-2009 academic year. The authors analyzed information entered into the High School Reporting Information Online injury-surveillance system (HS RIO), which collects information from around the country on high school athletes participating in nine sports: football, boys' and girls' soccer, boys' and girls' basketball, wrestling, baseball, volleyball, and softball. Certified athletic trainers from 100 schools entered information online about the sport, date of injury, age, gender, level of competition, type of injury, type of symptoms, duration of symptoms, and date returned to play. If computerized neuropsychological testing was used to evaluate for memory and concentration problems in injured athletes, this information was recorded as well.

A total of 544 concussions were recorded by the HS RIO over the 2008-2009 academic year. The majority (51.7 percent) occurred in varsity athletes. Most of these (68.5 percent) occurred during competition rather than practice. Concussion was caused by contact with another

player 76 percent of the time, most commonly due to head-to-head collisions. Concussion symptoms included headache in 94 percent of athletes, amnesia for the event in 24 percent, and loss of consciousness in only 5 percent. While symptoms resolved by three days in over half of the athletes, they persisted for four to six days in 20 percent and lasted longer than a week in 15 percent.

Younger players tended to take longer for symptoms to resolve. Athletes who were evaluated using computerized neuropsychological testing were less likely to return to play in one week than athletes who did not have this type of evaluation.

This study makes several important points. A common misconception is that concussions always cause loss of consciousness. This study shows that this is not so. Computerized neuropsychological testing is a sensitive tool for assessing concussion damage and provides information that cannot be obtained by other means. Players cannot safely be returned to play until they are back to normal, because the risk of more serious damage is high if a second concussion occurs soon after the first. Finally, younger athletes tended to take longest to recover, suggesting that special care needs to be taken to evaluate whether younger athletes can return to play.

High school athletes look to coaches, trainers, and parents for guidance. It is the responsibility of everyone in these young peoples' lives to help them compete safely. Concussion is serious business. No one should ever be asked to “take one for the team.”



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Take good care,

Robin L. Brey, M.D.
Editor-in-Chief