

His research helps limit severe sports injuries

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Fred Mueller takes a methodical approach, whether he's collecting data about catastrophic sports injuries or baking bread or pruning trees in his front yard.

Last week, after Tropical Storm Hanna rumbled through the region, he wasted no time before tending to his yard. He couldn't resist.

"No sooner was the rain done and he was in the yard picking up the limbs and blowing the drive," says Jo Ann Mueller, his wife. "That's Fred in everything he does."

This thoroughness, this tireless attention to detail, is evident in Mueller's everyday work. As a pioneer in sports injury research, he has earned the respect of peers throughout the country.

Mueller, 71, a researcher and professor of exercise and sport science at UNC-Chapel Hill, spends his days researching catastrophic injuries. He tries to investigate the cause of every sports-related death or serious injury of a student athlete in high school or college.

He focuses on such cases as the death of Chapel Hill High School football player Atlas Fraley last month after a scrimmage. No cause has been determined, but it has been reported that the 17-year-old called 911 after the practice complaining of dehydration and full-body cramps.

Reports by Mueller, a former Tar Heel football player and coach, help shape safety guidelines for high school and college athletes around the nation. He is the founder and director of the National Center for Catastrophic Sports Injury Research based at UNC and funded by the National Collegiate Athletic Association.

In October, the center will release its annual report to the National Federation of State High School Associations and the NCAA. The research helps those organizations make decisions about rules and equipment changes that could improve safety standards for all organized sports.

Information on catastrophic injuries in football has been collected since the 1930s. But it was Mueller who started collecting the data for all sports, in 1982.

Bob Colgate, assistant director of the high school federation, says Mueller's diligence in expanding the research has contributed to fundamental rules changes.

"What he has done has had a profound impact on our rules-writing process and I think also the NCAA's, too," Colgate said. "It's not just stuff being collected, numbers posted and updated and thrown on a shelf. It is being widely used."

His reports are considered unique and important. He studies an average of 30 cases per year involving catastrophic injuries.

"That registry has been a constant since 1982," says Dr. Robert C. Cantu, chief of neurosurgery at a hospital near Boston and a friend of Mueller. "There is no other one like it."

Catastrophic injuries, as defined by Mueller, are those that result in death or permanent disability, as well as serious injuries -- those to the head or neck -- that an athlete recovers from.

As a graduate assistant in 1968, after two years as UNC assistant football coach, Mueller worked under UNC professor Carl Blyth, who started collecting football injury data at the school.

Death, paralysis

That year, there were 36 student-athlete deaths nationally -- 26 at high schools -- and 30 cases nationwide in which students were paralyzed. Mueller says the natural reaction was: "What the heck is going on?"

"You start looking at that and you say, 'Oh my God,'" he says. "A 15-, 16-, 17-year-old kid dying. Or permanent paralysis, in a wheelchair for the rest of his life."

Improvements slow

He saw how long it took for football standards to change. It wasn't until 1978 that collegiate rules regulating helmets were updated as a result of neck-related injury reports, and not until 1980 in high schools.

Mueller, who releases his annual football report in April, says he decided to collect information about all sports because there were too many unexplained deaths outside of football. For example, he wondered why a number of pole vaulters were dying.

Closer examination revealed that the pole vaulting pit was too small and the poles too long, he says.

Mueller played high school football in his native Iselin, N.J., and earned a football scholarship in the mid 1950s at UNC. It was his concern for athletes that drove his passion for research.

It drives him today.

In his campus office, Mueller computer-searches for information about injured athletes every day. He sets his Google alerts with key words to gather clues, hoping newspaper articles will lead him to information.

When he finds an incident involving a high school athlete, he forwards initial information to the NFHS officials, who place a request with the local high school association. If the family of the player involved volunteers to provide details, information is then passed back to Mueller.

Mueller tries to identify the cause of the accident -- recording the player's height and weight, the heat index from that day and other details -- so he can make a recommendation on how to prevent it from happening to another athlete.

With the soft sounds of Verdi filling his office, he compiles data on his PC and files paper copies in color-coordinated folders. Two steel cabinets hold reports dating back to 1982 and research going back to the 1930s.

"He's just very thorough, very accurate," Cantu says. "It's not possible to be perfect in this area. Some [cases] probably do slip through the cracks, but certainly not because he hasn't tried to do everything to avoid that."

Heat stroke deaths

Mueller continues to be outspoken about heat-related injuries and deaths. In most cases, he says, they are

preventable, because years of scientific study have provided coaches and trainers with protocols to help protect students.

“I think we’re in a real crisis time, because there have been 33 heat stroke deaths since 1995,” he says. “Already in 2008 there are six that I know of -- four high school and two college.”

Colgate, the NFHS assistant director, says Mueller is passionate about preventing heat-stroke deaths. “We still shouldn’t see those taking place,” Colgate says. “When he says those are preventable, they are, because his recommendations are very straightforward, but we still have people who aren’t adhering to those recommendations and using common sense.”

Kevin Guskiewicz, who followed Mueller as the chairman of UNC’s exercise and sport science department, isn’t surprised by the strong stance on heat-related deaths.

He calls Mueller a no-nonsense, task-oriented person who addresses issues head-on.

“He does not sugar-coat anything,” Guskiewicz says. “He tells it like he sees it, like he believes it.”

Guskiewicz says some people rally around Mueller’s football coach’s demeanor. Others find it rough.

The trim Mueller -- who once trained for triathlons and still walks regularly -- is in the last year of a phased retirement. After he initially retired, the university brought him back to teach on a limited schedule for three years. Even when he sets down his chalk, he’ll continue to do research for his center.

That will leave more time for yard work.