

Concussion in the NHL: Where Do We Stand?

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Hockey players are tough and gritty athletes. Ask any veteran – hockey encourages a warrior mentality in which players are respected for masking pain through crashes, body checks, and fighting. What is the price of this brute style of play? The topic of concussion in the National Football League (NFL) has made headway in the media over the past decade after class-action lawsuits were filed against the concealment of the traumatic effects of NFL head injuries¹. However, less attention has been addressed to the incidence and long-term consequences of concussion in the National Hockey League (NHL).

This past February, 10-year veteran NHL defenseman Steve Montador was found deceased in his home at the age of 35 years old¹. A brain autopsy revealed chronic traumatic encephalopathy (CTE), a disease associated with memory loss, dementia, and depression. Steve Montador is likely not alone in this development amongst NHL athletes. Montador was the fifth NHL player to be diagnosed post-mortem with CTE, which supports current academic claims that repeat concussion places hockey players at high risk of developing CTE^{1,3-5}. The NHL made its first attempt to monitor concussion rates by launching the Concussion Program in 1997 to diagnose, assess, and track concussion in professional North American hockey⁵⁻⁷. Given its persistent impairment to professional careers, most notably to elite players like Sidney Crosby³, it is worthwhile to question what improvement the NHL has made with concussion.

The 1997 NHL Concussion Program required all NHL teams to submit standardized injury reports to document concussions diagnosed by team physicians⁵⁻⁷. Since 1997, NHL concussions have nearly doubled from 2.517/100 NHL games in the '97-98 season to 4.878/100 NHL games in the '11-12 season⁵. While some suppose that players are simply getting stronger, better, and faster⁷, other studies have demonstrated stability in the average NHL player height and weight since 1997^{5,8}. Why might concussion rates be on the rise? Currently, we do not seem to have an answer. Rule 48 was created during the '11-12 season and made body checks to the head illegal; however, concussion rates have not decreased since the enactment of the rule^{5,9}. As the Concussion Program continues to adapt with new knowledge regarding concussion in contact sports, the NHL should seek to establish a common protocol in the way concussions are both diagnosed and reported. Standardization of NHL concussion diagnosis and reporting would provide more accurate data on concussion trends in the NHL, which may currently be ambiguous. For example, the 1997 Concussion Program delegates the diagnosis of player concussions to team physicians – who themselves are under salary of individual NHL teams⁶. The NHL has not developed a standardized concussion diagnosis protocol, and its current definition of concussion includes a broad spectrum of symptoms open to the interpretation of individual team physicians⁶. And in regards to reporting, the NHL has not disclosed concussion data publically, rightfully due to protection of medical confidentiality^{6-7,10}. Thus, methodology of recording concussion rates has varied across several studies, ranging from media collection from sport websites such as *Rotoworld* or *The Hockey News*^{6,10-11} to independent reviews of digital videos of gameplay⁹.

Standardization of NHL concussion diagnosis, either through a third-party physician or by using established protocol such as the SCAT-2 is recommended. Possible solutions include implementing concussion grade scales for team physicians and an NHL concussion database that can be accessed with permission from the NHL for research purposes. These modifications should be considered before making formal changes to the rules of hockey, such as eliminating body-checking or changing the dimensions of ice rinks. These improvements would clarify our current understanding of concussion trends in the NHL and help us determine whether hockey is becoming more dangerous, or rather has an inherent concussion risk that participants should be made aware of.

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