

CBC News

Concussion rate 'alarmingly high' in women's game

By Kristina Rutherford on November 18, 2008 6:36 PM



(Brian Bahr/Getty Images)

National team veteran Jennifer Botterill was sidelined for four months in 2004 with a concussion, and studies show she's far from alone. Jennifer Botterill couldn't drive a car without getting a headache. Bright lights and loud sounds made the symptoms worse. Physical exercise was out of the question.

The two-time Olympic gold medalist and member of Canada's women's national hockey team was suffering from the worst concussion of her career, one that kept her off the ice for four months. The cause: a full speed collision with another player at practice.

"It's one of the toughest injuries to deal with, because honestly, you just have to be so patient," says the Winnipeg native, a fixture on the national team for the past decade.

"Other injuries, you can be active and do active rehabilitation. All I could do was rest."

According to recent findings, Botterill is far from alone. A study of NCAA sports found women playing hockey were more than twice as likely as their male counterparts to suffer concussions. The female game even topped football in concussion numbers, according to the study.

"The honest answer is yes, this is a surprise," says Dr. Michael Czarnota, neuropsychology consultant for the Canadian Hockey League. "There's no fighting in women's hockey, there's no intentional checking. What's left? It's the unintentional collisions, or catching an edge, stepping on a puck or something like that. You take out the two largest contributors to bodily force, fighting and checking, and you still end up with rates that are equal to or higher than men's hockey.

"Why it happens, I think, is just supposition at this point."

Botterill brings up one of the popular theories: there may be more reporting in the women's

game. She says this after watching her brother Jason's pro hockey career cut short because of too many concussions.

"Obviously our game is still physical, but I don't think quite to the extent of men's hockey," she says. "For the men's game, in terms of their contracts, sitting out, that's pretty significant for them."

Women may be more susceptible to brain injuries, men might have stronger neck muscles to protect against the injury - these are other popular theories to explain why numbers may be greater in the women's game.

But as Czarnota notes, they're all theories at this point. More research is necessary.

"It's unknown; it's people pulling straws," he says.

He questions the NCAA study, because it looked at 15 varsity sports from 1988-2004, but women's hockey injuries were recorded only starting in 2000, so there's less data to draw from. Czarnota also pointed to another study that looked at concussion rates in the East Coast Athletic Conference over the course of a year, where men's concussion rates outnumbered women's.

"It's hard to know how stable that really is, how accurate it is," he says.

What doctors do know for certain is that concussions -- causes, symptoms and treatment -- are different for everyone.

"We can't apply adult expectations to high school athletes, and now we're discovering we may not be able to extend research from men's sports to women's," Czarnota says. "There has been some research to show that girls might take a little bit longer to recover than boys. To me it just reinforces the fact that we can't use a one-size-fits-all treatment approach. Everybody's going to recover differently."

Kim McCullough got her first bad concussion in her rookie year with Dartmouth College's women's hockey team. She scored four points that game, but doesn't remember anything that happened after she took a hit to the chin in front of the net. Symptoms set in on the bus ride home.

Now a coach, trainer and founder of Total Female Hockey, a program that works with women's teams from novice to national, McCullough contends the "alarmingly high" concussion rate in the women's game is a result of a lack of strength training and the fact that girls are never taught to take a hit.

"It makes sense from a coach and parent perspective, you think because there's no body checking, why you would teach somebody to take a hit?" she says. "But girls are getting hit all the time. It's the most awkward type of hit, hitting your own teammate, or the awkward falls. That's what's causing this higher concussion rate."

Whatever the cause, Czarnota says when he sits down with parents, coaches and players to talk about concussions, he explains "this is part of the game."

"You can wear a cage like they do in college hockey, and you're still going to have concussions. You can take fighting out of the game like they do in college hockey, and you're still going to have concussions. You can take checking out of the game like they do in women's hockey, and you're still going to have concussions.

"There is a risk that these kind of injuries can and do happen."

This is part 3 of Our Game's three-part concussion series.