

After a concussion, when can teens return to the football field?

On a cool October morning, still nearly an hour before sunrise, Mychal Shaw emerges from his bedroom. He pulls a Lee's Summit North High School shirt over his head and joins his family in the kitchen for a morning prayer.

"We pray that you keep him safe in his football game tonight and let the angels watch over him," his mother Ryana says as she does each week on Mychal's game days.

A year ago, Mychal suffered a concussion in a game that rendered him temporarily unable to walk or speak. Memory loss followed, forcing him to drop two high school classes, while extreme sensitivity to light and sound prevented him from attending his team's games, even as a spectator.

This season, though, he's back on the field, a senior for the Broncos.

Watching Concussions Closely

Nearly 1,500 high school football players in Missouri suffered concussions in 2012, and most of them returned to action within two weeks, according to Missouri high school officials.

The attention given to concussions has never been more intense, prompting coaches, parents, schools, lawmakers — everyone — to be hypersensitive to head injuries and their symptoms.

But it's what happens afterward that is less precise, because it is not clear when a high school player is ready to return to the football field after suffering a head injury.

"I think we all worry about sending a kid back out there too soon. Any doctor who says otherwise is lying," said Greg Canty, director of the Center for Sports Medicine at Children's Mercy Hospital in Kansas City.

"You like to practice medicine based on evidence that's supported with medical studies. We don't have that here," he said.

Second-Impact Syndrome

There were 17 deaths across all levels of football in 2013, according to figures gathered annually by the National Center for Catastrophic Sport Injury Research.

All 17 were high school athletes.

Doctors said they are even more concerned with "second-impact syndrome," an often fatal condition that occurs when a player suffers a second concussion before the first has healed.

"Once you have the symptoms, the brain is more fragile," Canty said. A second hit could "result in potentially catastrophic injury," he said.

Adolescents face the most danger of second-impact syndrome because their brains are still maturing, says Brett Osborn, a neurosurgeon who has studied concussions in sports.

High school athletes suffer concussions at nearly twice the rate of college players, the Institute of Medicine and National Research Council determined last October.

But the treatment they receive is inconsistent.

When To Return

Brian Mahaffey, who wrote an article about concussions in the journal *Missouri Medicine* last year, advises that high school athletes should be symptom-free for seven days before returning to the practice field. An athlete of middle school age should wait 10 days after all symptoms have subsided, he said.

Osborn, on the other hand, recommends that a child sit out at least six weeks after suffering a concussion, even if it's mild.

State law isn't so cautious.

Missouri says a player must be removed from competition for only 24 hours before evaluation, while Kansas has no such timetable.

A player who has suffered a concussion immediately becomes more likely to suffer another one.

As a result, Mahaffey suggests to some patients they quit football, though determining that proper stopping point is often guesswork.

A Mom Forbids Football

Barb Kunz's son Alex took a helmet-to-helmet hit during an Olathe South practice in 2013. He was knocked backward but never lost consciousness.

A day later, Alex was having trouble comprehending basic ideas in math class. He remembers walking to the cafeteria for lunch feeling confused.

As he sat down for lunch, he shook his two milk cartons — as he did every day. But this time, he had opened the cartons before shaking them. Milk sprayed everywhere.

“It took me a good half second before I realized I was showering myself with milk,” he said. “I was soaked.”

Alex left school 20 minutes later to see a doctor, who diagnosed him with a concussion.

His mother forbade him from ever taking the field again.

His brother Andy was also pulled from the Olathe South team.

Taking Computerized Assessments

On the first play of his 2014 season, Liberty High School junior Josh Watson sniffed out a Lee's Summit West running play. He sprinted toward the line of scrimmage, where he met tailback Ryan Williams.

Bang.

The ensuing hit was jarring enough to send Watson to the turf, where he remained before needing a trainer's assistance to walk to the sideline.

Watson begged the team's trainers to return the game, but they thought he displayed symptoms of a concussion. That spelled the end of his playing time in the season opener.

"That decision is out of my hands. It's not me making the call," Liberty coach Chad Frigon said. "And that's a good thing. As a coach, I want to win and put him back in the game."

The process of rejoining the team — which Watson did the following Wednesday, after it was determined he did not have a concussion — has new guidelines.

Several area high schools in Missouri and Kansas, as well as a handful of middle schools, have added a new program. Players take a computerized assessment before the season, which gives them a baseline score.

If a player is later thought to have had some sort of head injury, he takes the test again and the scores are compared.

"Computerized tests can offer a false confidence," Canty said. "A player passes the test and he's often determined to be fine. Many times we need more and better evidence to support that determination."