

The 'hidden injury' in sports: research sheds light on concussions

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Star receiver Charles-Antoine Sinotte suffered a concussion during his last home game for the McGill Redmen in 2010. "It was like nothing I had experienced before," recalls Sinotte. "I felt like I was out of my body." Although he received medical attention and missed the rest of the game, he admits he downplayed his symptoms in order to play in the next game – his last before leaving McGill.

Two new studies recently published in the *Clinical Journal of Sport Medicine* co-authored by Dr. J. Scott Delaney, a team physician for the Montreal Alouettes, Montreal Impact, and McGill football and soccer, shed light on the most common form of head injury seen in [athletes](#). They suggest that concussions continue to be a "hidden injury" in sports, even in the face significant increased public awareness.

Minimizing and concealing concussion symptoms

"People have suspected for a long time that concussions are under reported by athletes. We examined how often this actually occurs and the reasons why athletes choose to hide their concussions," says Dr. Delaney, who is also a sports medicine specialist and research director in the Department of Emergency Medicine at the McGill University Health Centre (MUHC) and an associate professor in the Faculty of Medicine at McGill University.

According to Dr. Delaney's research, which involved the surveying of 469 university athletes over a 12-month period, 20% of university

athletes believed they had suffered a [concussion](#) during this time and almost 80% of these concussed athletes decided not to seek [medical attention](#) and chose to continue playing despite believing they had suffered a concussion.

"The athletes' most common explanation was that they did not feel their concussion was serious," explains Dr. Delaney. "They believed it would not be dangerous to continue to play or practice. Most athletes know what should happen when they get a concussion – they will be taken out of the game. However, they are not always aware that a concussion, if not recognized and treated, can be extremely dangerous." Athletes who play or practice while they have symptoms of concussion are at risk of far more serious injury, including repeated concussions. This can lead to cumulative neurological damage and even, in the long term, cognitive impairment and depression.

"Coaches should be aware that their attitudes and behaviour towards concussed athletes may encourage players to conceal symptoms," says Dr. Delaney. "Our study found that some athletes did not reveal symptoms because they were afraid it would affect their standing with the team. The response of coaches and medical staff to concussion can have a significant impact on their players' immediate and long-term health."

As a former football player, Sinotte realizes the importance of understanding more about how concussion occurs and how athletes react to the injury. "It can be very hard to think long-term when you're an athlete, and focused on developing your sports skills," he says.

"Ultimately, though, student athletes have to realize that taking one or two weeks off after a concussion will pay huge dividends in their overall health. They have to learn to report concussion symptoms, trust medical staff and follow their advice."

Differences in the mechanisms of injury

In addition to studying athletes' response to concussion, Dr. Delaney and his colleagues conducted research into the mechanisms of concussion injury. They looked at 226 concussions that occurred over a ten year period in 170 university athletes (male and female) who played football, [ice hockey](#) or soccer.

Impacts to the side of the head or helmet were the most common location of impact resulting in concussion in all three sports. While contact with another player's head or helmet was the most frequent mechanism in football and soccer, contact with another body part or object was the most likely cause of concussion in ice hockey. About half the concussions in soccer were related to attempts to 'head' the ball.

"We also found differences in the mechanisms of injury for males and females within ice hockey and soccer," Dr. Delaney reports. "In ice hockey, concussions from contact with a shoulder were more common in males, while concussions from contact with the boards or the ice were more common in females. In soccer, female players were more likely to be concussed while trying to 'head' the ball. These differences may be due to differences in style and speed of play, rule differences or anatomic and biomechanical differences between the sexes."

More information: [journals.lww.com/cjsportsmed/F...
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