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Head games

Concussions are on the rise among high school athletes and girls are especially vulnerable to the injury, which can cause serious damage

November 6, 2007

BY [LORI RACKL](#) Staff Reporter

At soccer practice last month, Bri Clark went up for a header -- something the 16-year-old LaGrange girl has done countless times before.

Except this time, Bri didn't hit the ball. She hit the back of her teammate's head.

» [Click to enlarge image](#)

Mexico's Maria de Jesus Castillo heads the ball with United States' Abby Wambach.

(AP)

High school sports and concussions

"Both of us fell down and were dizzy," said Bri, who's spent six years on the Windy City Pride soccer club. "She kept playing, but I went off the field. I was really dizzy and couldn't concentrate."

Bri had a concussion, a brain injury that results from a violent blow or shaking. Getting "dinged" can spark a slew of symptoms: headache, dizziness, confusion, loss of consciousness. It causes temporary -- or potentially permanent -- disturbances in brain function.

Research to be published next month in the Journal of Athletic Training suggests that unlike other sports-related injuries, concussions are on the rise among high school athletes. Girls appear to be especially vulnerable, logging higher concussion rates than boys in sports played by both sexes.

Researchers at Ohio State and Nationwide Children's Hospital in Columbus, Ohio, analyzed injuries among U.S. high school athletes participating in nine sports: boys' football, soccer, basketball, baseball and wrestling, and girls' soccer, basketball, volleyball and softball. They estimate that in the 2005-06 academic year, high school athletes suffered 135,901 concussions -- or 9 percent of all sports-related injuries.

Some of the upswing in concussions might be the result of today's high school athletes being bigger, stronger and faster than their predecessors. Most concussions occur through player-to-player contact. Experts speculate another possibility is that coaches and athletes know more about the importance and symptoms of these brain bruises than they did a decade ago, meaning they're more likely to report the injury.

The study found that girls were more prone to get their proverbial bell rung than boys were. Female soccer players had a 68 percent higher rate of concussion than their male counterparts. In basketball, girls were 200 percent more likely than boys to have a concussion.

"We were a little surprised to see the higher rates among girls," said the study's senior author, Dawn Comstock, who thinks a couple of factors might explain the discrepancy. In general, boys have stronger neck muscles, which act as a shock absorber so the head doesn't get jarred as severely.

"And there may be some socio-cultural aspects going on," Comstock said. "Unless the person is knocked unconscious, we often have to rely on the athlete to tell us what's wrong. Traditionally, boys have been taught to suck it up for the team and fight through the pain. They may not be as willing as girls to report the symptoms of concussion."

Playing through the pain is the worst thing you can do when it comes to concussion, said Dr. Preston Wolin, who specializes in sports medicine at the Neurologic and Orthopedic

Institute of Chicago. Wolin has seen plenty of these brain injuries as team doctor for local high school, college and professional athletic organizations.

"The brain needs time to recover," Wolin said. "If an athlete tries to go back and play too soon, they're at increased risk of another concussion. And the chance that the second concussion will be more severe is greatly increased."

If athletes hit their head and appear "out of it," there's a good chance they have a concussion, Wolin said. They should stop playing and get checked out by someone knowledgeable about concussions, which don't necessarily appear on MRI or CT scans. They should be reintroduced to the sport gradually, once it's clear all symptoms have subsided.

A new way to tell if athletes are ready to return is by gauging their performance on a neurocognitive screening tool called ImPACT. Athletes take the computerized test before they're injured so they have a baseline score as a comparison in case they get hurt later in the season. Doctors at Rush University Medical Center are using the computer software, and the Chicago Institute for Neurosurgery and Neuroresearch last week announced it's giving ImPACT to two Chicago high schools: St. Ignatius and St. Rita.

As long as there are contact sports, there will be concussions. But athletes can take steps to reduce their risk. To safely head a soccer ball, for example, players should keep their head and neck still -- locked together as one unit -- while moving their body toward the ball. In football, the sport that caused the most concussions, certain helmets, such as Riddell's Revolution, have been shown to decrease the incidence of concussion. Some studies have indicated that the Full 90 Headguard offers similar protection to soccer players, but Wolin is skeptical.

"I don't think there's any convincing scientific evidence it works," he said.

After suffering two concussions playing soccer, Bri Clark recently decided to start wearing the Full 90.

"It helps make me feel protected," said Bri, a sophomore at west suburban Nazareth Academy. Despite the risk of another injury, she has no intention of giving up the sport she loves.

The study's authors hope parents will feel the same way.

"We have an epidemic of obesity in the U.S., and physical activity is key to combat against that," Comstock said. "We definitely don't want to scare parents away from letting their kids play sports."

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