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Keep kids off playing field after concussion, panel urges

By Elizabeth Simpson
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It wasn't just the dizzying pain that worried Sarah Cottrell when she got whacked in the head with a lacrosse stick during an April game.

She already had suffered two concussions playing lacrosse, and a doctor had advised her to drop the sport if she sustained a third.

"I knew if I got hit again, I'd be out for good," said Cottrell, 17, a Norfolk Academy athlete.

She kept quiet about the injury at first but came clean the next day when she woke up with a headache and nausea.

Sure enough, her doctor benched her.

That advice is being formalized in new guidelines released today by the country's leading group of pediatricians.

The American Academy of Pediatrics recommends that youngsters with sport-related concussions be pulled from a game immediately. They should not return to the field that day, even if they feel better, and they should be cleared by a doctor before playing again. The guidelines in the journal

Pediatrics also recommend that athletes quit the sport entirely if they sustain multiple concussions or have symptoms - such as headaches, lack of focus or nausea - for more than three months.

Sport concussions have generated a lot of discussion recently. They are of particular concern when children are involved, as their brains are still developing. Long-term effects are not fully understood, but some studies show that repetitive head trauma can lead to problems with focus, memory and learning.

Repeated concussions also are being linked to brain and nerve disorders like Alzheimer's and Lou Gehrig's disease.

Earlier this year, Virginia legislators passed a law requiring medical clearance before student athletes return to a game, and that parents be informed when their children sustain injuries. School districts are required to draft guidelines about identifying and handling concussions by July 1, 2011.

Virginia Beach schools, for example, have a concussion management program that includes taking baseline cognitive data when students begin a sport, which can be used for comparison if a concussion occurs.

Dr. Joel Brenner, a pediatrician who directs the sports medicine division at Children's Hospital of The King's Daughters in Norfolk, said student athletes should never "tough out" a head injury.



Figure 1 - On the advice of Dr. Joel Brenner, Norfolk Academy student Sarah Cottrell quit playing lacrosse after sustaining a third concussion in April. (David B. Hollingsworth | The Virginian-Pilot)

SIGNS & SYMPTOMS

- Headache
- loss of consciousness
- Amnesia
- Nausea
- Vomiting
- Balance problem
- Visual problems
- Fatigue
- Sensitivity to light and noise
- Feeling mentally foggy
- Difficulty concentrating
- Difficulty remembering
- Forgetful of recent information
- Confused about recent events
- Answer questions slowly
- Irritable
- Sadness, nervousness
- Drowsiness
- Sleeping more/less than usual
- Difficulty falling asleep

Source: American Academy of Pediatrics

The new guidelines recommend that athletes be restricted from sports until symptoms disappear, and that other physical and brain-engaging activities also be curtailed. Doing homework, using a computer, even playing video games and watching TV can worsen the symptoms.

While symptoms usually go away in seven to 10 days, some take weeks or months to fade. Pediatricians are concerned about students who sustain a second head injury before recovering from the first one, which can cause "second-impact syndrome." High school athletes are at higher risk than older athletes of this condition, which can cause brain swelling and even death.

A condition called "post-concussion syndrome" is also a concern, in which several symptoms - such as headache, dizziness, fatigue, irritability, difficulty concentrating, emotional problems and insomnia - persist longer than a week.

Sometimes student athletes may not even be aware they've suffered a concussion. A loss of consciousness occurs in less than 10 percent of such injuries, according to the Pediatrics report.

Sarah Cottrell suffered her first concussion in May 2009. She fell during a game, slamming her head against the ground. When she stood up, she felt dizzy and was pulled from the game.

During the next few days, she continued to have a headache, and also was sensitive to light.

The following November, she traveled to Washington, D.C., for a tournament. While Sarah was trying to score a goal, an opponent tried to "check" her by hitting her lacrosse stick against Sarah's.

The stick hit Sarah's head instead.

That time, she blacked out for a couple seconds.

"I was kind of out of it," Sarah said, "but I was so mad I got up and passed the ball to someone and they scored. I walked off the field right after that."

She slept all the way home. Once there, she felt tired and nauseated. When she tried to focus on math problems during a tutoring session, she felt sick to her stomach.

"I felt like I could sleep for days. I didn't know what was wrong with me."

After a parent of another player mentioned Sarah had been hit in the head during the game, her parents took her to the doctor, who referred her to Brenner, a sports medicine specialist.

He examined her and gave her some cognitive tests, including a computer test of memory, reaction time and attention. Brenner advised her to stop playing until symptoms were absent for a full week. He also told her to take time off from school, and that even using a computer or watching TV could worsen symptoms.

"I couldn't do anything that engaged the brain," Sarah said.

She missed a week of school. When she started playing lacrosse again, she knew another injury could bench her, but it didn't change her attitude to the game.

"I'm an aggressive player, and I wasn't going to stop living my life," Sarah said. "I'm the kind of person who is going to play as hard as I always do."

Girls lacrosse doesn't require helmets like boys lacrosse, because girls are prohibited from hitting other players with their sticks. Sarah's mother, Rebecca Cottrell, thinks girls need more protection than the standard mouth guard and goggles, because "people don't always play by the rules."

In April, Sarah again got hit in the head with an opponent's lacrosse stick. She didn't black out, but she felt dizzy, so she told the coach she needed to come out of the game.

She didn't tell anyone that her head had started hurting again, thinking it would go away with a good night's sleep. It didn't. She woke up feeling nauseated, tired, hazy and headachy.

She went to her coach, who advised her to tell her parents. Once again, she landed in Brenner's office.

A second computer test showed poorer results than the test she took after her previous injury. Such exams, called neuropsychological testing, are a tool that doctors can use to help make decisions about treatment, Brenner said.

After discussions with Brenner, Sarah and her parents decided that she should stop playing lacrosse and field hockey, another sport she'd recently taken up.

Brenner said advising a student to stop playing is done on a case-by-case basis, depending on the severity of the injury, and the symptoms the student is exhibiting.

"It's not always met with agreement," he said. "There are times when the parents want them to continue."

But Brenner, who sits on the American Academy of Pediatrics council that drafted the new guidelines, asks students to think about their future. Even though long-term effects are not known, the short-term effects are serious enough.

"Their job is to go to school and get an education," he said. "If they have a concussion and their brain isn't functioning properly, they can't do that job."

Sarah had been elected captain of her lacrosse team. She'll continue to work out with her teammates, but she won't play in games.

"It's going to be hard to work out and not get to play," said Sarah, who plans to try out for the track team. "There's a part of me that wants to play."

But she does worry about the medical consequences, and not just for herself:

"If I went out on the field, my mom would have a heart attack."

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