



CONCUSSIONS AND THE COURTHOUSE

DECEMBER 2015



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INTRODUCTION

The dangers of traumatic brain injuries in sports have long been known, but it is only recently that a widespread change in attitude to such injuries has taken hold, as the civil justice system has begun to hold sports leagues and school districts to account. Ten years ago, players, coaches and commentators still talked about concussions in terms of “being shaken up,” or “having your bell rung,” even as the risks head injuries posed were becoming common knowledge.

Today, more players and parents are aware of the need to take concussions seriously than ever before, coaches who push obviously concussed players to “get back in there” are becoming more of an anomaly, and every state in the nation except Wyoming has passed some version of a “When in Doubt, Sit Them Out” law.

The dramatic change in culture has been fueled in part by concussion litigation. High profile lawsuits against sports organizations, school districts, and colleges have pushed administrators and the insurance companies that back their organizations to introduce strict protocols and concussion

management policies. Where decades of medical research changed attitudes only incrementally, lawsuits have fueled accelerated change.

No concussion lawsuit has had quite the effect of the NFL concussion litigation. One of the most high-profile court cases in sports history, the case immediately sent shockwaves not just through the NFL, or professional sports, but all contact sports at every level. Insurance companies warned that the league might face as much as \$2.5 billion in damages, and no one knew better than them that that estimate might be the tip of the iceberg.

Realizing that inadequate treatment of concussions represented a risk for which they would have to pay, the insurance companies began pushing schools and sports organizations to embrace cutting-edge concussion treatment protocols. The civil justice system, through a small number of lawsuits, has driven the most radical change in the health care approach to athletes and student-athletes in the history of sports.

THE CHANGE IN CULTURE

SEVENTEEN HURT IN FOOTBALL GAME

Union-Wesleyan Football Contest
Roughest in Sport's History.

FIVE PLAYERS IN HOSPITAL

Both Captains Carried Off Field—Neither Team Scored—Every Scrimmage Marked by Accidents.

SCHENECTADY, N. Y., Oct. 10.—A football game which for its exhibition of

bitterly. The game had to be stopped time and again when the players were injured or knocked senseless. After nearly every scrimmage some one was found to have been hurt so seriously that he could not arise from the ground.

move them to the hospital. Neither side was able to score, and this in a measure explains the desperate playing, leading to exceptional roughness, with naturally attendant injuries.

The New York Times
October 11, 1908

On November 2, 2012, the New Orleans Hornets were playing the Utah Jazz when the Hornets' number one draft pick, Anthony Davis was accidentally concussed by a blow from a teammate's elbow. Davis was forced to miss the next game, much to the chagrin of his coach, Monty Williams. "He got touched up a little bit last night," Williams told reporters. "That happens a lot in basketball. It's just that now they treat everybody like they have white gloves and pink drawers and

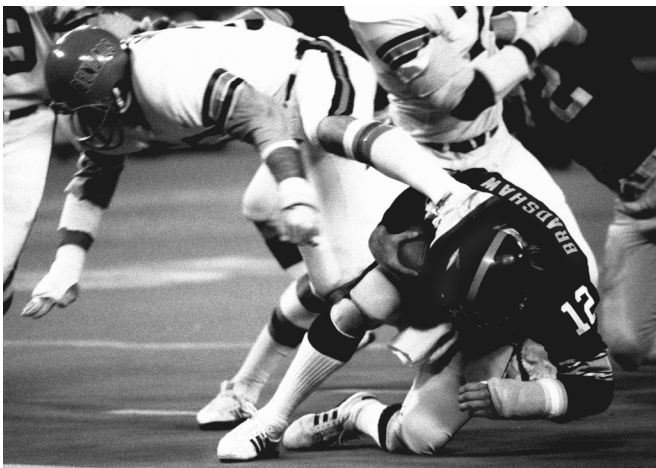
it's getting old... It's a man's game. They're treating these guys like they're five years old."¹

Williams' attitude to concussions would have been uncontroversial ten years ago. Until recently, players, coaches and commentators still regarded "having your bell rung" and continuing to play as a mark of courage, even as medical research increasingly revealed the dangers not only to short term health but also to long term cognitive health. But in

“They’re forced to care now because it’s politically correct to care. Lawsuits make you care.”
- Terry Bradshaw

2012, Williams’ comments received widespread condemnation. Today, more players and parents are aware of the need to take concussions seriously than ever before, coaches who push obviously concussed players to “get back in there” are becoming more of an anomaly, and every state in the nation has some version of a “When in Doubt, Sit Them Out” law.

The change in culture has been dramatic. Researchers from Children’s Hospital Colorado tracked the compliance of high school athletes who suffered from concussions and how well they followed the return-to-play guidelines. The researchers found that only half of the athletes they tracked were compliant in 2007, but by 2013, 80 percent were.² Sideline concussion protocols, independent spotters and medical examiners, and baseline neurological testing have become common in professional sports. It would be surprising today to find a school or sporting organization that has no concussion protocols, and those protocols are becoming stricter.



Pittsburgh Steelers quarterback Terry Bradshaw playing on October 17, 1977

It’s easy to assume that discoveries in medical science have driven this rapid culture change, but the health consequences posed by concussions have long been known. As early as 1982 concussions were front page news, as *The Wall Street Journal* called them the “silent epidemic.” By the 1990s and early 2000s, a growing body of medical research—and controversy surrounding it—was showing up not only in obscure medical journals but also in mainstream magazines and national newspapers. Still, sports leagues at the professional, amateur, and youth levels were slow to react to the increased awareness of the dangers of concussions. That all changed when injured players started demanding answers through concussion litigation.

As former Steelers’ quarterback, Terry Bradshaw, put it, “They’re forced to care now because it’s politically correct to care. Lawsuits make you care.”³ While lawsuits had been filed before, they tended to be individual lawsuits against specific organizations and school districts. In contrast, the NFL concussion litigation filed in 2011 was one of the most high-profile court cases in sports history. The NFL’s insurance companies warned that the league might face as much as \$2.5 billion in damages. And no one knew better than the insurance companies that that estimate might be the tip of the iceberg.⁴ If an organization with several thousand players might face \$2.5 billion in damages, what might the colleges, high schools, and youth

organizations involved in football face?

Nor was it just football. Many sports faced potential liability for known concussion problems, including soccer, one of the most-played sports and the number one cause of concussions in female athletes. And it wasn't just at the professional level. It was at every level of sport, from Little League, to high school, and college. After all, the NFL concussion case covered only 5,000 former players, while the CDC estimates as many as 3.8 million sports-related concussions occur each year.

The NFL concussion lawsuit brought unprecedented attention to the issue of concussions, and the trickle-down effect prompted widespread change. Insurance companies, realizing that inadequate treatment of concussions now represents a risk for which they will have to pay, began pushing schools and sports organizations to embrace cutting edge concussion treatment protocols.⁵ The NCAA—with its own potential liability described as a gathering storm that might one day dwarf the NFL litigation—has toughened concussion measures considerably.⁶ And while the organization has come under fire for failing to enforce its own recommendations, college officials have said they still expect insurance companies to enforce compliance of the guidelines when underwriting liability policies for schools, and for courts to use the guidelines as a baseline in any litigation around concussions.⁷

Zackery Lystedt and the “When in Doubt, Sit Them Out” Laws

In 2006, 13-year-old Zackery Lystedt suffered a concussion during a junior high school football game. Lystedt sat out just three plays before returning to the game. Later in the second half, Lystedt collapsed and was airlifted to a hospital, where he underwent emergency surgery to remove portions of his skull to relieve pressure in his brain. It would be nine months before Lystedt could speak again, 13 months before he could move his arms or legs, and 20 months on a feeding tube.⁸

In 2009, Washington state passed the so-called Zackery Lystedt Law, becoming the first state in the nation to enact a comprehensive youth sports concussion safety law. The law, also known as “When in Doubt, Sit Them Out,” was drafted by Richard Adler, Lystedt’s attorney. Since then, every state except Wyoming has enacted some form of “When In Doubt, Sit Them Out” law.

While these laws are a tremendous step for the safety of youth sports, they are not a perfect solution. Many do not identify who should be responsible for removing a player from a game, simply stating the player “shall be removed.” Many do not require coaches to undergo concussion training, or that student athletes who have been removed from play obtain written clearance from a health care provider before returning to play. Only a handful of states require parents to be notified if their child suffers, or is suspected of suffering, a traumatic brain injury.⁹

In 2010, *The New York Times* reported that the risk management arm for

Only a handful of states require parents to be notified if their child suffers, or is suspected of suffering, a traumatic brain injury.

The CDC estimates as many as 3.8 million sports-related concussions occur each year.

Washington state schools—the very state that had enacted the Zackery Lystedt law—had decided not to use baseline neurological testing, which can help identify concussed players even when they appear otherwise healthy, because it did not want to be held accountable. Mary Sue Linville, director of risk management for the Washington Schools Risk Management Pool, said, “If you purchase the program, you better be using it consistently and properly, because if you don’t, that opens up liability. If you don’t own it at all, then you do not have that liability, and you are not responsible.”¹⁰

Very few “When In Doubt, Sit Them Out” laws have any enforcement mechanism—either civil or criminal penalties—meaning failure to adhere to the law has no consequences.

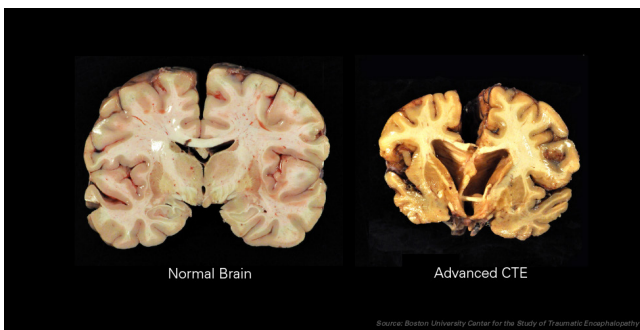
In fact, most remove negligence liability for volunteers who allow a player to return to the game. While this does not provide a blanket immunity for coaches and medical personnel, it does present an obstacle to those who seek to hold individuals and organizations accountable in the courtroom.¹¹

ANATOMY OF A CONCUSSION

Concussions are often described as “brain bruises,” but that’s misleading. A concussion involves an injury to the physiology of the brain cells themselves, not the structure of the brain as a whole. A concussed brain may look completely normal, even on MRI or CAT scans. And the damage doesn’t go away like the predictable healing of a bruise. It can stick around for hours, days, weeks or longer.

When we think of concussions, we think of the “big hit” that leaves a player dazed or unconscious, and it’s true that a single concussion, or series of concussions, can result in a traumatic brain injury. But medical science is also increasingly pointing to the accumulation of undramatic subconcussive hits as a major risk for potential brain disease. One University of Oklahoma study of college football players found that skill position players could expect to sustain collision forces in excess of 98 g once every 70 impacts, but that linemen would suffer 20-30 g impacts on almost every play.¹² In such cases players who exhibit no immediate symptoms may still be at risk for serious health problems.

One such problem is chronic traumatic encephalopathy, or CTE, a disease found in individuals with a history of repetitive brain trauma. CTE features progressive degeneration of brain tissue and the build-up of an abnormal protein called tau. While there is as yet no consensus about the effects of CTE, some researchers suggest it is associated with dementia, memory loss, aggression, confusion and depression. Like concussions themselves, CTE is hard to identify, and can only be confirmed through an autopsy of the brain.



CONCUSSION FLASHPOINT: THE NFL

FOOTBALL GAME WAS FATAL.

Chicago Young Man Received Injury Six Years Ago Which Kills Him.

CHICAGO, Oct. 11.—Max Henry Fleischer is dead as a result of an injury received in a football game six years ago. Until two months ago Fleischer's parents did not know of the accident, but as soon as his

skull was depressed. The skull was trepanned, revealing a diseased condition of the brain. During the last six years Fleischer had suffered from severe headaches.

school. He was kicked on the head and was picked up in a dazed condition, but exacted a promise from his playmates not to talk of the accident for fear his mother would not allow him to play any more.

The New York Times
October 12, 1902

That football was a violent sport was known to everyone, not least its players. As far back as 1905, after 37 players died in two years in the so-called “death harvest,” the violence of football provoked intervention from Teddy Roosevelt’s administration.¹³ More recently, the NFL’s own research found that football collisions reached between 17 and 126 g-forces, the equivalent of being hit in the head by a ten-pound cannonball traveling at 30 miles per hour.¹⁴ But what would eventually prompt analogies to Big Tobacco’s cover-up of the dangers of smoking was the NFL’s apparent two decade campaign to do everything in its power to conceal links between football and brain disease. The NFL even employed the same outside counsel, Covington & Burling,

that had designed such a strategy for the tobacco industry.¹⁵ The company line was that there was no concussion crisis. As then-NFL commissioner Paul Tagliabue put it, during a 1994 panel discussion, “Concussions I think is, you know, one of these pack journalism issues, frankly. There’s no increase in concussions. The number is relatively small. The problem is it’s a journalist issue.”¹⁶

In 2009, the NFL’s own funded research found that former players suffered from memory-related diseases at a rate 19 times higher than the general population. The league immediately tried to backtrack on the findings, with league spokesman Greg Aiello claiming that the study had shortcomings, and that “there are

On October 2nd, Hoge suffered another concussion, and this time had to be resuscitated after he stopped breathing in the locker room.

thousands of retired players who do not have memory problems.”¹⁷ Soon after, NFL commissioner Roger Goodell was called to testify at a U.S. House Judiciary Committee hearing on football and brain damage. After refusing multiple times to confirm the league knew of the connection between football and brain damage, Congresswoman Linda Sanchez confronted Goodell, saying:

*“I am a little concerned—and I hear the concern expressed by some of the witnesses on the panel today—that the NFL sort of has this kind of blanket denial or minimizing of the fact that there may be this link. And it sort of reminds me of the tobacco companies pre-1990s when they kept saying, ‘No, there is no link between smoking and damage to your health or ill effects.’ And they were forced to admit that that was incorrect through a spate of litigation in the 1990s. Don’t you think the league would be better off legally, and that our youth might be a little bit better off in terms of knowledge, if you guys just embraced that there is research that suggests this and admitted to it?”*¹⁸



NFL commissioner Roger Goodell testifies before the House Judiciary Committee on October 28, 2009

The Merrill Hoge Case

In 1993, Pittsburgh Steelers’ neurosurgeon Joe Maroon enlisted neuropsychologists to design tests that measured players’ brain function and established baseline data. Twenty-seven players voluntarily agreed to take the test. One of those players was running back Merrill Hoge, who suffered a concussion during pre-season the following year. Hoge had by that time been traded to the Chicago Bears, who sent him to the hospital for a CT scan, where Hoge was later found wandering around with no idea how he had arrived there. The Bears’ doctor, John Munsell, told him over the telephone he would have to miss the next exhibition game, but never examined him again. Hoge played in the season opener a week later, and three more games after that. On October 2nd, Hoge suffered another concussion, and this time had to be resuscitated after he stopped breathing in the locker room. When Hoge’s concussion symptoms didn’t go away, he returned to Pittsburgh to take Maroon’s test. This time he scored dramatically lower. At Maroon’s urging, Hoge retired immediately.

In 1996, Hoge sued John Munsell. Though the lawsuit was a medical malpractice suit against a team doctor, not the team or the league itself, it was clear to many that it was also an indictment of how football teams handled concussions.¹⁹ Munsell admitted in court he had no training in sports medicine, nor knowledge of any concussion literature. When his lawyers argued that Hoge must bear some responsibility for not informing medical staff of his lingering symptoms, Hoge

“... his disability is the result of head injuries suffered as a football player with the Pittsburgh Steelers and Kansas City Chiefs.”

himself responded on the witness stand:
“We could probably save a lot of time here: Nobody told me anything about my concussion. Nobody told me about the signs and symptoms and what to be aware of. Had I known those things, you’re darn right: I would have told him. Would have been more than happy to tell him. But at that time I knew nothing. I did not know what I was risking. We talk about fatality and brain damage; I should have known about that, you’re darn right I should have known. If I feel like I can perform and I’m doing everything possible to perform, I will perform. But we’re not going to compare knees and ankles here. We’re talking about a brain, far more important than any other part of our body. And I did deserve that. Dr. Munsell took me over as his patient; that is his obligation. Not to stick me on a plane, send me home, and have nothing to do with me again.”²⁰

The jury awarded Hoge \$1.55 million.



Retired NFL player Merrill Hoge testifies before the House Judiciary Committee on October 28, 2009

Rather than sharing the information gathered on Hoge and others by the Pittsburgh Steelers’ medical staff, the NFL founded its own Mild Traumatic Brain Injury (MTBI) Committee, which spent the next decade ignoring, and sometimes attacking, a growing body of scientific evidence that football players who suffered multiple traumatic brain injuries were at greater risk for neurocognitive illness later in life, while at the same time publishing its own studies downplaying the risk posed by concussions.

The Mike Webster Case

When “Iron Mike” Webster, once a roommate of Merrill Hoge, retired in 1990 after 15 years as a center for the Pittsburgh Steelers and Kansas City Chiefs, he had four Super Bowl rings and a legendary reputation as one of the toughest players the NFL had ever seen. By 1997, the same year he was named to the Pro Football Hall of Fame, Webster had been homeless for three years, living at times in his car, and was beset by health problems.

With the help of his lawyer, Bob Fitzsimmons, Webster applied for disability benefits from the NFL. The NFL pension board granted Webster “total and permanent” disability benefits. In a letter that would become significant a decade later—when the NFL would claim it had never known of a connection between football and brain disease—the board confirmed that medical reports, including one from an NFL-selected neurologist, “indicate that his disability is the result of head injuries suffered as a football player with the Pittsburgh Steelers and Kansas City Chiefs.”²¹

The board also concluded, despite unanimous medical advice to the contrary, that Webster had not been too disabled to work until years after retirement, drastically reducing the benefits for which Webster was eligible. Fitzsimmons then filed suit against the NFL pension board.²² The lawsuit uncovered confidential NFL documents confirming the league had previously granted benefits to other players with long-term brain damage, despite the statements of its MTBI committee that football players did not suffer from such problems. When Fitzsimmons won, the NFL took the case to the Fourth Circuit of Appeals. The appellate court noted that the NFL had paid out in at least eight other cases of disability due to brain damage, and awarded Webster's family approximately \$2 million.²³

It was too late, however, for Mike Webster. "Iron Mike" had died four years earlier in 2002, at the age of 50. The autopsy was performed by Dr. Bennet Omalu, a forensic pathologist at the University of Pittsburgh, who found evidence of chronic traumatic encephalopathy, or CTE, in Webster's brain. Omalu published his findings, thinking that the discovery would be welcomed by the NFL. Instead, the NFL attacked Omalu's findings and demanded a retraction.

The NFL Concussion Litigation

It is the American way to invite guests over for Thanksgiving dinner when they have no plans of their own, and Dr. Bennet Omalu was the recipient of such hospitality, courtesy of the Luckasevic family. Todd Luckasevic worked with Omalu at the Allegheny County Medical

Examiner's office. Todd's brother, Jason, was a lawyer at the Pittsburgh firm of Goldberg, Persky & White. Omalu and Jason became friends, and Jason watched as the league tried to discredit Omalu.²⁴

The idea of initiating one of the most high profile court cases in sports history was far from Luckasevic's mind, at first. Luckasevic was more used to the kind of unglamorous work that makes up the reality of a typical personal injury lawyer's workload. In his first six months on the job, Luckasevic had racked up 20,000 miles on his Honda Civic while taking depositions from former employees of a steel plant who had been exposed to asbestos. After the asbestos case, Luckasevic moved on to auto accidents and other personal injury cases, but he also thought about how he might help support his friend Omalu.

For three years, Luckasevic worked to develop a case, often laughed at by other lawyers for his troubles. Few thought bringing a case was realistic, but in 2011, Luckasevic filed suit on behalf of 75 NFL players. Luckasevic's partners at Goldberg, Persky & White initially worried that the case might bankrupt the firm, but the suit only grew as other, bigger firms joined in, bolstering the ranks of former players being represented.²⁵

Soon after Luckasevic and the lawyers who had joined with him filed their case in California Superior Court, other lawyers began doing the same. A month after Luckasevic, Larry Coben of the Philadelphia-based firm Anapol Schwartz, PC, filed suit in federal court. The lead plaintiff was former Atlanta

Falcons safety Ray Easterling, a man beset by many of the same problems seen in Mike Webster and others. Eight months after the filing, Easterling committed suicide. An autopsy later confirmed his brain was riddled with CTE.²⁶

The various lawsuits were eventually consolidated in federal court, where negotiations were led by co-lead plaintiffs' counsel Christopher Seeger and Sol Weiss. Despite the NFL's attempt to dismiss the suit on the basis of federal

employment preemption, in 2014, U.S. District Judge Anita Brody preliminarily approved a \$765 million settlement (both sides estimated damages close to \$1 billion, but the fund is expected to earn interest over its 65-year lifespan). The case revealed the estimates of the NFL's own actuaries, who reported that they expected almost a third of retired players to develop long-term cognitive problems, and at notably younger ages than the general population.²⁷

BEYOND THE NFL: THE CONCUSSION EPIDEMIC

FOOTBALL AND INSANITY.

CHICAGO, Nov. 19.—Football players, according to Jere Delaney, trainer of the Northwestern University eleven, are subject to an ailment similar to softening of the brain, which leads not only to the making of peculiar statements, but causes strange actions which sometimes are amusing.

declared, however, that it results more from the long-continued physical and nervous strain to which the men are subjected during the three months of rigid training which they are forced to undergo than from the blows, kicks, and bumps they receive on their skulls during games.

the men who are in closest touch with the players is it recognized that they are given to day dreaming during which they make strange motions, as if struggling with an imaginary opponent."

According to Delaney, the athletes are given to almost childish methods of play when at rest. An instance related by the trainer was of a man who during more than an hour pored over a map of the United States, drawing lines with his index finger and imagining he was traveling over the country which his finger crossed.

The New York Times
November 20, 1904

Though the NFL has dominated the headlines when it comes to concussions, it represents only a fraction of the concussions that occur every year in a wide variety of sports, at levels from Little League to the professional ranks. According to the Centers for Disease Control (CDC) as many as 3.8 million sports-related concussions occur each year. But despite the prevalence of concussions, the organizations tasked with protecting players have often prioritized avoiding accountability.

The NCAA and Preston Plevretes

On October 4, 2005, LaSalle University football player Preston Plevretes suffered a concussion during practice. Despite suffering from continuing symptoms, he was cleared to play just two weeks later. The LaSalle trainer never evaluated Plevretes' orientation or memory – nor was he required to under guidelines at the time. A month later, on November 5, Plevretes collided with an opposing player while covering a punt and was concussed again. Doctors

had to remove one third of his skull. He spent three months in a coma, and can now barely walk or speak.

In the wake of the Plevretes case, the NCAA promised national guidelines for concussed athletes, but subsequent lawsuits allege the organization did not follow through.²⁸

A 2010 NCAA survey of its participating schools found that fewer than 50 percent required players to meet with a physician post-concussion. The survey also revealed that more than 40 percent of schools allowed players to return to play in the same game after a concussion diagnosis.²⁹

When the NCAA's director of health and safety, David Klossner, was asked in 2010 if the youth sports regulations were tougher than the NCAA's, he said "Well since we don't currently require anything, all steps are higher than ours."

From:	Klossner, David
Sent:	Tuesday, February 23, 2010 10:55 AM
To:	Frank, Abe
Subject:	RE: Concussion Summit: Thank you all so very much! Next steps....
Attachments:	State Concussion Legislation Tracking List.docx

Well since we don't currently require anything all steps are higher than ours. It seems the federal act is mandating baseline and post-concussive testing. Something not in most state legislative acts.

When Klossner pushed internally for tougher concussion measures, he was mocked by fellow NCAA staffers. "Dave is hot/heavy on the concussion stuff," wrote Ty Halpin, the director of playing rules administration. "He's been trying to force our rules committees to put in rules that are not good — I think I've finally convinced him to calm down."

"He reminds me of a cartoon character," responded Nicole Bracken, the associate director of research.

"HA! I think you're right about that!" Halpin wrote.³⁰

The Derek Sheely Case

In 2011, Frostburg State fullback Derek Sheely fell into a coma and died after a series of brutal practices that saw him come out of drill four times, each time bleeding from the head. Sheely suffered from headaches and talked to the trainer repeatedly about it, but was never checked for a concussion. At one point a coach allegedly pressured Sheely to keep practicing and called him a "pussy."

Derek Sheely's parents initially had no idea that their son had clearly been suffering from a prior concussion when he died. It took anonymous emails and then an investigation by their lawyer, Paul Anderson, to find out what really happened. When they reached out to the NCAA, the organization wrote a letter back encouraging them to check the health section of the NCAA website. In court documents the NCAA—the organization that was founded to protect student-athletes—claimed it had no legal duty to protect student-athletes.³¹

A 2014 study in the *American Journal of Sports Medicine* found that while most NCAA schools had put into place some kind of concussion management plan, not all stakeholders at the institutions were aware of them. In particular, the study questioned why only about 70 percent of schools had an "annual process for educating athletes about concussions," while at the same time 91 percent of schools said students were required to acknowledge their role

“Athlete acknowledgment may function as a means through which member schools aim to limit their institutional liability.”

in reporting symptoms. The authors concluded:

*“It is concerning that... there was not a significant relationship between implementation of the athlete education and the athlete acknowledgment components of the NCAA policy. Athlete acknowledgment may function as a means through which member schools aim to limit their institutional liability or as a strategy to encourage positive athlete concussion reporting behaviors. Insofar as increasing symptom reporting behaviors is an intended outcome, acknowledgment should be paired with appropriate education.”*³²

In July 2014, the NCAA agreed to settle a head injury class action by creating a \$70 million fund aimed at diagnosing potential brain trauma in thousands of current and former college athletes. The agreement covered not only football, but also other contact sports, including ice hockey, soccer, basketball, wrestling, and lacrosse. The fund only covered diagnosis, and did not include money to pay for health care costs of any player actually found to have suffered brain trauma.³³

Hockey and the Plight of the NHL Enforcers

Hockey has suffered from its own unsightly concussion problems, not least because of its continued acceptance of fighting. National Hockey League (NHL) players are five times more likely to suffer a concussion than athletes in the NFL.³⁴ Star players such as Eric Lindros and Pat Lafontaine have had their careers derailed by concussions, while one of the sport’s biggest stars, Sidney Crosby, was sidelined for ten

months after a suffering a blindside hit during the league’s showcase outdoor Winter Classic game in January 2011.

Crosby’s concussion reverberated throughout the hockey world. Later that year, the NHL both toughened its mandated protocols for head injuries—requiring that players with suspected concussions be examined for 15 minutes in a quiet room away from the ice—and banned all hits to the head.³⁵ But it’s the plight of its lesser stars, specifically the so-called “enforcers,” that poses the biggest legal challenge to the league.

In 2010, Bob Probert, a legendary and feared enforcer with 3,300 career penalty minutes, died just eight years after retirement. An autopsy revealed CTE, the first found in a modern-era NHL player.³⁶ In May 2011, former NHL enforcer Derek Boogaard died at the age of 28 from an overdose of prescription drugs. An autopsy revealed CTE, and Boogaard’s family sued the NHL two years later.³⁷ In August 2011, enforcer Rick Rypien, 27, died from an apparent suicide. A few weeks later, enforcer Wade Belak, 35, committed suicide just two months after retiring. The deaths of a handful of hockey’s hardest men in so short a time sent shockwaves throughout the sport, especially as one of the sport’s premier stars, Sidney Crosby, was concurrently sidelined by concussion.

In 2013, ten former players sued the NHL in a case that was eventually consolidated into a class action with more than 70 named plaintiffs, and hundreds more considering joining.³⁸ In 2014, the NHL announced concussions were down, even as there were several high profile incidents of concussions

being missed or players finding ways around the league protocols.³⁹

In February 2015, Steve Montador, a ten-year NHL veteran, died at the age of 35. Four days after his death, his baby son was born. An autopsy revealed widespread CTE, making Montador the fifth confirmed NHL player with the disease.⁴⁰ In September 2015, former enforcer Todd Ewen, 49, committed suicide. His family donated his brain to the Canadian Sports Concussion Research Project, in an effort to identify whether he suffered from CTE.⁴¹ Despite such negative publicity, in October 2015, Yahoo Sports obtained an internal memo from the NHL, indicating the league had “no desire” to settle the class action lawsuit against it by former players.⁴²

Soccer and the World Cup Final

The 2014 FIFA World Cup final, the second-biggest sporting event on the planet and the showpiece of the world’s most popular sport, was marred by the sight of Germany’s Christoph Kramer being allowed to play despite a brutal concussion witnessed by more than 900

million people watching around the world. Kramer was clearly dazed and confused, but TV audiences watched in horror as the German trainers allowed him to keep playing. Kramer wasn’t even sure what game he was playing by that point, and asked the referee if it was indeed the World Cup final, then played 15 more minutes before finally collapsing and being carried from the field.⁴³

The treatment of Kramer’s concussion was by no means the exception during the World Cup. Argentina’s Javier Mascherano and Pablo Zableta both continued to play after hard knocks to the head during their semi-final against Holland. An earlier game between England and Uruguay featured the sight of Uruguay players and trainers trying to slap awake Alvaro Pereira, who had been knocked unconscious by a knee to the head. Once awake, Pereira refused to be replaced and played the entire rest of the game. The team doctor, Alberto Pan, later claimed that he had run a full neurological exam and found the player normal.⁴⁴

CONCLUSION

“The Most Dangerous Man in Football,” is how ESPN described San Francisco 49ers linebacker Chris Borland just weeks before the start of the 2015 NFL season. But it had nothing to do with Borland’s standout rookie season the year before.⁴⁵ It was because, at the age of 24, and with no immediate medical issues, Borland had decided to retire because of the risk of head injuries.

Whereas in times past such a decision might have been seen as evidence of a lack of courage, Borland received almost unanimous support from fellow players and fans.⁴⁶ It was a clear indication that attitudes had changed even among the most stubborn stakeholders in the concussion debate—the players themselves.

There is, however, still a long way to go. On the plus side, almost every state has some version of a “When in Doubt, Sit Them Out” law, and there is no doubt that they have made a positive contribution. Research shows that emergency room visits for sport-related concussions in age groups covered by a return to play law more than double after the law’s implementation, suggesting that concussions are taken more seriously by all involved.⁴⁷

At the same time, very few such laws have something so simple as a requirement that parents be notified of a child’s traumatic brain injury. Most of these same state laws recognize that health professionals should decide whether student-athletes may return to play after a suspected concussion, yet only 37 percent of schools nationwide have access to full-time athletic trainers.⁴⁸ All but one state fail to include any kind of enforcement mechanism to ensure schools, organizations and individuals follow the guidelines.

If anything can motivate administrators and sports authorities to try and eliminate these kinds of discrepancies between intent and implementation, it is the prospect of litigation. The widespread inclusion of immunity language in return to play laws suggests that potential litigation was in the forefront of the minds of at least some of those involved in their passage. Yet almost every time a concussion case reaches a courthouse, the result is an improved concussion management policy and better treatment. School districts and sports organizations would do well to focus less on protecting themselves and more on protecting athletes.

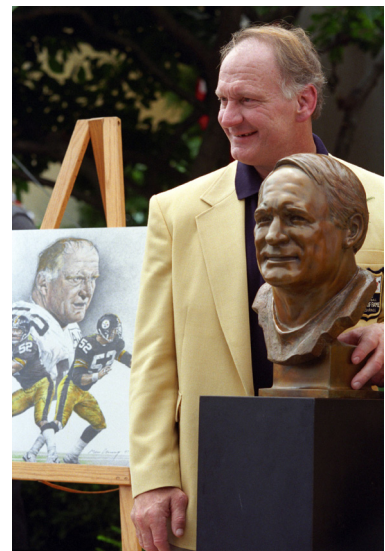
STATISTICS

- CDC estimates reveal that 1.6 million to 3.8 million sports-related concussions occur each year.⁴⁹
- Brain trauma affects one in three players in the National Football League.⁵⁰
- Pro football players are eight times more likely to develop Alzheimer's or dementia than the general population.⁵¹
- College football players suffer concussions at a rate of 6.3 concussions per 10,000 "athletic exposures" (each exposure representing a practice or game). For high school football players, the comparable figure is 11.2.⁵²
- College players with three or more concussions are over three times more likely than other players to sustain a new concussion.⁵³
- The rate of concussion in high school athletes more than doubled between 2005 and 2012, from 0.23 to 0.51 concussions per athlete exposure.⁵⁴
- 10 to 20 percent of concussion sufferers "are still experiencing symptoms anywhere from weeks to months to years later."⁵⁵
- Fewer than 10% of sport related concussions involve loss of consciousness (e.g., blacking out, seeing stars, etc.).⁵⁶
- The highest rate of concussions in NCAA sports is not football, but women's ice hockey. Female ice hockey players sustained concussions at a rate of 0.91 per 1,000 athletic exposures, more than twice that of football (0.37).⁵⁷

HIGH PROFILE CASES

Mike Webster

When “Iron Mike” Webster retired in 1990, after 15 years as a center for the Pittsburgh Steelers and Kansas City Chiefs, he had four Super Bowl rings and a legendary reputation as one of the toughest players the NFL had ever seen. By 1997, the same year he was named to the Pro Football Hall of Fame, Webster had been homeless for three years, living by turns in a hotel, at sports card shows around the country and in his car, and was beset by health problems. By 2002, Webster was dead at the age of 50. The autopsy was performed by Dr. Bennet Omalu, a forensic pathologist at the University of Pittsburgh, who found evidence of chronic traumatic encephalopathy, or CTE, in Webster’s brain. Omalu published his findings, thinking that the discovery would be welcomed by the National Football League (NFL). The NFL attacked Omalu’s findings and demanded a retraction.⁵⁸



Justin Strzelczyk

Pittsburgh Steelers offensive lineman Justin Strzelczyk died in 2004 in a fiery automobile crash at the age of 36. A guitar-playing, Harley-riding “bon vivant,” and so-called “perfect Steeler,” Strzelczyk’s post NFL-life had been marked by a steep descent into depression and paranoia. On the day of his death he offered cash and a crucifix to a stranger, paid for the man’s gas, then drove the wrong way down the highway to evade police. Strzelczyk’s truck hit a tanker truck, killing him instantly. Three years later, Dr. Bennet Omalu examined Strzelczyk’s brain and discovered CTE, at the time making Strzelczyk the fourth and youngest former NFL player to suffer the condition.⁵⁹

Andre Waters

Former Philadelphia Eagles defensive back Andre Waters committed suicide in November 2006, at the age of 44. When his brain was examined by Dr. Bennet Omalu, he was found to have suffered from CTE. Omalu described the brain as that of an 85-year-old man, and said that if he had lived another 10-15 years he would have been completely incapacitated.⁶⁰

Eric Lindros

Philadelphia Flyers star center Eric Lindros was forced to retire in 2007 after a series of concussions. Lindros, who had suffered three previously recognized concussions, was injured by an elbow to the head in March of 2000 and continued to play despite complaining of headaches, nausea and memory loss. Lindros would later tell reporters of the pressure he felt to keep playing, saying he wouldn't take himself out of a game but hoped the team would.⁶¹



Chris Henry

Chris Henry, a 26-year-old wide receiver with the Cincinnati Bengals, died in 2009 during a domestic dispute during which he fell or jumped from his fiancée's truck. An examination of Henry's brain found evidence of CTE, making him the first player to have died with the neurological illness while an active player. The previous youngest NFL player found to have CTE was Justin Strzelczyk, who was 36 and had been retired five years when he died.⁶²

Sidney Crosby

On January 1, 2011, during the Winter Classic game played outdoors at the Pittsburgh Steelers' Heinz Field, one of hockey's biggest stars, Sidney Crosby, was felled by a blindside hit and concussed. Crosby played on in the game, then played in the following game, only to be concussed again. Crosby would not



play again that season. Later that year, the NHL toughened its concussion management protocols and banned all hits to the head.⁶³

Dave Duerson

Dave Duerson, the former Pro-Bowl safety for the Super Bowl champion 1985 Chicago Bears, committed suicide in February 2011 after struggling with collapsing finances and a raft of physical ailments. Ironically, Duerson had been responsible for turning down the claims of many former players via his role as a trustee on the NFL's pension board. Duerson shot himself in the chest, after first sending out texts pleading that his brain be preserved and sent to the NFL's brain bank in Boston. On May 2, 2011, doctors at the brain bank confirmed that Duerson had been suffering from a "moderately advanced" case of CTE.⁶⁴



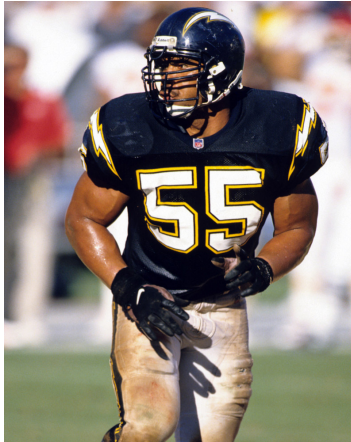
Derek Boogaard

In May 2011, former NHL enforcer Derek Boogaard died at the age of 28 from an overdose of prescription drugs. An autopsy revealed CTE and Boogaard's family sued the NHL two years later. Boogaard's death was followed in August 2011, by the deaths of fellow enforcers Rick Rypien, 27, and Wade Belak, 35.⁶⁵

Hugo Lloris

In 2013, Hugo Lloris, goalkeeper for English Premier League side Tottenham Hotspur, was knocked out by the knee of an oncoming forward. Tottenham's medical staff initially signaled for his replacement to come on, but when Lloris angrily insisted he be allowed to play on, they acquiesced and allowed him to continue. The Tottenham medical staff and manager came under heavy fire for allowing Lloris to continue. The following week, Lloris was deemed unfit to play. The incident was a catalyst to new rules being adopted giving medical staff the ability to overrule players and managers, and the addition of independent medical professionals to help with diagnosis.⁶⁶





Junior Seau

In May 2013, Junior Seau, an all-star linebacker for 20 years with the San Diego Chargers, Miami Dolphins, and New England Patriots, committed suicide, shooting himself in the chest much like Dave Duerson before him. Seau had no documented concussions, though teammates estimated the reality was he may have suffered as many as 1,500 in his career. Seau's family described a long descent into depression prior to his death. A team of independent researchers, unaware whose brain they were studying, later confirmed the presence of CTE.⁶⁷

Christoph Kramer

The 2014 FIFA World Cup final, the second-biggest sporting event on the planet, and the showpiece of the world's most popular sport, was marked by the sight of Germany's Christoph Kramer being allowed to play despite an obvious and brutal concussion. It was obvious to the more than 900 million people watching that Kramer was dazed and confused, but the German trainers allowed him to keep playing. Kramer wasn't even sure what game he was playing by that point, and asked the referee if it was indeed the World Cup final. Kramer played 15 more minutes before finally collapsing and being carried from the field.⁶⁸



A TIMELINE OF CONCUSSIONS

<p>“Protect young people...” - NCAA</p>	<p>1906</p> <p>The Intercollegiate Athletic Association of the United States (now the NCAA) is founded as a result of President Theodore Roosevelt’s efforts to reform safety standards in college athletics. Among its central tenets is the pledge to “protect young people from the dangerous and exploitive athletics practices of the time.”</p>
<p>The NCAA warns of the dangers of concussions in its <i>Medical Handbook for Schools and Colleges</i>. It states, “the seriousness of [concussions] is often overlooked” and that concussions “should not be regarded lightly.” Recommendations for immediate treatment include rest, constant supervision, and x-rays of the brain. It also suggests hospital treatment for players with recurring symptoms until they are symptom-free for 48 hours and recommends that any player who experiences symptoms for longer than 48 hours “should not be permitted to compete for 21 days or longer, if at all.”⁶⁹</p>	<p>1933</p>
<p>1952</p>	<p><i>The New England Journal of Medicine</i> publishes a study of traumatic injuries in college sports. The study concludes that student-athletes who suffer three concussions should no longer be allowed to play body-contact sports.⁷⁰</p>
<p>Dr. Thomas Gennarelli publishes research showing that brain damage can be caused simply by the head rapidly accelerating or decelerating, without a blow to the head.⁷¹</p> <p>Concussions become mainstream news, as <i>The Wall Street Journal</i> runs a front page story titled “The Silent Epidemic.”</p>	<p>1982 “The Silent Epidemic”</p>
<p>1983</p>	<p>John Povlishock publishes research showing that concussions may create lasting brain damage.⁷²</p>

The American Medical Association (AMA) formally calls for a ban on boxing. An AMA study of active and retired boxers finds 87 percent show definite signs of brain damage.⁷³

1984

1986

Dr. Robert Cantu, Chairman of Sports Medicine at Emerson Hospital in Concord, MA, publishes “Guidelines for return to contact sports after a cerebral concussion.” Cantu reminds other physicians that they may face lawsuits over poor concussion management because there was now proof that allowing concussed players to play before their brain had healed could lead to death.⁷⁴

Pittsburgh Steelers neurosurgeon Joe Maroon enlists neuropsychologists to design tests that will measure players’ brain function and establish baseline data, making the Steelers the first NFL team to employ baseline testing. Twenty-seven players voluntarily agree to take the test.

Washington state high school sophomore Brandon Schultz lapses into a coma after suffering his second serious concussion in a week. Despite complaining of headaches all week, none of his coaches had advised he seek medical advice or suggested he be held out of the next game. Schultz is left cognitively impaired, partially blind, and physical disabled. In 1998, in a landmark settlement, the school district agrees to pay for the estimated \$12.6 million in ongoing health care Schultz will need for the rest of his life.⁷⁵

1993

After the game, Aikman does not know where he is and has no recollection of playing. He plays in the Super Bowl a week later.

1994

Cowboys quarterback Troy Aikman suffers a high profile concussion during the NFC Championship Game. After the game, Aikman does not know where he is and has no recollection of playing. He plays in the Super Bowl a week later.

Chicago Bears running back Merrill Hoge suffers a concussion in a game, and on the flight home is cleared to play the next week, despite not knowing where he was. Hoge, who had taken Maroon’s cognitive test with the Steelers the year before, retakes the test. His scores are dramatically lower. Three days later, Hoge retires at the age of 29. Hoge would later successfully sue the Bears’ doctor.⁷⁶

In addition to Hoge, there are several high-profile concussions during the NFL season, prompting writers to label it the “Season of Concussion.” On one Sunday, quarterbacks Aikman, Chris Miller and Vinny Testaverde are all knocked out.⁷⁷

“[C]oncussions accounted for at least 60 percent of head injuries in each of the sports monitored.”

- NCAA

The NFL institutes the Mild Traumatic Brain Injury (MTBI) Committee. The MTBI would later claim football players did not suffer from degenerative brain diseases. When researchers began proving football players, such as Mike Webster, did indeed suffer from such diseases, the MTBI demanded a retraction.

The NCAA’s Assistant Director of Sports Sciences, Randall Dick, publishes an article that finds that “concussions accounted for at least 60 percent of head injuries in each of the sports monitored.”⁷⁸

Around 200 brain specialists and NFL team doctors gather in Pittsburgh for the “first cross-disciplinary attempt to confront the many difficult issues regarding evaluation and treatment of sports-related concussion.”⁷⁹

1996

The NHL mandates baseline testing.

The American Academy of Neurology establishes return-to-play guidelines for concussed athletes.

The guidelines recommend athletes who have suffered a loss of consciousness be “withheld from play until asymptomatic for 1 week at rest and with exertion.” Athletes that suffer a second such concussion are to be withheld for a minimum of one asymptomatic month.⁸⁰

1997

Dr. Michael Collins, later director of the University of Pittsburgh Medical Center (UPMC) Sports Medicine Concussion Program, publishes the results of a baseline testing program conducted on college football players. The paper, published in the *Journal of the American Medical Association* (JAMA), provides evidence that neuropsychological testing is effective at identifying concussions even when players appear healthy. The paper also finds that those with a history of multiple concussions are far more likely to fail the tests.⁸¹

In a letter that would become significant to the NFL Concussion Litigation a decade later, the NFL retirement board grants former Pittsburgh Steeler Mike Webster “total and permanent” disability benefits. The letter states that medical reports, including one from an NFL-selected neurologist, “indicate that his disability is the result of head injuries suffered as a football player with the Pittsburgh Steelers and Kansas City Chiefs.” The board also concludes, despite medical advice to the opposite, that Webster had not been too disabled to work until years after retirement, drastically reducing the benefits for which Webster is eligible.⁸²

1999 **Mike Webster’s “disability is the result of head injuries suffered as a football player with the Pittsburgh Steelers and Kansas City Chiefs.”**

- NFL Retirement Board

Bob Fitzsimmons, Webster's lawyer, files suit against the NFL.

“... there is no evidence of any long-term, lasting impact from the head trauma that he's suffering right now.”
- Jerry Jones on Troy Aikman

2000

The NFL rejects the American Academy of Neurology guidelines.⁸³

Cowboys owner Jerry Jones weighs in on Troy Aikman's return to play after a concussion. Jones says, “I'm comforted by the fact that every study that we've been privy to, and the things that Troy has looked into, is that there is no evidence of any long-term, lasting impact from the head trauma that he's suffering right now.”⁸⁴

On December 10, Troy Aikman suffers his tenth concussion. He never plays again.

Concussion experts from around the world convene for the First International Symposium on Concussion in Sport.

2001

Mike Webster dies. Dr. Bennet Omalu conducts the autopsy.

2002

Former Pittsburgh Steeler Mike Webster dies of a suspected heart attack. His autopsy is conducted by forensic pathologist Bennet Omalu. Omalu diagnoses Webster with Chronic Traumatic Encephalopathy (CTE), and three years later publishes a landmark paper on the subject.⁸⁵

Dr. Kevin Guskiewicz, from the University of North Carolina Department of Exercise and Sport Science, publishes a landmark paper. It suggests “that players with a history of previous concussions are more likely to have future concussive injuries than those with no history; 1 in 15 players with a concussion may have additional concussions in the same playing season; and previous concussions may be associated with slower recovery of neurological function.”⁸⁶

2003

A Virginia Tech study finds that football players are struck in the head up to 50 times a game with blows similar to a car crash.⁸⁷

An Indiana State University study finds that most serious injuries in college football are never reported.⁸⁸

2004

Elliot Pellman, chair of the NFL's MTBI committee, publishes a study that claims football players rapidly recover from multiple traumatic brain injuries. “NFL players did not demonstrate evidence of neurocognitive decline after multiple (three or more) MTBIs or in those players out 7+ days,” Pellman writes.⁸⁹

Former Steelers guard Terry Long commits suicide by drinking antifreeze. Bennet Omalu later finds evidence of CTE in Long's brain.

Dr. Kevin Guskiewicz and Dr. Julian Bailes publish a study in *Neurosurgery*. It concludes “that the onset of dementia-related syndromes may be initiated by repetitive cerebral concussions in professional football players.”⁹⁰

Elliot Pellman, of the NFL's MTBI committee, publishes another study. It claims, “Players who are concussed and return to the same game have fewer initial signs and symptoms than those removed from play.”⁹¹

2005

“Players who are concussed and return to the same game have fewer initial signs and symptoms than those removed from play.”

- NFL's MTBI Committee

“The brain of an 85-year-old.”
Bennet Omalu's description
of 44-year-old Andre Waters'
brain

2006

The NFL's MTBI committee criticizes Bennet Omalu's published findings and demands a retraction.

Former Philadelphia Eagles safety Andre Waters commits suicide at the age of 44. Omalu examines his brain and finds CTE, describing it as the brain of an 85-year-old.⁹²

Seven years after filing Mike Webster's disability claim, and four years after Webster's death, attorney Bob Fitzsimmons wins the family's lawsuit against the NFL's pension board. Webster's family receives approximately \$2 million.⁹³

Dr. Julian Bailes and Dr. Kevin Guskiewicz publish a study in the *Journal of the American College of Sports Medicine*. It concludes, “Professional football players with a history of three or more concussions are at a significantly greater risk for having depressive episodes later in life compared with those players with no history of concussion.”⁹⁴

Bennet Omalu analyzes the brain of former Pittsburgh Steelers offensive lineman Justin Strzelczyk, who had died in a fiery high-speed crash in 2004. Strzelczyk was in his thirties and had never had a documented concussion, but in the six years since he had stopped playing had descended into serious depression and paranoia. Omalu again finds CTE.⁹⁵

NFL commissioner Roger Goodell orders league-wide use of baseline neurological tests.

***The New York Times* reports that at least 50 high school or younger football players have been killed or sustained serious head injuries since 1997.**⁹⁶

2007

The NFL issues a concussion pamphlet for players.

The pamphlet includes the statement: “Current research with professional athletes has not shown that having more than one or two concussions leads to permanent problems if each injury is managed properly. It is important to understand that there is no magic number for how many concussions is too many. Research is currently underway to determine if there are any long-term effects of concussions in NFL athletes.”⁹⁷

2008

New Jersey high school football player Douglas Morales dies after sustaining a head injury in practice. The school district eventually settles with Morales’ family.

Washington state enacts the Zackery Lystedt Law, becoming the first state in the nation to enact a comprehensive youth sports concussion safety law.

The law, also known as “When in Doubt, Sit Them Out,” was drafted by Richard Adler, the attorney for Zackery Lystedt, the student who spent nine months in a coma when allowed back into a game after a concussion in 2006, when he was 13-years-old. Other states soon follow with “When in Doubt, Sit Them Out” laws.

“When in Doubt, Sit Them Out.”

In September, a study commissioned by the NFL and conducted by the University of Michigan’s Institute for Social Research finds that NFL players suffer Alzheimer’s disease at rates of up to 19 times more than normal rates. The NFL does not support the results.

NFL spokesman Greg Aiello tells *The New York Times* that the study “did not formally diagnose dementia, that it was subject to shortcomings of telephone surveys and that ‘there are thousands of retired players who do not have memory problems.’”⁹⁸

2009**In December, the NFL concedes for the first time that concussions may have lasting consequences.**

NFL spokesman Greg Aiello states, “It’s quite obvious from the medical research that’s been done that concussions can lead to long-term problems,” the first time the organization has made such an admission.⁹⁹

“It’s quite obvious from the medical research that’s been done that concussions can lead to long-term problems.”

- NFL Spokesman

The NFL accepts the resignations of the co-chairmen of its discredited brain injury committee and configures a new one: the Head, Neck and Spine Committee. The MTBI Committee had suggested that players from 1996 through 2001 who sustained three or more concussions “did not demonstrate evidence of neurocognitive decline.”¹⁰⁰

In Congressional hearings, the NFL refuses to confirm a link between football and degenerative brain diseases.

During Super Bowl week, neuropathologist Ann McKee presents the youngest known case of CTE at Boston University's Center for the Study of Traumatic Encephalopathy. McKee had found CTE in an 18-year-old high school football player who had suffered multiple concussions.¹⁰¹

The NCAA's Committee on Safeguards and Medical Aspects of Sports formally requests that the Playing Rules Oversight Panel adopt standardized concussion treatment rules. The proposal is rejected. NCAA Medical Director David Klossner urges rules officials to reconsider. Associate Director of Playing Rules Administration, Ty Halpin makes fun of him in internal emails.¹⁰²

University of Pennsylvania football player Owen Thomas commits suicide at the age of 21. An autopsy reveals CTE—the first found in a college football player—despite no documented concussions, raising the possibility that Thomas was sickened by the accumulation of subconcussive impacts.¹⁰³

The NCAA holds its first concussion summit. The results of a survey are presented showing that only 66 percent of NCAA schools perform baseline concussion testing and less than 50 percent required a physician to see all athletes who suffer concussions. In addition, 39 percent have no guidelines on how long athletes should sit out before returning to play, and nearly half said they allow students to return to play in the same game in which he or she suffered a concussion.

The NCAA adopts a Concussion Management Policy that requires member schools to develop a concussion management plan for the 2010-2011 school year. However, The NCAA's director of enforcement, Chris Strobel, acknowledges the organization has no intention of enforcing the policy, writing, "The legislation was specifically written to require institutions to have a plan and describe what minimum components had to be part of the plan — not about enforcing whether or not they were following their plan."¹⁰⁴

2010

“The legislation was specifically written to require institutions to have a plan and describe what minimum components had to be part of the plan — not about enforcing whether or not they were following their plan.”
- NCAA

Sidney Crosby, one of hockey's biggest stars, is concussed by a blindside hit to the head during the the NHL's showpiece Winter Classic game on New Year's Day. He does not play for another 10 months.¹⁰⁵

The first concussion lawsuit is filed against the NFL (since consolidated).

Former Eastern Illinois football player Adrian Arrington files a concussion lawsuit against the NCAA.¹⁰⁶

The NHL institutes a new concussion policy. The policy requires players with a suspected concussion to be examined by a physician in a quiet room.

The NFL institutes a new concussion policy. The policy encourages medical staff to take players out of a game if a concussion is suspected. Once pulled from a game, both a team doctor and an independent doctor must approve his return. During the season, however, the NFL comes under fire for allowing players with "head injuries" to keep playing.¹⁰⁷

Former NHL defenseman Derek Boogaard dies at the age of 28 from an overdose of prescription drugs. An autopsy reveals CTE. Boogaard's family sues the NHL two years later.¹⁰⁸

Former Chicago Bears safety Dave Duerson, commits suicide by shooting himself in the chest after leaving a suicide note asking that his brain be donated to the NFL brain bank. An autopsy confirms that Duerson suffered from a "moderately advanced" case of CTE.¹⁰⁹

The first concussion lawsuit is filed against the NFL.

2011

2012

Between 2010 and 2012, Pop Warner, the nation's largest youth football program, experiences a 9.5 percent drop in participation, the largest in the organization's 85-year history.¹¹⁰

***A Chronicle of Higher Education* survey of the 120 largest college football programs finds that 53 percent of athletic trainers felt they were under pressure from coaches to return a player faster than was medically warranted.** In addition, 32 respondents said coaching staff had influence over their continued employment.¹¹¹

2013

After apparent pressure from the NFL, ESPN drops its partnership with PBS' Frontline for the documentary *League of Denial*, which chronicles the league's handling of the concussion crisis.¹¹²

Ten former hockey players file a lawsuit against the NHL, alleging negligence and fraud in how the league handled concussions during their careers.¹¹³

In the case of deceased Frostburg State football player Derek Sheely, the NCAA denies that it has a “legal duty to protect student-athletes.”¹¹⁴

2014

The NCAA settles a class action lawsuit by creating a \$70 million fund to diagnose potential brain trauma in thousands of current and former players. Football, ice hockey, soccer, basketball, wrestling, field hockey and lacrosse are covered under the agreement.¹¹⁵

The NCAA releases new guidelines limiting live contact to two practices per week in an effort to address concussion safety. The guidelines are voluntary with no enforcement protocol.¹¹⁶

In January, five NCAA football conferences create the Concussion Safety Protocol Committee to review and approve schools’ concussion procedures. While the committee advocates for guidelines such as giving medical personnel unchallenged authority to treat players, it is given no ability to assess penalties for inadequate guidelines, making its operation academic.¹¹⁷

The NFL brain bank reports 87 out of 91 examined former players have tested positive for CTE.¹¹⁸

Steve Montador, a 10-year NHL veteran, dies at the age of 35. An autopsy reveals widespread CTE, making Montador the fifth confirmed NHL player with the disease.¹¹⁹

2015

The NFL brain bank reports 87 out of 91 examined former players have tested positive for CTE.

STATE LAWS

In 2010, only 10 states had laws addressing traumatic brain injuries in youth sports. Since Washington state enacted the Zackery Lystedt law in 2009, every state, with the exception of Wyoming, has enacted some form of “When In Doubt, Sit Them Out” law (Wyoming enacted a law, although it is so weak it is not counted in this table).

There is no question these laws have had a positive effect. Emergency room visits for sport-related concussions in age groups covered by a return to play law more than double after the law’s implementation, suggesting that concussions are taken more seriously by all involved.¹²⁰

However, there are significant gaps in many of the state laws. Most states require some form of education of student athletes and their parents, but in almost every state this takes the form of nothing more than a piece of paper that must be signed by the athlete and parent before participation. Given the significant number of permission slips and other documentation that students and parents must sign, it is hard to imagine this step succeeds in providing anything approaching comprehensive education.

The Key Components of Return to Play Laws

Every state could take steps to strengthen the rules on concussion management. Here are some of the best ways to protect student-athletes:



Zackery Lystedt today

Licensed Physician/TBI Training

Almost every state requires student-athletes with suspected concussions to be removed from play. Most, but not all require a student be cleared by a health professional that is either a licensed physician, or someone trained specifically in TBI management.

Parental Notification

Only six states require parents be notified of their child's traumatic brain injury. Vermont goes even further, requiring that visiting team's athletic directors be notified of any concussions within 48 hours of a game.

Enforcement

A law is only as good as its enforcement. Only one state, Pennsylvania, has any kind of enforcement mechanism. What's more, many states grant immunity to coaches, trainers and school districts.

Middle School

Most state laws only cover high school. The same research that shows increased emergency room visits in age groups

covered by state laws also shows no significant changes in age groups not covered, suggesting populations such as middle schoolers and adults are not treated with the same diligence. Colorado and Idaho extends their concussion laws all the way down to middle school (though Colorado is one of the few states that does not require athlete and parent education).

Medical Trainers

Few states require medical trainers at all games involving collision sports. Though such a measure can be seen as imposing logistical challenges on sports, failure to provide trainers just pushes all responsibility for injury management on coaches and parents.

Baseline Testing and Concussion Tracking

Rhode Island, encourages the use of baseline testing and the attendance of medical trainers at all athletic events, and Tennessee has a brain trauma registry to study incidence information, and disseminates a list of public and private agencies which can provide services to people with TBIs.

<p>State</p>	<p>Requires student athletes with suspected TBI to be removed from play</p>	<p>Requires RTP clearance from health professional</p>	<p>Requires clearing health professional to be licensed physician or trained in TBI management</p>	<p>Requires Training for Coaches</p>	<p>Requires Athlete Education</p>	<p>Requires Parent Education</p>	<p>Required Parent Notification of suspected or diagnosed TBI</p>	<p>Immunity Provisions</p> <p>A person who conducts an evaluation... and who is not paid for conducting the evaluation may not be held liable for civil damages resulting from an act or omission during the evaluation, except that the person may be held liable for reckless or intentional misconduct and for gross negligence.</p> <p>A school district may not be held liable for an injury to or the death of a person caused by a concussion and resulting from the action or inaction of a person employed by or under contract with a nonprofit youth organization if</p> <p>(1) the action or inaction occurred during the delivery of services by the district or organization in compliance with AS 14.30.142;</p> <p>(2) the organization is under contract with the district to provide the services; and</p> <p>(3) before the provision of services, the organization provided to the district written verification of</p> <p>(A) a valid insurance policy covering the injury or death in an amount not less than \$50,000 for each person and \$100,000 for each incident;</p> <p>(B) compliance with the protocol for prevention and reporting of concussions required in AS 14.30.142.</p> <p>(b) This section may not be construed to impair or modify the ability of a person to recover damages for harm caused by the negligent or reckless actions of an employee or contractor of a school district or by the existence of a condition, equipment, program, or structure known by the school district or organization to be unsafe.</p>
<p>Alabama Ala. Code §22-11E-2</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>		
<p>Alaska AS 14.30.142 & 143</p>	<p>✓</p>	<p>✓</p>	<p>✓</p>		<p>✓</p>	<p>✓</p>		

State	Requires student athletes with suspected TBI to be removed from play	Requires RTP clearance from health professional	Requires clearing health professional to be licensed physician or trained in TBI management	Requires Training for Coaches	Requires Athlete Education	Requires Parent Education	Required Parent Notification of suspected or diagnosed TBI	Immunity Provisions
Arizona A.R.S. § 15-341	✓	✓	✓		✓	✓		A health care provider who is a volunteer and who provides clearance to participate in athletic activity on the day of the suspected injury or on a subsequent day is immune from civil liability with respect to all decisions made and actions taken that are based on good faith implementation of the requirements of this subdivision, except in cases of gross negligence or wanton or willful neglect. A school district, school district employee, team coach, official or team volunteer or a parent or guardian of a team member is not subject to civil liability for any act, omission or policy undertaken in good faith to comply with the requirements of this subdivision or for a decision made or an action taken by a health care provider. A group or organization that uses property or facilities owned or operated by a school district for athletic activities shall comply with the requirements of this subdivision. A school district and its employees and volunteers are not subject to civil liability for any other person or organization's failure or alleged failure to comply with the requirements of this subdivision.
Arkansas A.C.A. § 6-18-710	✓	✓	✓	✓	✓	✓		A volunteer... who authorizes a youth athlete to return to play is not liable for civil damages resulting from any act or omission in the rendering of care other than acts or omissions constituting gross negligence or willful or wanton misconduct.
California Cal. Educ. Code §499475	✓	✓	✓		✓	✓		
Colorado C.R.S. 25-43-101 through 103	✓	✓		✓			✓	Nothing in this article abrogates or limits the protections applicable to public entities and public employees pursuant to the Colorado Governmental Immunity Act.
Connecticut C.G.S.A. § 10-149b, 10-149c	✓	✓	✓	✓	✓	✓	✓*	

State	Requires student athletes with suspected TBI to be removed from play	Requires RTP clearance from health professional	Requires clearing health professional to be licensed physician or trained in TBI management	Requires Training for Coaches	Requires Athlete Education	Requires Parent Education	Required Parent Notification of suspected or diagnosed TBI	Immunity Provisions
Delaware 14 Del. C. § 303	✓	✓	✓	✓	✓	✓		
DC D.C. Code §§7-2871.01 to 2871.05	✓	✓	✓	✓	✓	✓		
Florida FL ST § 943.0438 and FL ST § 1006.20	✓	✓	✓	✓	✓	✓		
Georgia Ga. Code Ann., § 20-2-324.1	✓	✓			✓	✓		This Code section shall not create any liability for, or create a cause of action against a local board of education, the governing body of a nonpublic school, the governing body of a charter school, or a public recreation facility or the officers, employees, volunteers, or other designated personnel of any such entities for any act or omission to act related to the removal or nonremoval of a youth athlete from a game, competition, tryout, or practice pursuant to this Code section; provided, however, that for purposes of this subsection, other designated personnel shall not include health care providers unless they are acting in a volunteer capacity.
Hawaii 2012 Hawaii Laws Act 197	✓	✓		✓	✓	✓		
Idaho I.C. § 33-1625	✓	✓	✓		✓	✓		If an individual reasonably acts in accordance with the protocol developed... then acting upon such protocol shall not form the basis of a claim for negligence in a civil action... If a youth sport organization or association is in full compliance with this section, then the youth sport organization or association shall be afforded the same protections from liability in a civil action.

State	Requires student athletes with suspected TBI to be removed from play	Requires RTP clearance from health professional	Requires clearing health professional to be licensed physician or trained in TBI management	Requires Training for Coaches	Requires Athlete Education	Requires Parent Education	Required Parent Notification of suspected or diagnosed TBI	Immunity Provisions
Iowa I.C.A. § 280.13C	✓	✓	✓		✓	✓		
Illinois 105 ILCS 5/22-80; 105 ILCS 25/1.15	✓		✓	✓	✓	✓		
Indiana IC 20-34-7-1 to 6	✓	✓	✓	✓	✓	✓		A volunteer health care provider who in good faith and gratuitously authorizes a student athlete to return to play is not liable for civil damages resulting from an act or omission in the rendering of an evaluation, except for acts or omissions that constitute gross negligence or willful or wanton misconduct.
Kansas K.S.A. 72-135	✓	✓			✓	✓		If the health care provider who provides the clearance to return to play or practice is not an employee of the school district, such health care provider shall not be liable for civil damages resulting from any act or omission in the rendering of such care, other than acts or omissions constituting gross negligence or willful or wanton misconduct.
Kentucky KRS 160.445	✓	✓	✓	✓	✓	✓		
Louisiana LA RS 40:1299.18 1 to 1299.185	✓	✓	✓	✓	✓	✓	✓	This Section does not create any liability for, or create a cause of action against, a school, its officers, or its employees, an organization or association of which a school or school district is a member, a private or public school, a private club, a public recreation facility, or an athletic league when such person or entity has complied with the provisions of this Part.
Maine 2011 S.P. 654 125th Leg., 2nd Reg. Sess.	✓	✓	✓	✓	✓	✓		
Maryland MD Code,	✓	✓	✓		✓	✓		

State	Requires student athletes with suspected TBI to be removed from play	Requires RTP clearance from health professional	Requires clearing health professional to be licensed physician or trained in TBI management	Requires Training for Coaches	Requires Athlete Education	Requires Parent Education	Required Parent Notification of suspected or diagnosed TBI	Immunity Provisions
1304								
Nebraska Neb. Rev. St. §§ 71-9101 to 9106	✓	✓	✓	*	✓	✓	✓	Nothing in the Concussion Awareness Act shall be construed to create liability for or modify the liability or immunity of a school, school district, city, village, business, or nonprofit organization or the officers, employees, or volunteers of any such school, school district, city, village, business, or nonprofit organization.
Nevada N.R.S. 386.435, 392.452, NAC 386.832	✓	✓		✓	✓	✓		No person who authorizes a student-athlete to return to play shall be liable for civil damages resulting from any act or omission in the rendering of such care, other than acts or omissions constituting gross negligence or willful or wanton misconduct.
New Hampshire N.H. Rev. Stat. §§200:49 to 200:52	✓	✓	✓		*	*		An employee of a school administrative unit, school, or chartered public school, or a school volunteer, pupil, parent, legal guardian, or employee of a company under contract to a school, school district, school administrative unit, or chartered public school, shall be immune from civil liability for good faith conduct arising from or pertaining to the injury or death of a student-athlete provided the action or inaction was in compliance with this subdivision and local school board policies relative to the management of concussions and head injuries. This limitation of liability shall extend to school-sponsored athletic activities.
New Jersey N.J.S.A. 18A:40-41.1 to 40.5	✓	✓	✓	✓	✓	✓		A school district and nonpublic school shall not be liable for the injury or death of a person due to the action or inaction of persons employed by, or under contract with, a youth sports team organization that operates on school grounds, if the youth sports team organization provides the district or nonpublic school, as applicable, with the following: (1) proof of an insurance policy of an amount of not less than \$50,000 per person, per occurrence insuring the youth sports

State	Requires student athletes with suspected TBI to be removed from play	Requires RTP clearance from health professional	Requires clearing health professional to be licensed physician or trained in TBI management	Requires Training for Coaches	Requires Athlete Education	Requires Parent Education	Required Parent Notification of suspected or diagnosed TBI	Immunity Provisions
New Mexico NMSA 1978, § 22-13-31	✓	✓		✓	✓	✓		Team organization against liability for any bodily injury suffered by a person; and (2) a statement of compliance with the school district or nonpublic school's policies for the management of concussions and other head injuries.
New York NY EDUC § 305:42	✓	✓	✓	✓	✓	✓		
North Carolina NCGSA §115C-12 (23)	✓	✓		*	*	✓		
North Dakota NDCC, 15.1-18.2-04	✓	✓	✓	✓	✓	✓		
Ohio ORC 3313.539 3319.303 3707.511 3707.52 3707.521	✓	✓	✓	✓		✓*		A school district, a chartered or nonchartered nonpublic school, any officer member of a school district board of education, or school district employee or volunteer, including a coach or referee, is not liable in damages in a civil action for injury, death, or loss to person or property allegedly arising from providing services or performing duties under this section, unless the act or omission constitutes willful or wanton misconduct.
Oklahoma 70 Okl. St. Ann. § 24-155	✓	✓	✓		✓	✓		A volunteer who authorizes a youth athlete to return to participation shall not be liable for civil damages resulting from any act or omission in the rendering of such care, other than acts or omissions constituting gross negligence or willful or wanton misconduct.

State	Requires student athletes with suspected TBI to be removed from play	Requires RTP clearance from health professional	Requires clearing health professional to be licensed physician or trained in TBI management	Requires Training for Coaches	Requires Athlete Education	Requires Parent Education	Required Parent Notification of suspected or diagnosed TBI	Immunity Provisions
Oregon O.R.S. § 336.485, § 417.875	✓	✓		✓	✓	✓		Any person who regularly serves as a coach or as a referee and who complies with the provisions of this section is immune from civil or criminal liability related to a head injury unless the person acted or failed to act because of gross negligence or willful or wanton misconduct.
Pennsylvania ^a 24 P.S. § 5323	✓*	✓		✓	✓	✓		Nothing in this act shall be construed to create, establish, expand, reduce, contract or eliminate any civil liability on the part of any school entity or school employee. (2) Any coach acting in accordance with subsections (c) [removal from play] and (d) [return to play] shall be immune from any civil liability.
Rhode Island RI Gen Laws 1956, § 16-91-1 to 4	✓	✓	✓	✓	✓	✓		
South Carolina S.C. Code Ann. § 59-63-75	✓	✓			✓	✓		The athletic trainer, physician, physician assistant, or nurse practitioner who evaluates the student athlete during practice or an athletic competition and authorizes the student athlete to return to play is not liable for civil damages resulting from an act or omission in rendering this decision, other than acts or omissions constituting gross negligence or willful, wanton misconduct. This immunity applies to an athletic trainer, physician, physician assistant, or nurse practitioner serving as a volunteer.
South Dakota SDCL §§ 13-36-9 to 14	✓	✓	✓	✓	✓	✓		Provisions do not create any liability for, or create any cause of legal action against, a school, a school district, or any officer or employee of a school or school district.
Tennessee TN Code § 68-55-502 and 503	✓	✓	✓	✓	✓	✓		No licensed health care professional or other person acting in good faith... shall be liable on account of any act or omission in 'good faith' while so engaged; provided, that "good faith" shall not include willful misconduct, gross negligence or reckless disregard.
Texas TX	✓	✓		✓	✓	✓		[Does not] waive any immunity from liability [or] create any cause of action or liability.

Code, § 18-2-25a										
Wyoming Wyo. Stat. Ann. 21-2-202 and 21-3-110(a)(xxxii)	Requires student athletes with suspected TBI to be removed from play	Requires RTP clearance from health professional	Requires clearing health professional to be licensed physician or trained in TBI management	Requires Training for Coaches	Requires Athlete Education	Requires Parent Education	Required Parent Notification of suspected or diagnosed TBI	Immunity Provisions	Implementation of this paragraph shall be subject to the immunity provisions of the Wyoming Governmental Claims Act.	
*	*			✓	✓	✓				

Connecticut added parental notification in May 2015 through [Public Act 14-66: An Act Concerning Youth Athletics and Concussions](#).
 Minnesota only requires student/parent education if a consent form is already required, in which case, concussion information is on that form.
 Missouri's information sheet must only be signed by the parent, not the athlete themselves.
 Nebraska requires that training for coaches be "made available," but does not require coaches to be so trained.
 New Hampshire requires materials be distributed, but does not require any confirmation of receipt or other steps.
 North Carolina requires coaches and athletes receive a concussion information sheet, but does not require acknowledgement of receipt or specific coach training.
 Pennsylvania, which mandates suspensions of coaches found in violation of concussion protocols, is the only state to include an enforcement mechanism with its return-to-play law.
 Wyoming calls for school districts to develop concussion protocols, but specifically states that no school district is required to adopt the protocols.

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