

THE PENNSYLVANIA STATE UNIVERSITY
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Analysis of National Hockey League Statements and Actions Regarding Concussions and
Chronic Traumatic Encephalopathy (CTE)

SYDNEY SMICHNICK
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Reviewed and approved* by the following:

John Affleck
Journalism Department Head
Knight Chair in Sports Journalism and Society
Thesis Supervisor

Dr. Denise Bortree
Associate Dean for Academic Affairs, Professor in the Department of
Advertising/Public Relations,
Director of the Arthur W. Page Center
Honors Adviser

* Electronic approvals are on file.

ABSTRACT

Repeated scientific studies over the last 25 years conclude that major head injuries and concussions are the reason people develop chronic traumatic encephalopathy (CTE). When people think of concussions and CTE, they associate it mainly with football and the National Football League (NFL). However, there are many former players from the National Hockey League that have been diagnosed posthumously with CTE. This paper seeks to describe how the NHL's journey with the issue of concussions and the injuries suffered by current and former players. The research in this thesis points to the NHL having an extensive history of combatting claims of head injuries and concussions, and up to the present day, in which the NHL faces increasing pressure to take responsibility for players being diagnosed with CTE.

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Chapter 1

Literature Review

In order to fully understand how the NHL addresses concussions and CTE, it is necessary to explore each topic independently, in addition to other terms that will be discussed through this case study. Defining both concussions, CTE and other key terms will give background on how they work or come to be.

CONCUSSIONS

A concussion is a type of traumatic brain injury (TBI) that is caused by a bump, bruise or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth. Rapid movement causes brain tissue to change shape, causing brain cells to stretch and damage. Additionally, this damage that occurs creates chemical and metabolic changes in the brain cells, which causes it to be harder for cells to function and communicate. The effects of a concussion can be extensive due to the brain being the body's control center. Concussions are typically not life-threatening. However, the effects of one can change a life and the injury should be treated seriously. (Concussion Legacy Foundation, n.d.)

Since a concussion does not show on imaging, like an X-ray, CT or MRI scan, and there is not an objective test, like drawing blood, the signs and symptoms of a concussion are extremely important. A doctor diagnoses a concussion based on the results of a comprehensive examination, including an observation of the signs of a concussion and patients reporting

symptoms of a concussion appearing after an impact to the head or body. The signs and symptoms of a concussion are the brain's way of showing it is injured and not functioning normally. Concussion signs are what someone could notice about a person to determine if they have a concussion. Signs of a concussion can be obvious but also more subtle. Some common concussions signs include: loss of consciousness, problem with balance, glazed look in the eyes, amnesia, delayed response to questions, forgetting an instruction, confusion about an assignment, confusion of the game or opponent, inappropriate crying or laughter and vomiting. (Concussion Legacy Foundation, n.d.)

CHRONIC TRAUMATIC ENCEPHALOPATHY (CTE)

Chronic traumatic encephalopathy (CTE) is a brain disorder that is likely caused by repeated head injuries. It causes the death of nerve cells in the brain, which is also known as degeneration. CTE gets worse over time, and the only way to definitively diagnose it is after death during an autopsy of the brain. However, symptoms start to come over CTE patients, which allows medical professionals to assume that they have CTE. (Mayo Clinic, 2023) These symptoms include: cognitive impairment, behavioral changes, mood disorders and motor symptoms. Cognitive symptoms that are more aggressive tend to appear more in patients in the ages of 60s or 70s, but can also occur in midlife, too. CTE does not happen in an individual due to a handful of concussions. Most people who are diagnosed have suffered hundreds or thousands of head impacts over many years playing contact sports, serving in the military or more rarely, as victims of interpersonal violence. (Concussion Legacy Foundation, n.d.)

NATIONAL HOCKEY LEAGUE (NHL)

The National Hockey League (NHL) is a professional ice hockey league in North America composed of 32 teams, 25 being in the United States and seven being in Canada. The league was founded on Nov. 26, 1917, in Montreal, Quebec, Canada. (NHL, n.d.)

NHL PLAYERS' ASSOCIATION (NHLPA)

The National Hockey League Players' Association (NHLPA) was established in 1967. It is comprised of the 750 players in the NHL. The primary role of the Association is to act as the collective bargaining unit on behalf of the players. Additionally, the NHLPA assists and manages in other areas, like marketing, licensing, pension, insurance and communications. Some of the key areas of support and management of the NHLPA provides are: player grievances, professional development programs and improving working conditions and creating player safety initiatives. (NHLPA, n.d.)

Chapter 2

CONCUSSIONS AND CHRONIC TRAUMATIC ENCEPHALOPATHY (CTE) IN THE NHL

In the early 21st century, sports concussions began to be a public health issue. Head injuries, specifically concussions, were becoming more commonly diagnosed. Despite concerns about concussions being an issue since the sport of football was first played in 1869, the first concussions crisis in the United States occurred in 1906 after the Harvard football team reported 145 injuries in one season, 19 of which were concussions. At this time, concussions were part of a larger crisis of football as from 1900 to 1905, at least 45 football players died from their injuries. (Zezima, 2014) People called for the abolition of football. President Theodore Roosevelt helped establish the Intercollegiate Athletic Association, the predecessor organization to the National Collegiate Athletic Association. This association introduced rules and reforms, such as requiring players to wear protective gear and the forward pass. While these reforms reduced physical injuries and death, they also added some effects that were unforeseen. The number of concussions increased due to players crashing into heavier protective gear of opponents. While these concussion crises were occurring in football, ice hockey began making its mark as a violent sport, known for its fistfights. (Harrison, 2014)

The threat of concussions was always there. However, it was in the 1960s that the NHL recognized the number of head injuries was increasing with hockey's growing speed and physicality. (Mondal, 2023) Due to this, the NHL decided to take a step to combat this by making helmets mandatory for players to wear during the game. Any player who entered the NHL after June 1, 1979, was required to wear a helmet, but any player who signed his first pro

contract prior to that date could opt out if they signed a waiver. By 1983, all players were required to wear a helmet while on the ice. (Barry, 2019) The helmet acts as protection for their head against hits from other players, flying pucks, etc. In a study that analyzed 3,952 players in 20 years, it was concluded that the introduction of mandatory use of helmets in the NHL was associated with an increase in career length. (Frick, et. Al., 2017)

This study seemed to show that helmets were helping the problem. However, they did not fully stop the concussion problem. In 1990, a New York Islanders player, Pat LaFontaine, was rushed to the hospital due to a concussion that he received during a game. (Lapointe, 1992) This hospitalization made teams, league officials and fans question everything. A few seasons later, during the 1995-96 season, 52 head injuries were reported. This caused the NHLPA and NHL to form a concussion study group. This group was made up of team doctors, coaches and trainers to improve the understanding of concussion. These individuals reviewed data about concussions and past head injuries that players have faced; they concluded that doctors could identify and treat concussions, but other than that, there was little scientific research available. (Biggane, 1997)

The NHL attempted to implement more protection for players in 1997. During the pre-season, players were given a baseline neurological test. If a player sustained a head injury, they would not be allowed to return to play until they were at the baseline level. Despite this policy being an advancement for the NHL, no formal protocols were put into place. Throughout the next few years, the NHL required players that were diagnosed with a concussion to be symptom free based on the Impact-2 test, a test that determines brain function before and after a concussion. Additionally, a team physician would have to clear the player. However, there was

not a formal protocol for this process, and it was left up to each individual team, meaning the process looked different across the board. (Beaver, 2018)

In 2000, the NHL created a 20-person Injury Analysis Panel made up of coaches, team physicians, trainers and referees; it was chaired by Dave Dryden, a former NHL goalie. The panel's purpose was to gather objective data to prevent injuries. The panel released its first report in 2001, recommending a reduction of deliberate blows to the head, the wearing of a new helmet every year with visors and the installation of more forgiving glass to soften impacts from checks. (NHL Industry Analysis Panel, 2001) Despite taking a cautious approach toward concussions and attempting to recommend implementations that would protect players, the panel disbanded in 2004. This was reportedly due to the NHLPA fearing the information concerning a player's injuries would become known to management and influence contract negotiations or personnel decisions. (Vogel, 2016)

From 2004 to 2008, the NHL made minor changes to combat concussions that could evolve into CTE. During the 2004-2005 season, the NHL began to crack down on vicious, illegal hits by imposing more suspensions and fines. In 2007, NHL Commissioner Gary Bettman proposed penalizing all hits to the head if the initial contact point is the head. However, team general managers reject this proposal.

In 2009, when a concussion crisis was occurring in sports, specifically the NFL, the Concussions Working Group proposed using helmet sensors to study concussions and investigate the long-term implications of concussions; this proposal was rejected. During the same year, the NHLPA suggested penalties for recklessly or intentionally targeting the head. The league's general managers decided to agree to this, and it brought about two changes to protocol. In

January 2010, the NHL announced the implementation of a formal concussion protocol, which would be developed by the Concussion Working Group. It was required that if there was an incident on the ice that may be a head injury, a trainer on the bench would make an initial evaluation. If the trainer believed there was something wrong, the player would be escorted to an isolated area where a physician would administer the Sport Concussion Assessment Tool or Scat-2. The test consisted of basic motor skills, like standing on one leg, listing numbers after being asked several other questions, who hit them, etc. This exam would take 10 to 15 minutes. Following the test, the physician would make an initial diagnosis. If it was deemed a concussion, the player would sit out until they were symptom-free and cleared by a team physician to return. (NHL Protocol for Concussion Evaluation and Management, 2010)

The second major change is that Rule 48 was approved and implemented based on the NHL's Concussion Video Analysis Project. The new rule said that lateral or blindside hits where the head is the primary target are illegal and would result in a major penalty. However, there was some confusion about what constituted a blindside or lateral hit, so the following year, the rule was modified. The words blindside and lateral hit were replaced with "any hit to the head, where the head was the primary target, would be penalized and possibly face a suspension or fine, even if the penalty was not called during the game." This would be mandated through the Department of Player Safety, and the organization would video monitor all games played for violations. The rule was changed again in 2013; it stated that an illegal hit occurred when the head was the main point of contact, and such contact was avoidable. (NHL Protocol for Concussion Evaluation and Management, 2010)

The NHL adjusted concussion protocol again in 2011. Players suspected of sustaining a concussion in a game will be evaluated immediately. Players would be taken from the bench into an examination room, away from external stimuli, to be examined for at least 15 minutes by a team physician. Additionally, general managers chose to tighten enforcement of boarding and charging rules to lessen injuries. They also called for stiffer fines and suspensions for blatantly dangerous hits. (Klein, 2011) In 2013, it was announced that players were required to wear visors, and players who removed their helmets during fights would be penalized. Hybrid icing was also introduced, meaning the icing would be called immediately before players race back to the puck, where violent contact could occur. (Willis, 2013) The NHL and the NHLPA made it a point to extend their efforts to educate coaches, players and staff about head injuries. (Memorandum: Concussions Program Update, 2012) Bettman emphasized that players need to take responsibility and to follow concussion protocol for the system to work. In 2015, the league implemented concussion spotters, an NHL official who watched the game via live-stream and had access to video replay to notice visible signs of a concussion in players. This official would notify the appropriate benches if they noticed something.

From 2016 until present, minor changes have been made to the NHL concussion protocol. According to data from STATS, there were 25 fewer concussions reported during the 2013-2014 season than the prior. The NHL admits that its concussion protocol is not perfect, and it may never be because “players are always going to want to play,” according to Brendan Shanahan, then president of the Toronto Maple Leafs. However, it wants to continue to move in the right direction for its players. (Lageap, 2014)

Chapter 3

RECENT DEVELOPMENTS

While the NHL has implemented concussion protocols and adjusted them over time, players still get concussions from hard hits and fights. Concussions and CTE do not discriminate when it comes to who gets them. NHL players can get a concussion at any moment while on ice. While enforcers, players who deter and respond to dirty or violent play by the opposition, are the ones who frequently receive concussions, other players receive them too.

Arguably one of the best players to ever play in the NHL, Sidney Crosby, has been plagued with concussion issues over the span of his career. Crosby has been diagnosed with at least four concussions since entering the NHL in 2005. The beginning of his concussion struggles was after getting hit in the head during the 2011 Winter Classic against the Washington Capitals. Crosby was able to get up and leave the ice on his own, and he returned to the lineup four nights later not missing a game. However, during that game versus the Tampa Bay Lightning, he was hit from behind and struggled off the ice. That was the last game he played in the 2010-11 season, and he did not return to his team's lineup until the following season on Nov. 21, 2011. Crosby played only eight games when he was hit in the head by an elbow on the opposing team. As a result, he did not return to a game until March 15, 2012. Crosby's worst injury may have come from being hit in the face by a puck from a slap shot. While not diagnosed with a concussion, Crosby faced a broken jaw, and was forced to wear facial protection upon his return to play. He has faced two other concussion diagnoses in his career, one that did not come from in-game action, and one from a playoff game in 2017 against the Washington Capitals. The concussion from 2017 caused him to miss one game. (Boylen, 2017) Crosby is still playing

currently, but he had wondered if the concussion issues would stop him from playing pro hockey. “I’d be lying if I didn’t say that I thought about it,” Crosby told CBC’s Peter Mansbridge when talking about his concussion issues and potentially retiring as a result.

As Crosby thought about possibly having to stop playing pro-hockey, that is a reality of what had to happen for some players, including Jamie Huscroft. Huscroft had a 14-year career and played in 370 NHL games. He would face huge hits and fight with enforcers in both the NHL and AHL. Over the span of his career, Huscroft suffered from at least 14 different concussions. “I was in Vancouver when I was probably close to 30-years-old. I played three exhibition games in a row, and I got knocked out three times in a row over the course of a week. That was the beginning of the end for me,” Huscroft said when talking about how concussions lead to his retirement. Soon after, he retired, but he is still surrounded by the game he loves. Huscroft serves as a director of facilities for a nonprofit association in Washington; he works to change the stigma that hockey players should hide their injuries. (Burke, 2019)

In 2009, Reggie Fleming, an NHL defenseman and left wing from 1959 to 1971 that was known for fighting, passed away. His family decided to have his brain tested by Boston University School of Medicine’s Center for the Study of Traumatic Encephalopathy researchers. Fleming’s brain tissue revealed that he suffered from the degenerative brain disease CTE. He was the first former hockey player diagnosed with the disease. According to Fleming’s family, he suffered from approximately 20 concussions, 10 during his time in the NHL and two that led to him being left unconscious on the ice. (Boston University, 2009)

In 2011, three different NHL enforcers died. Ryan Rypien and Wade Belak, who played for the Winnipeg Jets and Nashville Predators, respectively, committed suicide. Derek Boogaard,

who played for the Minnesota Wild and New York Rangers, killed himself with an accidental overdose of alcohol and prescription painkillers. All three of these players were diagnosed posthumously with CTE. Boogaard's case is one of the most widely known of those NHL players who have been diagnosed with CTE. This is because John Branch, a reporter for The New York Times, wrote about his life and development as a hockey goon. Boogaard did not score many goals in his career, only three in his six seasons in the NHL, but he knew what his role was, and he completed it well. He was willing to fight anyone on the ice in defense of his teammates. Boogaard was addicted to prescription drugs. His drug abuse was nothing that was kept secret. He was sent to rehabilitation facilities as part of the league's substance-abuse program during his time in the NHL. However, this time seemed to have been treated as vacations. Boogaard, when asked how many concussions he had suffered during his career, said he had no idea. He estimated that it was "hundreds." (Brunt, 2014)

Due to many players being diagnosed with CTE and several facing issues from head injuries after they retired, 146 former NHL players were named as plaintiffs in a concussion lawsuit against the NHL. The former players accused the NHL of failing to better prevent head trauma, and they said that the NHL did not warn players of such risks and promoted violent play that led to their injuries. In 2018, the NHL reached a settlement in this case. The settlement called for the NHL to pay each of the plaintiffs at least \$22,000. It also involved neurological testing and assessment for players paid by the league, as well as an administrative fund to pay for the costs and up to \$75,000 in medical treatment for players who test positive on two or more tests. Additionally, the settlement called for the NHL to support retired players in need, including players who did not participate in the litigation. (Kaplan, 2018)

Steve Montador, a retired NHL player, was found dead in his home in 2015 at age 35. Montador's brother, Chris, claimed, "He either just stopped breathing or his heart went." (Campbell, 2015) Following his death, Montador's brain was tested for CTE, and it was determined that he did indeed have it. Montador's father, Paul, filed two wrongful death suits against the NHL. The first was filed in the U.S. federal court and was terminated by a judge, claiming that Paul made claims that were preempted by the NHL's collective labor agreement with the NHLPA. The second wrongful death suit against the NHL was filed in Cook County court in Chicago, Ill. (Westhead, 2021) In 2023, the NHL made a statement in regard to the wrongful death suit. "During his life, Montador struggled with substance abuse, depression, anxiety, insomnia and strained/abusive personal relationships," the NHL said in court filings in the Montador case. "Despite being repeatedly made aware of and informed about potential long-term risks of head injuries, including CTE, by numerous individuals as detailed above, Montador continued to play in the NHL for years."

Meanwhile, the NHL had its own statement: "Montador was told by multiple specialists that he should stop playing hockey due to his concussion history but ignored these medical professionals and continued his career, suffering additional head injuries. Montador also expressly told Blackhawks' medical personnel that he assumed the risk of continuing to play hockey at the professional level." When discussing Montador's injuries, the NHL also added, "None of these injuries can possibly be attributed to his play in the NHL." The NHL insinuated that Montador suffered his brain injuries playing in other leagues, despite fighting 69 times in his NHL career. (Kennedy, 2023)

Chapter 4

NHL STATEMENTS

Despite many NHL players being impacted later in life by concussions and being diagnosed with CTE posthumously and judges siding with former players in suits against the NHL over concussions, NHL Commissioner Gary Bettman claims that he is unconvinced that there are connections between CTE and playing in the NHL. In 2016, U.S. Senator Richard Blumenthal posed a series of questions to Bettman on the NHL's stand on concussions and CTE. (ESPN, 2016)

To answer this questioning, Bettman wrote a 24-page response to Senator Blumenthal. In this response, he stated, "The science regarding C.T.E., including on the asserted 'link' to concussions that you reference, remains nascent, particularly with respect to what causes C.T.E. and whether it can be diagnosed by specific clinical symptoms ... The relationship between concussions and the asserted clinical symptoms of C.T.E. remains unknown."

In an interview with NPR's A Martinez on *Morning Edition* in 2023, Bettman doubled down on his beliefs about play in the NHL not being linked to CTE. He said, "We listen to the medical opinions on CTE, and I don't believe there has been any documented study that suggests that elements of our game result in CTE. There have been isolated cases of players who have played the game [who] have had CTE. But it doesn't mean that it necessarily came from playing in the NHL." (Mai, 2023)

Commissioner Bettman's stance on concussions and CTE is concerning to past players. Former NHL defenseman Chris Therien believes that Bettman "denies that concussions are

almost real.” Players and fans additionally believe that Bettman’s beliefs are a clear contradiction to the NHL’s stance in the Steve Montador wrongful death suit, where the league alleges that Montador knew the risks of head injuries. (Kennedy, 2023)

Chapter 5

COMPARISON WITH THE NFL

When discussing concussions and CTE in the sports realm, football and the NFL comes to most people's minds before hockey. In terms of how the NFL concussion protocol works, if a player shows concussion symptoms, the protocol will be started by the person who spotted them. The player will be examined for a concussion on the sidelines. The person performing the evaluation will look for so-called "no-go" symptoms in the player, such as loss of consciousness, gross motor instability, confusion, amnesia, impact seizure and more. If it is suspected that the player might have a concussion, the player must undergo an exam by a team doctor, an unaffiliated neurotrauma consultant or athletic trainer. Players diagnosed with a concussion will move further in the concussion protocol. (Sutelan, 2023)

This furthering on concussion protocol consists of five steps that players have to go through before they return to play. These five steps are called the following: symptom limited activity, aerobic exercise, football-specific exercise, club-based non-contact training drills and full football activity/clearance. In the symptom limited activity phase, players are not supposed to engage in much activity. They should rest during this step and not do anything that could flare their symptoms up. They will eventually be able to do limited stretching and light aerobic exercises while supervised by team training staff. In the aerobic exercise step, players will work on cardio exercises, stretching and training, which they will do under supervision by team medical staff. After this step, players can start working on balance testing. In the football-specific exercise phase, players can do football-specific exercises and work with the team for up to 30 minutes under supervision. Additionally, they are able to increase their cardio workloads.

The fourth phase, club-based non-contact training drills, is where players are able to start throwing, catching, running and engaging in activities specific to their position. Their exercise and training are also allowed to be ramped up. By the end of this step, players have to have undergone neurocognitive and balance testing. In the full football activity/clearance phase, the final phase, the player has to be cleared by both the club physician and the independent neurological consultant to return to full activity. (Sutelan, 2023)

When it comes to CTE, the NFL acknowledges there is a link between it and football. Jeff Miller, the NFL's senior vice president for health and safety said, "The answer to that question is certainly yes," when asked at a roundtable discussion on concussions convened by the U.S. House of Representatives' Committee on Energy and Commerce if the link between football and neurodegenerative diseases such as CTE has been established. (Fainaru, 20216)

In terms of the legal system, the number of settlement claims approved by the NFL was reported to be about 900. The NFL denied an additional 1,100. In the seven years since this particular settlement opened, the league has paid out about \$1.2 billion to more than 1,6000 former players and their families. (Hobson, 2024)

By acknowledging this link, the NFL is attempting to adapt. "We learn more from science," NFL Commissioner Roger Goodell said in early 2016. "We learn more by our own experience and we have made great progress. We continue to make rule changes to our game to make the game safer and protect our players from unnecessary injury, from acts that we see can lead to increased probability of an injury." (Martin, 2016) Recently, a Boston University found

CTE in 92% of ex-NFL players that the researchers studied. (Most, 2023) Over 100 former NFL players have been diagnosed with CTE posthumously. It can only be assumed that this number will increase with time.

Chapter 6

IS IT STILL AN ISSUE?

For hockey players and their families, particularly at higher levels of the sport, concussions in the NHL and the potential risk of CTE are absolutely still an issue. Studies are beginning to even show that playing hockey at all has an impact on a person's chance of developing CTE. In a preliminary study conducted by the Boston University School of Medicine, it showed that each additional year of playing ice hockey may increase a person's chance of developing CTE by about 23%. The particular study involved 74 people who played ice hockey at various levels: seven played at the youth level, 25 played at the high school level, 22 played at the junior or college level, 19 played professionally and one played at an unknown level. Additionally, 34 of these people played another contact sport, like football. All 74 of the people involved in this study donated their brain to research after their death. Of the donors, 40 (54%) were diagnosed with CTE. CTE is characterized by four different progressive stages of severity. The researchers found that each additional year of play was also associated with a 15% increased chance for a person progressing one CTE stage. (Boston University, 2022)

There are no current studies or indications that lead us to believe that less people are playing ice hockey to the risk of head injuries, concussions and CTE. As a result, former players want to ensure that their sport is safer for future generations. Many players are joining the "My Legacy" campaign through the Concussion Legacy Foundation. The role of this campaign is to "recognize those who have made a lasting contribution to research and awareness of concussions and CTE and encourage others to pitch in and build their own legacies." When joining the campaign, these former players are pledging to donate their brain for research. It creates public

awareness of the critical role of the brain donation in CTE research, and it makes sure there is a long-term supply of donors for research in hopes of developing a cure for CTE. Several men and women hockey players have pledged to donate their brain, including Ben Lovejoy, AJ Mleczko Griswold, Angela Ruggiero and Hayley Wickenheiser. (Concussion Legacy Foundation, n.d.)

Another way former players are attempting to help future generations is by signing up for the Health Outreach Program for the Elderly (HOPE) study through the Boston University Alzheimer's Disease Research Center. The study has participants each year be interviewed, answer questionnaires, undergo neuropsychological testing and physical exam and have blood drawn. A major focus of this study is investigating how repetitive head impacts from contact sports, military service and intimate partner violence leads to late life effects, including CTE. The study also asks participants to consider donating brain tissue after death in order for researchers to discover treatments for CTE, Alzheimer's disease and more. (BU ADRC, n.d.) Chris Nilan, a former NHL player who fought more than 300 times in his pro hockey career, entered the HOPE study. His results were very good in terms of his cognitive, memory and motor tests. However, the results cannot rule out CTE. The researchers, due to his results, want to know why they turned out the way they did and what can be learned from it. The HOPE study would like to continue to answer these questions as it evolves throughout time. (Waldstein, 2023)

Chapter 7

DISCUSSION

It is clear that the NHL, from its public statements over years, has dug in on the position that CTE is not contracted through repeated head injuries in hockey. This flies in the face of numerous studies from the concussion medical community. As a result, members of the media have to choose between a sports business that has an obvious self interest in downplaying injuries and a medical community that has no self-interest. In this case however, the NHL has been on the receiving side of fierce negative coverage over this issue.

Due to lack of responsibility from the NHL on this issue, the league faced negative coverage from several outlets and columnists. Amanda McGee, a contributing writer for *Hockey of Tomorrow*, wrote an article entitled “Hockey’s Relationship with CTE Must Change.” Within this piece McGee wrote that she believes that all players should be educated about “the potential risk of attaining CTE during their careers.” (McGee, 2023) Another instance of negative press is when Sam Neumann wrote an opinion piece for *Awful Announcing* stating that “the NHL is burying its head in the sand over fighting, CTE.” Neumann is not shocked that the NHL is ignoring the issue. “This approach prioritizing entertainment like fighting while downplaying the science of CTE, is eerily similar to denying the link between climate change and extreme weather events,” Neumann stated. He believes that NHL Commissioner Gary Bettman simply ignores the issue of CTE, especially when asked a question about it in relation to a player’s death. (Neumann, 2024) When high-profile, reliable outlets, like *The Athletic*, report on the issue, the journalists do not give their opinion on the Commissioner’s statements and the

league's stance. However, they fully mention the harsh effects CTE has had on former players, such as drug abuse and suicide. (Mendes, 2024)

Despite anger being directed at the NHL for its lack of acknowledgment that playing hockey can increase the likelihood of getting CTE, fans do not seem to be boycotting the league. In fact, the league is not facing any fiscal consequences. They are deciding to watch NHL games anyway. Besides the 2012-2013 season, when the NHL lockout occurred, and 2019-2020 and 2020-21 seasons, which were cut short due to the COVID-19 pandemic, NHL attendance has grown from the season prior, specifically after the public gained knowledge on CTE and head Bettman deny the link between CTE and hockey. (NHL Records, 2023) Additionally, ESPN, the world's leading multiplatform sports entertainment brand, signed a seven-year agreement with the NHL to broadcast NHL games, which began in the 2021-22 season. The agreement assures that hockey will have a high profile on ESPN shows, such as SportsCenter. (Draper, 2021) This agreement will make sure more eyes get on hockey and people learn about the game. Since Bettman's first denial of the link between CTE and hockey in 2016, there have been two teams added to the NHL, the Vegas Golden Knights, who began play during the 2017-2018 season, and the Seattle Kraken, who began play during the 2021-2022 season. There are at least six more cities that would like an NHL team also. (Earegood, 2023) More teams mean more people watching the game, and this essentially allows the NHL and Bettman to continue ignoring the CTE problem because the league is still making money.

Chapter 8

CONCLUSION

As stated in the discussion, there have been numerous studies that have shown causation between CTE and repeated head trauma. Meanwhile, the NHL has denied any connection and has not suffered a significant financial loss. Its revenues are at an all time high, and the game is as popular as it has ever been. There are currently 32 teams in the NHL, and that number is only going to increase with time.

It is evident that the NHL does not take responsibility when it comes to CTE, and it does not seem like it is going to change its stance anytime soon. Deputy Commission of the NHL Bill Daly recently said that the “science is still lacking” on CTE and if hockey and the NHL are contributors to it. (Arnold, 2024)

From this point on, journalists need to get inside the decision making within the NHL and discuss with league officials on why they are maintaining this stance on CTE. Is it because they genuinely believe this stance, or is it because they are doing it for profit? Additionally, journalists need to research fan apathy about the health consequences on sports. Fans may say they care, but they do not change their behavior. Journalists need to seek what this means.

Overall, while the league does a lot in terms of concussion protocol, it does not do enough for its former players and families who have or are suspected to have CTE. As fans of hockey and sports, as a whole, we need to support the scientists and researchers that are

expanding what we know about CTE. The NHL needs to continually be held accountable by current and former players, their families and fans by speaking out and filing lawsuits.

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