

Head games: How football is striving to make the sport safer

[Mark Vest](#)



Clawson High will use Riddell's InSite Training Tool and Smart Helmet Technology this season. Pictured is a Riddell smart helmet with the alert monitor. The system can show coaches the amount of impact a player takes to the head in real time.



Concussion numbers in Michigan have been going down in football since the MHSAA started tracking head injuries prior to the 2015-16 season. Pictured is the inside of Riddell's smart helmet, which has sensors to detect impact data for each player.

Photo by Donna Agusti

FOOTBALL HEAD-INJURY TREND			
Year	Total participants	Head injuries	Percent
2015-16	39,520	1,939	4.91%
2016-17	37,715	1,684	4.47%
2017-18	36,989	1,522	4.11%

*Includes 11-player and eight-player teams. More information on every MHSAA sport can be found at mhsaa.com. Numbers for 2018-19 were not available at press time.

METRO DETROIT — When West Bloomfield High football coach Ron Bellamy was diagnosed with his first concussion, he sat back and thought to himself, "I've felt like this before."

The former University of Michigan standout and NFL wide receiver said he was diagnosed with five concussions in his playing career but knows there were probably countless others that went undetected.

It got to a point where he wasn't feeling like himself, and he didn't have the same passion for the game when he decided to hang up the cleats and retire in 2008.

"When I didn't feel normal — different mood swings, feeling depressed — the game wasn't fun anymore. You're thinking about your next hit," Bellamy said.

Moving in the right direction

Concussions and head injuries have long been a part of football, but over the years, more information and increased education have been key to improving the overall safety of the game.

"(The) big thing is making the coaches aware, parents aware, athletic directors — it's not, 'Oh, he just got his bell rung; take two aspirin and get back in there,'" Birmingham Seaholm medical first responder Bill Watson said. "My role as a first responder is to educate the parents, educate the coaches that, 'Hey, (it's) a serious injury!'"

Earlier this year, the Michigan High School Athletic Association came out with a new set of rules for football practices to limit "collision" practices and lean toward "thud" practices.

The MHSAA defines a collision practice as "executing full tackles at a competitive pace, taking players to the ground."

A thud practice is "full speed, contact above the waist only, with no

player being taken to the ground."

Collision contact is limited to 30 minutes per week during the regular season, while thud contact is unlimited.

The new rules go along with the MHSAA's concussion protocol.

Starting in the 2015-16 season, the MHSAA required all programs in every sport to report head injuries, defined as when an athlete had to be withheld from activity after showing signs of a concussion.

Since tracking began, there has been a decrease in the number of reported head injuries in football each season.

"I think everyone is watching much more to make sure that they are catching if an athlete shows symptoms, getting that athlete out of action, not letting that athlete get back onto the field until he or she has been checked out and cleared," MHSAA Media and Content Coordinator Geoff Kimmerly said.

As a medical first responder, Watson said his role is to "do a proper evaluation and go from there."

He's been a first responder for 36 years and noted that the amount of attention paid to concussions has changed significantly since he originally began.

Some of the ways he can evaluate for a concussion include finding out if an athlete has a headache; is nauseous, dizzy, sensitive to light or has ringing in the ears; and via memory tests.

According to Susan Musto, a nurse practitioner at the acute care

concussion clinic at Beaumont Hospital, Royal Oak, the length of recovery from a concussion lasts anywhere from seven to 21 days, but it is repeated concussions that are a bigger cause for concern.

“Usually, repeated head blows or repeated concussions over time can cause longer-term problems with their cognition as they age,” Musto said. “Some studies are showing that they can have Parkinson’s disease, Alzheimer’s disease. But that’s not the general population who have suffered a concussion.”

First line of defense

It’s not just the MHSAA and medical personnel that have to be aware of concussions. Coaches also play a big role in monitoring head injuries.

Coaches have been zeroing in on tackling techniques to make the game safer.

“The big problem with kids is they (want to) duck their head,” Troy Athens coach Billy Keenist Jr. said. “I don’t care if you’re in peewee, little league, middle school, high school, college or the NFL, whenever you duck your head, bad things happen. So, we really emphasize ‘head up, see what you hit.’ ... That’s our main philosophy.”

Two of the leading techniques that coaches have been adopting are USA Football’s “Heads Up tackling” and “Hawk tackling,” which was brought to the forefront by Seattle Seahawks head coach Pete Carroll and his former assistant Rocky Seto.

Both techniques emphasize getting the head out of the way of any contact. It’s more of a rugby approach.

"We teach tackling 100 percent different," Clawson High coach Jim Sparks said.

For example, when a ball carrier is running on an angle, the old technique of tackling was for the defender to put his head in front of the runner to cut him off, using the helmet like a wall to stop momentum while simultaneously wrapping the carrier up with the arms.

"We don't do that anymore. Now your head goes behind that guy," Sparks said. "You don't teach anything where the head is going to be involved in the tackle."

Since teaching a different way of tackling, Troy High coach Chris Frasier said the varsity team has had "zero concussions" over the last two years, and the JV team has had one.

"We've kind (of) eliminated the head from all the tackles," Frasier said. "It's definitely made a profound difference on the way the kids make contact, but it also has helped keep them safe."

With 30 years of coaching experience, Grosse Pointe South coach Tim Brandon has seen firsthand how the game has changed.

"It's been an amazing evolution," he said. "Football's not what it was 50 years ago, 20 years ago. It's a completely different game now."

The future is now

With rules and protocols constantly changing, helmet manufacturers have had to create products that will help the game continue its journey to become safer.

Two of the top helmet manufacturers in the business, Riddell and Detroit-based Xenith, have made moves toward creating better products.

Riddell has been collecting data about head impacts for more than 10 years to help produce the InSite Training Tool and Smart Helmet Technology.

Every smart helmet has a sensor that detects how much impact the player is taking to the head and can give an instant reading. It can also be set to give the coach a notification if one of his players takes a hit that surpasses a designated threshold.

"Then it compares that (reading) to both the national norm for your position and your playing level of the over 6 million impacts we have now collected, as well as your personal history," sales manager of Riddell smart helmets Matt Shimshock said.

As of right now, 26 high schools in Michigan are using Riddell's InSite Training Tool and Smart Helmet Technology.

Clawson is starting to use it this season. Sparks said it will help him keep an eye on his players, see which drills are safer than others, and allow him to show parents just how much impact their child is taking and hopefully alleviate any fears.

"I can be down on one end working with receivers, but down on the other side, the linebackers are working. If I get an alarm, I can at least go check on him," Sparks said. "It doesn't prevent concussions, but it helps me monitor each kid and plan practice accordingly."

With the wide variety of impacts that can occur in football, Xenith developed what Vice President of Product Innovations Grant Goulet referred to as “shock technology.” It’s a way of controlling the force of the impact.

“So, you have this really kind of simple structure in the helmet positioned around key locations,” Goulet said. “We have 18 of these in our new Xenith Shadow, for example, positioned around the head in really designed and engineered positions to make sure that we’re really controlling that energy optimally.”

‘Creating future community leaders’

Sparks is the vice president of the Michigan High School Football Coaches Association. He’s proud of the progress the sport has made.

“Other than baseball and not running over the catcher, I can’t think of another sport — and concussions happen in every sport — where the rules have been changed and the game has been altered to address the concussion issue,” he said.

It’s also a topic that hits close to home for Bellamy. He’s intent on keeping his players from having the same experience as him.

“We’re ambassadors as coaches, and we’re creating future community leaders, which is a great thing, but these kids can’t be any of that if we’re negligent to them and not teaching them how to play the game properly,” Bellamy said.