Varsity players Aaron Lowe and Mike Cutrer. *Ivy Ashe*

Concussions: Island Serves as Model in Tackling Sports Injuries

Ivy Ashe *Thursday, October 4, 2012 - 11:14pm*

Junior defensive end Aaron Lowe's head hurt after the Sept. 15 football game against Bristol-Plymouth. It wasn't the score of the game causing the headache — the Vineyard had just taken an exciting 28-26 win. Rather, Aaron had suffered a mild concussion after taking a hit during a routine play. Donald Herman, the seasoned high school football coach, noticed Aaron seemed a bit confused after the game and sent him to see athletic trainer Tania Laslovich. The next day Ms. Laslovich gave Aaron a cognitive test to determine the severity of the concussion. He went to his doctor to be checked for further symptoms and was cleared to play football shortly afterwards.

General awareness of concussions has risen in recent years in the wake of a pending lawsuit against the National Football League by over 1,000 former players (all concussion victims) and the suicide deaths of several former NFL players, later found to have chronic traumatic encephalopathy, a neurodegenerative disease associated with concussions. In 2011 Major League Baseball created a seven-day disabled list

category specifically for concussions. Later in the year, the National Basketball Association adopted its first concussion management policy. All NBA players were required to take a cognitive baseline test at the beginning of the season which could then be used in the event of a concussion to gauge when brain functions had returned to normal levels.

In the summer of 2010, Massachusetts passed a law establishing concussion management protocol for high school athletes that largely parallels that of the NBA requirements. The Martha's Vineyard Regional High School, which has had a concussion protocol in place since January 2007, was already well ahead of the curve. (In professional sports only the National Hockey League, which first used baseline testing in 1997, started its concussion policy earlier.)

"Our school is kind of like a pioneer in this whole program, at least in this area," Ms. Laslovich said as she stood on alert at a junior varsity field hockey game earlier this month. "Schools on and off-Island are calling us to find out how we do it. They're following our model, which is really kind of nice."

The concussion issue is being taken seriously by all high schools in the region. A Cape Cod Times scouting report noted that Bristol-Plymouth won its first game of the season by forfeit because its competitor, Boston English, hadn't filed its concussions paperwork on time.

On any given day on the Vineyard, Ms. Laslovich can be found taping ankles, splinting fingers, handing out ice packs or supervising a workout. Chances are she has also followed up on a student who is recovering from a concussion. Ms. Laslovich and athletic director Mark McCarthy estimate that around 35 athletes each year suffer the injury, a small percentage of the 669-person student body and also a small percentage of the overall number of injuries that come across the training room table. But whereas a broken bone manifests as a physical injury, a concussion creates disruptions in the brain's chemical signaling, causing symptoms such as nausea, double vision, poor memory recall, sensitivity to light and noise, dizziness and an ever-present headache.

"The reason why I started [the current program] in the first place is I see a lot of kids that . . . break their wrist and they get all sorts of accommodations in school for an injury because they can't write," Ms. Laslovich said. "And yet you [had] a kid that's injured their brain, and they can't think, they can't remember, and they get nothing."

Junior Isabelle Wadleigh and athletic trainer Tania Laslovich worked together for several months as Isabelle recovered from a concussion. —

That's changed since the start of cognitive testing, called the ImPACT (Immediate Post-Concussion Assesment and Cognitive Testing) program, which provides the hard data that Ms. Laslovich needs to work with teachers and guidance counselors for the academic accommodations. Every athlete at the school must take a baseline ImPACT test before they can play a sport. The results are specific to the individual and account for different brain processes, particularly for those with learning disabilities. That way, in the event of a concussion, the effects are measured not against a broad norm, but a personalized one. After suffering a concussion, the athlete is tested again to see if the baseline score has dropped. During recovery, the athlete continues to retake the test until the baseline is reached.

"What's been understood is that we know there are certain things that predictably will be affected . . . that's typically short-term memory and reaction speed," said Dr. Neil McGrath, a neuropsychologist and clinical director of Sport Concussion New England, in a telephone interview. Dr. McGrath has provided additional concussion consulting for the regional high school since 2008. "So the focus with ImPACT is wanting to measure the things that we expect to be most affected," he said. "Before cognitive testing came along, the only thing we really had was talking to someone about symptoms and checking balance and

coordination a little bit."

Of course talking about symptoms remains important. No student will ever be cleared to resume activities, either athletic or academic, without first being cleared by his or her physician. Mr. McCarthy said one of the biggest misconceptions about the ImPACT testing is that it's a stand-alone resource.

"Getting [and passing] the test is only the beginning of return," he said. "It's not the end-all and be-all."

Before he took on the athletic director position, Mr. McCarthy was the director of the concussions clinic at the Connecticut Children's Medical Center.

He stressed that there's no magic right or wrong number of concussions.

"I've had kids where they have one and they're done; they just never recovered," he said. "So you make sure each kid is being treated until their symptoms fully resolve and are fully recovered." About 80 per cent of kids recover in two weeks, he said.

"That's the hardest thing to do is tell kids and their parents — not as much the coaches; I think the coaches are pretty good about it — is to back off, let your brain recover, and then go back," said Dr. Melanie Miller, a pediatrician at the Martha's Vineyard Hospital who last spring attended a conference on the subject of concussions co-sponsored by Harvard Medical School and Children's Hospital in Boston. Ms Laslovich and Island emergency room physician Karen Casper also attended. Children and adolescents are even more susceptible to adverse concussion effects because their brains are still developing, and the worst thing an athlete can do is return to play too soon.

"Kids in this age group are notorious for not telling you what they're feeling, because they [feel] they're invincible and they can do anything," Ms. Laslovich said.

But since the ImPACT program began, students have increased awareness of the issue, Mr. McCarthy said. "[They know] if you get hit in the head, you have to see Tania."

Don Costello of Edgartown was watching a junior varsity lacrosse game last season when his son Danny, an attackman, was lifted completely off the ground during an illegal hit. When he fell back against the field, the whiplash gave him a concussion. Danny quickly popped back up after the hit, but took himself out of the game afterwards, recognizing something was wrong.

He sat out for three weeks after he was diagnosed, going through ImPACT testing and meeting with his physician Dr. Michael Goldfein. He was unable to watch television or use a computer for the first week ("like a life sentence," Mr. Costello said), experiencing a somewhat frustrating recovery process when all the freshman wanted to do was get back on the field.

It's not easy for any athlete to admit weakness. "I was proud of him to come out and say 'I'm not feeling right,'" Mr. Costello said.

"We're still learning a lot about concussions and until we know more we're going to be overprotective of our young people," Dr. Miller said. "Brain damage is damage; it's not temporary."

She spoke from the perspective of one who has seen the worst side effects of that damage.

One of the NFL players who committed suicide was her friend. She and Dave Duerson, a former All-Pro safety for the Chicago Bears, attended junior high and high school together. Mr. Duerson was "brilliant," she said. "He was offered a Rhodes [scholarship] and he turned it down to play in the NFL." Mr. Duerson shot himself in the chest last February. His brain was donated to the ongoing CTE study.

"So from a personal standpoint I've seen how a young bright person can be turned to dysfunction and dementia, and it's not fun to see," Dr. Miller said. "And our job as a community . . . is to protect our

young people and keep them safe."

A 2011 study published in the American Journal of Sports Medicine found a 0.24 incidence rate of concussions (24 concussions per-thousand athlete exposure) among high school athletes in 12 different sports. Football players had the highest incidence rate, while football and boys' lacrosse had the highest number of concussions. The second highest rate of incidence was girls' soccer. Concussions were observed in all 12 of the sports in the study.

Dr. Melanie Miller, "Brain damage is damage; it's not temporary." —

"It's not just football," Dr. Miller said. "It's the soccer, players, it's the ice hockey players, and for some reason this year a lot of softball players [last season, four junior varsity softball players had concussions, more than the number the varsity football team had]."

"We see more now, not because there [actually] are more, but I think because more are reported," Ms. Laslovich said.

No sport is immune — cross country players trip over branches and fall, sailors get clocked by a boom, swimmers collide with the wall — and even regular activities can result in a concussion. Donald Herman had his first in third grade, when a friend's little brother hit him in the head with a rock.

Isabelle Wadleigh, junior co-captain for the varsity girls' soccer team, has had two concussions in her life, both of which came not during a game but during practice. Neither was from contact with another player. Once during basketball warm-ups, Isabelle lost her balance while backpedaling (and, she admits, going too fast because she was racing a friend), falling backwards into a sitting position. Her upper body continued backwards; her head hit the hard floor. A couple of years later, as a freshman, she was demonstrating a drill, got bumped to the ground, and again whiplashed her head and neck in the same way.

"The second one was way worse," she recalled. "It was a harder hit, and I blacked out a little bit." She was out of school for two weeks. "The teachers were really nice about it; everyone was really helpful," she said.

The effects of concussions are felt more strongly among young women than men, according to a 2011 Michigan State University study.

Senior Mike Cutrer, center for the varsity team, suffered a concussion last year during a game against Somerset. He was out for two weeks, unable to even look at a white board in his classroom because it made him see double. But he would never think about quitting the sport he has played since he was in Pop Warner.

"It's just being part of a team," Mike said. The players aren't necessarily all best friends in the hallways of the high school, he explained, but "we're all together on the field."

And when it comes to concussions, the Island community is all together.

"I'm very happy to be part of that team," Dr. McGrath said. "Martha's Vineyard is really doing everything that we hope a school would be doing for concussion management."