

For NHL players, more fighting on the ice is linked to shorter lives

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Fighting is par for the course in professional ice hockey, but a new study

raises the question of whether it is shortening some players' lives.

The study, of hundreds of National Hockey League (NHL) players, found that those who were "enforcers" on the ice—that is, did a lot of fighting—tend to die at a younger age and from different causes than their peers.

Of 45 players who died during the study period, enforcers were about 10 years younger at their deaths compared to other players. And the causes were disproportionately from suicide, drug overdose, car accidents, or, in two cases, degenerative brain disease.

Experts stressed that the findings do not prove that frequent fights on the ice played any role in those players' deaths. Release of the study comes midway through the second-round of the NHL's Stanley Cup championship playoffs.

The study used fights and time in the penalty box as proxies for players' exposure to repetitive head impacts. There was no way to tell whether those who died had any [brain injury](#). And even if they did, the researchers said, it would not be possible to draw a straight line between the injury and the cause of [death](#).

"This study is just showing associations, not cause and effect," said lead researcher Dr. Charles Popkin, an orthopedic sports medicine specialist at Columbia University Irving Medical Center in New York City.

"But it does show that if you're an NHL 'fighter,' you're dying 10 years earlier, and from different causes than other players," said Popkin, who is also a team physician for U.S. Hockey.

He said his hope is that the findings "generate discussion" and encourage the NHL to think about ways to make the game safer for players.

To Popkin, that should include tougher penalties for fighting.

While many sports carry a risk of repeat head impacts and injury, the NHL is unique in implicitly sanctioning fighting, Popkin pointed out. Other pro leagues—including the National Football League, National Basketball Association and Major League Baseball—eject players for fighting, and dole out fines and suspensions.

In the NHL, players who brawl spend a few minutes in the penalty box. And it's broadly acknowledged that fans expect, and want, to see the spectacle.

Probably no NHL player could be considered timid, but certain players are enforcers—meaning intimidation, and fighting, are in the job description.

For the new study, published online May 10 in *JAMA Network Open*, Popkin's team compared former NHL enforcers with others players.

They started with data on more than 6,000 NHL players who were active between 1967 and 2022. The investigators identified a group of 331 enforcers who had at least 50 career fights on record. (The career average for all players was just under 10 fights.) They also pinpointed a group of 183 enforcers who averaged at least 3 minutes in the penalty box per game.

Each of those enforcers was compared against an NHL player who was similar—the same age, size, position and total number of career games—but not an enforcer.

Overall, there was no difference in the two groups' death rates during the study period, at about 4%.

But enforcers died at an average age of 47, versus 57 in the comparison group. And of the 21 enforcers who died, three died of suicide, two of drug overdose and two of [degenerative brain disease](#). In contrast, no player in the comparison group died of those causes; cancer was the most common cause.

Another four enforcers died in car crashes, versus one non-enforcer.

According to Popkin, the findings raise the question of whether there's a role for [chronic traumatic encephalopathy](#) (CTE) in enforcers' deaths. CTE is a form of progressive brain degeneration believed to be caused by repeated impacts to the head, over the course of years.

It has most famously been identified in some former pro [football players](#), including Frank Gifford and Junior Seau, through brain autopsies performed after their deaths.

CTE has been linked to manifestations such as personality changes, aggressive or impulsive behavior and depression.

But it's impossible to know whether any deaths in this study can be traced to CTE, said Dr. Jesse Mez of Boston University's CTE Center.

Mez said it is reasonable to assume that enforcers had more career head impacts than the comparison group. But without brain autopsy findings, it's hard to interpret what the causes of death could mean, he added.

In general, Mez said, the enforcers' causes of death were complicated and could be completely unrelated to past head trauma.

Steven Broglio, director of the University of Michigan Concussion Center in Ann Arbor, agreed.

As an example, he said that the career of an enforcer is punishing to the whole body, which may leave some retired players reliant on pain medication. There's no way of knowing whether the drug overdoses could have been related to that.

Beyond that, Broglio said, players drawn to the fight role may have personality characteristics such as impulsiveness and risk-taking that could have contributed to their causes of death.

None of that means that NHL brawls—or the general aggression of the game—are benign, either. While media attention has often focused on CTE and football, the disease has been identified in some former NHL enforcers who died at young ages.

The degree to which fighting might have contributed to those CTE cases is unclear. But Popkin noted that the issue is not limited to deaths from CTE.

Much more often, he said, repetitive head impacts might contribute to problems like chronic headaches, memory deficits and poor sleep.

For his part, Mez agreed that the NHL does not have to wait for fighting to be definitively tied to increased CTE risk.

"I think you could get rid of the fighting and make the sport safer for players," he said.

More information: Charles A. Popkin et al, Fighting and Penalty Minutes Associated With Long-term Mortality Among National Hockey League Players, 1967 to 2022, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.11308](https://doi.org/10.1001/jamanetworkopen.2023.11308)

The University of Michigan has more on [sports concussions](#).

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