

Concussion education program shoots for generational change



A teacher with the Halton District School Board leads students in a brainstorming exercise on concussions. PHOTO: HANDOUT/HALTON DISTRICT SCHOOL BOARD



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Concussions have been a frequent headline-grabber in recent years, as well as an increasingly regular occurrence among professional athletes in intensely physical sports like hockey and football. But how seriously are we taking these injuries?

According to Dr. Paul Echlin, we need to take a closer look at concussions. We need to understand the long-term effects and educate children about them so that they are identified early, treated, or prevented altogether.

Dr. Echlin, a sports physician and former hockey team doctor who has been studying concussions for years, says it's a complex injury that manifests itself in a variety of ways, with potentially life-altering effects. "It can change all the components of your brain function: memory, sensory perception, thought, concentration, light and sound sensitivity, all of those things," he says.

"It's usually temporary, but if [the injury] is repetitive, these symptoms will become chronic and they won't just disappear."

- [More information: Concussion](#)
- [8 things you should know about concussion](#)
- [Brain health: 10 things to know](#)
- [Brain health: FAQs](#)

A serious problem for children and young adults

Dr. Echlin, however, is particularly concerned about concussions in children and young adults. As their brains are still developing, the consequences of a [brain injury](#) are potentially more serious and far-reaching.

“Most of the neural tracks are laid down at birth,” he notes, “but the way that they branch out, the thickness of the coverings of the nerve tracks are developing until 18. So developing something in the mid-stage of growth, it can subtly change a person’s life.”

Even the short-term effects, such as the inability to concentrate, can put them out of school and keep them isolated from friends for prolonged periods of time.

The effects of multiple concussions can be devastating in the longer term. Dr. Echlin points to [research out of Boston University on retired football players](#) suffering from a condition known as chronic traumatic encephalopathy, which is caused by repeated brain injury. “They’ve seen chronic changes in the brain structure and end-stage dementia,” he notes.

Despite the potential severity of these injuries, the general public’s understanding of them remains lacking. It’s a problem that’s reinforced by some prevailing attitudes among those involved in intensely competitive sports such as hockey and football – attitudes that teach kids to “win at all costs,” ignore the symptoms if they’ve been hurt, to “rub dirt on it” and get back in the game. Attitudes that lead young athletes to dismiss a serious injury as simply “getting your bell rung.”

They’re attitudes that are frequently expressed by some of hockey’s most outspoken voices. Veteran hockey commentator Don Cherry, for instance, is unapologetic about the level of violence in hockey – and quick to attack some of those who have spoken out against it. [Cherry ignited controversy](#) in 2011, when called a group of retired NHL enforcers “pukes” and “hypocrites” for decrying the level of violence that has pervaded the sport.

Prevention through education



Dr. Paul Echlin

From Dr. Echlin's experience, he has learned not to expect adults to change their attitudes. The solution, then, is to teach children and young adults. And in Ontario's Halton Region, that's exactly what's happening. The Halton District School Board has just announced the Halton Student Concussion Education Project, a concussion education program that has been added to the curriculum for students in grades three, six and nine. According to the Halton Board's Associate Director of Education, Jeff Blackwell, Dr. Echlin was instrumental in the program's creation.

"The impetus was really Paul's research," says Blackwell. "What they're saying to kids is that it's a serious thing, there are a lot of ramifications and it's very important that you're aware of that...[We] want kids to be able to turn to their parents or coaches or best friend and say, 'I think I really hurt myself and I don't feel well. I don't want to participate any longer in this activity.'"

Essentially, the program is twofold: first, it's intended to put in place a protocol for educators and school administrators to deal with students who have been injured; and second is the educational component.

And that education is crucial, because what became apparent over the course of Halton's pilot program in 2013 was a lack of awareness that existed among most students.

"When we talked to our kids who were in it, they were really stunned," says Blackwell. "They didn't realize that there's potential for long-term effects here. I think a lot of people think it's just a half an hour or a night, that I get through the headache and the next day I'm fine. So we want to say to them, take it seriously because if you don't attend to them, you could have those long-term effects."

While Halton's program is the first of its kind, concussion education will soon make it to other jurisdictions as well. Ontario's Ministry of Education has mandated that school boards across the province introduce concussion education to their curriculums by 2015.

A new approach to professional sports

By influencing the next generation and raising awareness among young athletes, Dr. Echlin is hoping that attitudes towards the kinds of sports we play – and how we play them – will evolve as well. Hockey and football, he notes, are likely the most in need of change.

"There's no trying to sugarcoat the fact that these are dangerous sports that have to be modified," he says. "The game structures have to be modified so that the head contact does not occur at the epidemic rate that it occurs right now."

Dr. Echlin is optimistic, however, about the effects that education will have on these sports. "[It] will lead to the change in the games that we play," he says.

"If this new generation of people is educated early, they'll say, 'No, it's not worth my time to play a sport where I'm going to sustain multiple injuries to my head. If you change the sport so that doesn't happen, I'll play.' And they will change."

Concussions: Things you should know

- Concussion is a serious brain injury that results from the rapid movement of the brain within the skull.
- This movement can result in damage or disruption of the brain cell structure and metabolism
- Physical symptoms of concussion: headaches, dizziness, sensitivity to light and sound, loss of balance and coordination
- Cognitive deficits resulting from concussion: loss of memory or concentration
- Emotional changes resulting from concussion: depression, irritability
- Symptoms can be immediate or delayed
- Most concussions do not result in a loss of consciousness

- Long-term effects of concussion may include chronic traumatic encephalopathy (CTE), a degenerative brain disorder associated with athletes who have suffered repetitive brain trauma. Its effects take place over months or years after the last injury.
- Effects of CTE include: memory loss, confusion, impaired judgment, impulse control problems, aggression, depression and progressive dementia.
- Brain damage may not be visible from standard hospital-based MRI or CT scan; micro brain damage can be observed through advanced imaging techniques

Sources: Sports Concussion Library and Boston University CTE Center