

HIGH SCHOOL SPORTS

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Death raises safety issues, experts say

A Greenville (N.C.) high school football player's case could lead to NCHSAA guidelines involving concussion-related injuries.

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Spencer Elliott holds high-tech sensors that will be used to measure the force of impact in West Mecklenburg High football players' helmets. ROBERT LAHSER – rlahser@charlotteobserver.com

More Information

- [West Meck football players get high-tech help](#)

A new program provides high-tech equipment to monitor and evaluate head injuries of football players for one Charlotte-Mecklenburg Schools team.

Twenty West Mecklenburg High players have an extra horseshoe-shaped pad inside their helmet, containing six sensors that measure the force of impact that can lead to concussions. Each sends a reading to a wireless computer monitor on the sideline. The precise location and degree of head movement in an impact can be measured and analyzed. An athletic trainer and physician receive data instantly on the sideline.

The Department of Sports Medicine & Special Events at Carolinas Medical Center received a \$70,000 grant from Kohl's department store, which funds the helmet project and made concussion-assessment software available to the 18 CMS high schools with sports programs.

Another feature of the project is the Immediate Post-Concussion Assessment and Cognitive Testing (IMPACT). It determines if an athlete can safely return after suffering a head injury. IMPACT is a computer-based training program that measures cognitive function in athletes with concussions, including attention span, working memory, non-verbal problem-solving and reaction time. The program is open to CMS athletes in all sports.

Charlotte-Mecklenburg Schools athletics director Vicki Hamilton says CMS uses either a certified athletic trainer or sports medicine first-responder at every football practice and game. She said CMS also has a partnership with OrthoCarolina, which provides a volunteer medical physician and a physician's assistant at every varsity football game. Also, she said, there is a MEDIC ambulance and two EMTs at all varsity games. Cliff Mehrtens

- **Second-impact syndrome**

Second-impact syndrome happens when a second brain injury occurs before a previous brain injury has healed. The second injury may occur hours, days or even weeks after the first injury.

SIS is rare but often fatal. Any blow that jars the head could cause SIS, which happens mostly to younger people, about high school age or below.

Experts suggest that anyone experiencing symptoms including loss of consciousness, dizziness, vision problems, memory loss or persistent headaches following a blow to the head should see a physician before returning to a physical activity.

Here are the qualifications required to be a licensed athletic trainer in North Carolina compared with those of a first responder, known in some other school districts as a first-aid coach or injury management specialist.

Licensed trainer

Four-year degree from an accredited school in sports medicine or athletic training.

National status as certified athletic trainer (passing Board of Certification exam, certification in emergency cardiac care, CPR for professional rescuers).

Two affidavits of good moral character.

Written protocol approved by supervising physician, filed with N.C. Medical Board (outlines duties trainer is permitted to perform).

Signed agreement from physician and trainer to abide by protocol.

25 hours continuing education per year.

First responder

CPR certification.

First-aid certification.

Two 20-hour courses in injury prevention and management through organizations such as N.C. Coaches Association.

20 hours continuing education per year.

Sources: N.C. board of athletic trainer examiners, N.C. athletic trainers' association

Jaquan Waller, a football player at J.H. Rose High in Greenville, N.C., should not have been allowed to play in a game Sept. 19 that resulted in his death, a leading concussion researcher and several licensed athletic trainers say.

During a home game against Wilmington's Hoggard High, the junior running back collapsed on the sideline

shortly after being tackled – a blow that caused severe brain swelling. By the next morning he was brain-dead, according to a state medical examiner's report, and was removed from life-support the same day at Pitt County Memorial Hospital.

Waller had suffered a concussion during practice on Sept. 17, the medical examiner's report showed. Dr. M.G.F. Gilliland determined that Waller had died accidentally as the result of "second impact syndrome," a rare condition that can occur when two relatively minor head injuries occur within a short period of time. It typically happens to young athletes.

In Waller's case, "neither impact would have been sufficient to cause death in the absence of the other impact," Gilliland stated in a written report that was released last week. According to the report, Waller had suffered "a mild (Grade 1) concussion, a brief change in the level of consciousness," during the practice.

Pitt County school system officials say they didn't know Waller had suffered a concussion Sept. 17, two days before the game, until the medical examiner's report came out.

Waller's death, the third in five weeks involving a high school football player in North Carolina, has raised concerns about whether athletes at some schools are getting adequate care.

N.C. law allows local schools to hire unlicensed personnel to act as trainers at athletic events, as long as they don't claim to be licensed.

About half of the state's 460 public high schools employ or have access to licensed athletic trainers, compared with a national rate of 42 percent, said James Scifers, president of the N.C. Athletic Trainers' Association, which advocates that all high schools use licensed trainers.

Many concussion guidelines call for an athlete to be symptom-free for at least seven days after suffering a Grade 1 or 2 concussion, according to the National Athletic Trainers' Association's position statement on managing concussions.

The NATA position statement also makes clear that anyone who shows concussion-like signs has suffered at least a mild concussion and that anyone younger than 18 "should be managed more conservatively."

"Can someone suffer a concussion on Wednesday and be healed on Friday? Possibly," said Dr. Kevin Guskiewicz, who co-authored the position statement and heads research of sports concussions at UNC's Department of Exercise and Sport Science.

"Should you ever return a 16-year-old to a football game three days after having a concussion? Absolutely not. Never," Guskiewicz added.

Probe is ongoing

The Pitt County school system is investigating Waller's death, and until district officials are done, they won't discuss in detail Waller's symptoms after being injured in practice on Sept. 17.

Heather Mayo, a spokeswoman for Pitt County Schools, and Superintendent Dr. Beverly Reep stressed that the word "concussion" was first used by the medical examiner.

The Pitt County school system refers to Bill Grimm, the teaching assistant who evaluated Waller's condition Wednesday, as an "injury management specialist," or what other schools call a "first responder." Grimm declined to be interviewed for this story.

Mayo said that after being tackled during practice Sept. 17, Waller was taken to Grimm, who used a Sport Concussion Assessment Tool to evaluate the player. According to Mayo, Grimm called Waller's mother to inform her that Jaquan had been tackled and was "shaken by it."

"He was coherent," Mayo said. "According to Grimm, he had (Waller) count backwards from 100 in increments of 10. Jaquan did that fine. (Grimm) had him say the months of the year backwards, and he did that fine. He asked him where he was. He did that fine."

It's unclear what other discussion Grimm might have had with Waller.

Grimm decided that Waller should be sent home but that he didn't need immediate medical attention, according to Mayo. Grimm also told Waller's mother to let him know if she chose to seek medical attention, Mayo said.

Waller's mother picked him up from school, and Mayo said that district officials didn't know yet whether she had taken him to a doctor or whether he had been cleared by a doctor to play Sept. 19.

Waller's mother could not be reached for comment.

Waller returned to school Sept. 18, and Grimm checked in with him, according to Mayo. Waller told Grimm he was "feeling good" and participated in a light practice, Mayo said. Waller also went to school the next day, and by "all accounts ... seemed himself," Mayo said.

As for whether Waller should have been allowed to play, "that's part of this investigation," Reep said.

Guidelines considered

Based on national and state standards, Waller would have been tested more stringently by a licensed trainer.

A copy of a Sport Concussion Assessment Tool, available on the International Olympic Committee's Web site, includes a cognitive assessment – asking the athlete to recite five words – and a more random numerical test than increments of 10. "If you ask someone to count backward, you don't use 10. That's too easy. I usually use seven," said James Bazluki, a licensed trainer who spent 10 years working in that role at East Carolina University.

"... What should have occurred is that (the player) should have been referred (to a physician)," said Scifers, the N.C. Athletic Trainers' Association president.

In its position statement, the NATA states: "If an athlete shows concussion-like signs and reports symptoms after a contact to the head, the athlete has, at the very least, sustained a mild concussion and should be treated for a concussion."

The statement goes on to say that athletes younger than 18 are at a greater risk because their brains are still maturing, and should be treated more conservatively.

"Most concussion scales minimally hold the athlete out for at least one week after their symptoms subside," said Josh Canipe, the head athletic trainer at Hoggard High, was on the opposing sideline Sept. 19 at Greenville Rose when Waller collapsed. "So, minimally, if he was truly symptom-free on Thursday (a day after the practice injury), he should not have returned to activity at all until the following Thursday."

Kevin Allran, chairman of the state licensing board for athletic trainers, said he has dealt with seven football players who've had concussions this season at Marvin Ridge High in Union County, where he's the head trainer.

None had lost consciousness, but none had returned to play without a physician's consent. Allran said he'll allow a player back on the field if he's symptom-free for five days, even after physically exerting himself.

Greenville Rose had at least one physician on the sideline for the game in which Waller collapsed. It is unclear whether he knew beforehand that Waller suffered a head blow two days earlier.

Hoggard High's Canipe described the second blow, which led to Waller's death, as "nothing really that significant" by football standards.

On a running play in the second quarter, Waller fumbled the ball when a Hoggard player's helmet struck the ball. There wasn't any head-to-head contact, Canipe said, and both players left the field under their own power.

Shortly after returning to the sideline, he dropped to the ground.

The N.C. High School Athletic Association, which does not provide concussion treatment guidelines to schools,

expects to make recommendations to member schools after consulting with Guskiewicz. The NCHSAA does have guidelines for heat-related injuries and weight loss by wrestlers. Charlie Adams, executive director of the NCHSAA, said his staff would support whatever Guskiewicz suggests.

That would be the hiring of licensed athletic trainers at every school and “baseline” testing of every athlete before a season, Guskiewicz said.

“Sometimes it takes a tragedy to bring change,” he said.

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