Manufacturing Doubt: How the NFL Tried to Hijack Science

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The industry’s playbook of casting doubt on public health issues is a well-recognized holdover from the days of Big Tobacco. Despite the fact that this strategy ultimately cost Big Tobacco billions of dollars, the National Football League adopted it in an effort to conceal the long-term risks of playing football. Indeed, long before the current wave of publicity about the hazards of football, insurance companies downplayed concussions as unworthy of concern and perpetuated “the myth” that post concussion syndrome was “controversial” and the result of secondary gain. Thus, as in the case of Big Tobacco’s manipulation of the science of cancer and circulatory disease, the science of brain injuries surrounding postconcussion syndrome, second impact syndrome, and chronic traumatic encephalopathy (CTE) has been burdened with a false, industry-inspired dispute regarding their diagnosis and even their very existence.

At the heart of these disputes is the question of whether repetitive, or single-incident, brain trauma can lead to permanent damage. This faux dispute presents a twofold question: (1) are concussions “serious injuries” that must be conservatively managed in order to prevent catastrophic consequences; and (2) can seemingly innocuous subconcussions lead to neurodegenerative diseases, such as CTE?

These questions pose significant public health issues that go far beyond sports and affect numerous members of our society. For example, thousands of veterans are returning from the theaters of war suffering from traumatic brain injuries. Additionally, as lawyers we frequently encounter clients who have been exposed to brain injuries in car wrecks, falls, and other daily hazards extant in routine walks of life. Must we answer these threshold questions before we as a society can adequately tackle the many challenges that brain injuries present?

To be sure, even though the science of brain injury is rapidly evolving, the questions posed above have been answered with sufficient certainty that there should not be any true controversy over their existence. Yet, the NFL and those in the insurance and manufacturing industries continue to propagate doubt and uncertainty. The cottage industry, financed by the defense, which labels injuries as “controversial” is tapped anytime someone who suffers a brain injury files suit.
I. The Science of Sports-Related Brain Injuries.

The two most prominent types of neurological injuries tied to sports are concussions and CTE. Although these two clinical entities have only recently gained notoriety and public awareness, the medical community has known about the dangers since at least the early 20th century.

A. A Concussion is a Brain Injury that can have Life-Altering Effects.

A concussion is a type of traumatic brain injury. Contrary to popular myth, a concussion does not require a loss of consciousness. It is simply a “disturbance of neurological function resulting from acceleration-deceleration forces imparted to the head, neck or elsewhere on the body.”\(^1\) In other words, “seeing stars” may in fact be proof that you have suffered a concussion.

The most hotly debated issue surrounding concussions is the management of the injury. For decades, the common practice in the management of concussion was to “shake it off” and “clear the cobwebs” with smelling salts. Unless an athlete was knocked unconscious and physically unable to perform, he or she was expected to get up and continue to play. Many in the medical community deemed this practice dangerous and urged for the adoption of return-to-play protocols that mandated that an athlete suspected of having a concussion be removed from play until completely asymptomatic. In 1986, for example, renowned neurosurgeon Robert Cantu published guidelines that advised practitioners to remove concussed athletes from play.\(^2\) The impetus for these guidelines was the threat of the often-fatal phenomenon known as second-impact syndrome.\(^3\)

Second-impact syndrome occurs when an individual suffers an initial concussion and is subjected to additional brain trauma before the underlying concussion has fully resolved.\(^4\) Any subsequent impact can trigger massive brain swelling and frequently death.\(^5\) Many resisted Dr. Cantu’s guidelines, however, and the practice of immediately returning concussed athletes to play was widespread.

Another “controversial” condition affecting athletes is postconcussion syndrome. The insurance industry is actively denying these claims. For example, Lloyd’s of London recently denied a claim by a former NFL player who was suffering from postconcussion syndrome by asserting that the concussion he sustained was “minor” and that it “does not lead to the development of major depression.”\(^6\) The industry-aligned doctor thus opined that the athlete showed “clear evidence of postconcussive and cognitive symptom exaggeration in the absence
of significant emotional factors.” Even the recent, high-publicity “settlement” by the NFL imposes a jaundiced view of these disorders and establishes a high hurdle for injured players to clear in order to receive benefits.

B. The ‘Industrial Disease:’ Chronic Traumatic Encephalopathy

On the other end of the pathologic spectrum of head injury is a progressive neurodegenerative disease known as CTE. This disorder was first described by pathologist Harrison Martland in 1928 after studying boxers. To describe the condition he observed, he coined it as “dementia pugilistica” or “punch drunk.”

The disease recently rose to prominence as a result of several professional athletes tragically committing suicide and subsequently being diagnosed at autopsy with CTE. The disease has also gained broader recognition as a result of its central role in the Hollywood movie, “Concussion,” which detailed Dr. Bennet Omalu’s discovery of CTE and his infamous battle with the NFL.

Locally, everyone vividly recalls the case of 25-year old Kansas City Chiefs linebacker Jovan Belcher. A former linebacker in the NFL who suffered numerous traumatic hits to the head, Mr. Belcher ended his own life after killing the mother of his infant daughter. It “shocked” many defense experts to hear that Belcher had CTE after only four years of professional football. But, in this context of seemingly minimal duration of exposure compared to many professional NFL players, it is important to note that even athletes with no professional experience have been shown to have CTE. It may well be that we find in the future that repetitive head trauma from any source may contribute to CTE.

CTE is caused by repetitive brain trauma which leads to the accumulation of abnormal tau proteins in the brain. It is considered a latent disease that frequently does not manifest until years after the last trauma. It typically presents clinically as “a composite syndrome of mood disorders and neuropsychiatric and cognitive impairment[.]” Thus, the disease is often associated with behavioral disorders before it is diagnosed at autopsy by physical, objective findings in brain tissue.

Although CTE is definitively diagnosed post-mortem, new biomarker-based tests and neuroimaging techniques have been used to preliminarily diagnose CTE in living former NFL players. Even so, it is important to note that the statistics relating to the post-mortem diagnoses alone are alarming, and the emergence of these new technologies as well as the tracking of
behavioral disorders are becoming increasingly important. According to researchers at Boston University, 96% of deceased NFL players examined (87 out of 91) have shown signs of CTE.\textsuperscript{14} Thus, when it comes to an industry’s obligation to stay abreast of the science, it causes one to wonder why it took the NFL so long to acknowledge the risks of CTE.

II. Creating a Controversy: The NFL Adopts the Industry’s Playbook

A. Manufacturing Doubt

In David Michaels’ illuminating book, “Doubt is their Product: How Industry’s Assault on Science Threatens Your Health,” he details the strategy of “manufacturing uncertainty” about the hazards of an industry. The strategy follows a typical script: 1) individuals get sick; 2) the industry denies responsibility; and 3) the industry hires friendly “scientists” to manufacture a controversy over the link between the dangerous product and deleterious health effects. All the while, the industry sponsors of this “scientific” debate prevent or postpone the regulation of its hazardous product, reaping significant profits and avoiding liability while damaging, in irreparable ways, a countless number of lives.

B. The “League of Denial”

Led by individuals with reported ties to Big Tobacco,\textsuperscript{15} the NFL served as the quarterback in engineering the playbook of doubt for the sports industry.\textsuperscript{16} In response to mounting pressure from the media and the medical community, in 1994, then-Commissioner Paul Tagliabue formed the “Mild Traumatic Brain Injury Committee” and charged it with the task of “studying” concussions in professional football. The Committee was led by Dr. Elliot Pellman, a rheumatologist; Dr. David Viano, a biomechanical engineer; and Dr. Ira Casson, a neurologist.

Over the next 15 years, the Committee published a series of studies that purported to refute the link between concussions and neurodegenerative diseases. In a summary of the Committee’s work, the authors made four conclusions that formed the bedrock of the NFL’s attitude toward concussions.\textsuperscript{17}

First, the Committee argued, “it can be concluded that mild TBIs in professional football are not serious injuries.”\textsuperscript{18} Second, in regard to second-impact syndrome, the Committee found that “[i]t is possible that this syndrome does not truly exist in this population of athletes.”\textsuperscript{19} Third, dismissing the necessity to hold concussed players out until they are asymptomatic, the authors found that their study “supports the suggestion that such arbitrary return-to-play
The authors even went so far as to suggest that “it might be safe for college/high school football players to be cleared to return to play on the same day as their injury.” Fourth, “[t]he results of this study indicate that many NFL players can be safely allowed to return to play on the day of the injury after sustaining a mild TBI.”

These conclusions were at odds with the consensus already reached in the medical community. What’s more, the NFL, through Dr. Casson, declared in an interview on HBO Real Sports in 2007 that the link between repetitive brain trauma and neurodegenerative diseases did not exist:

Q. Is there any evidence, as far as you are concerned, that links multiple head injuries among pro football players with depression?
A. No.
Q. With dementia?
A. No.
Q. With early-onset of Alzheimer’s?
A. No.
Q. Is there any evidence as of today that links multiple head injuries with any long-term problem like that?
A. In NFL players?
Q. Yeah.
A. No.

At the same time, the NFL was aggressively attacking Dr. Omalu’s discovery of CTE in deceased NFL players. As detailed in the groundbreaking book, “League of Denial,” the NFL went to great lengths to minimize Dr. Omalu’s findings. For example, after Dr. Omalu published his first case report on CTE in an NFL player, the NFL’s Committee sent a letter to the editor asking that the study be retracted. Indeed, the NFL’s assault on Dr. Omalu’s findings continue today, and should anyone feel that this fight is only of historical interest, they might simply look at the continuing barrage of press releases which tend to denigrate the idea that concussions are serious injuries.

The NFL also failed to inform its workforce about Dr. Omalu’s findings, and in fact, undermined Dr. Omalu’s findings in communications with NFL players. A pamphlet distributed to all NFL teams in 2007 stated, “Current research with professional athletes has not shown that having more than one or two concussions leads to permanent problems…Research is currently underway to determine if there are any long-term effects of concussions in NFL athletes.”
Meanwhile, several former NFL players were dying prematurely as a result of CTE. And, the majority of the medical community was convinced that athletes with a history of repetitive brain trauma were at an increased risk of suffering from a neurodegenerative disease. Despite the overwhelming evidence, the NFL was not ready to acknowledge the link.

Finally, congressional action and litigation forced the NFL to revise its stance. In October 2009, a congressional hearing was held where Congresswoman Linda Sanchez lambasted the NFL for denying the link between repetitive brain trauma and neurodegenerative disease and analogized the NFL’s conduct to that of Big Tobacco. Shortly thereafter, the NFL “accepted” the resignations of Drs. Casson and Viano and renamed the NFL’s concussion committee. Additionally, Commissioner Roger Goodell sent a letter to all NFL teams in December 2009 instructing them to implement return-to-play guidelines that barred a player from returning to play on the same day he suffered a concussion.

But this was too little, too late. The damage had been done. Lawsuits were being filed. In fact, the fallout from the NFL’s conduct continues to percolate. The New York Times recently reported that the Committee’s studies were riddled with methodological and sampling errors, including the omission of “more than 100 diagnosed concussions,” thus making “them appear less frequent than they actually were.”

III. The NFL Concussion Litigation

By 2013, more than four thousand former players had filed lawsuits alleging that the NFL failed to warn and fraudulently concealed the long-term risks of repetitive brain trauma. Before any discovery occurred, the lawsuits were uniformly transferred to Philadelphia and consolidated for multidistrict litigation proceedings. Thereafter, the NFL agreed to settle the class action thereby “resolving” all claims on a class-wide basis. The settlement purports to create an “uncapped” monetary award fund in excess of $765 million. How much of that fund will actually be paid out remains to be seen, but according to Class Counsel’s actuarial data, the “overwhelming majority” of class members will not receive a monetary award.

The class action settlement provides compensation for individuals who have been diagnosed with ALS, Alzheimer’s, early-to-severe dementia, or Parkinson’s disease.
settlement also carves out a period in which certain CTE claims will be paid. Retired players
who died and were diagnosed with CTE at anytime between January 1, 2006, and the date of the
settlement’s final approval by the court (i.e., April 22, 2015) will receive an award.38

Although the class action settlement will pay relatively generous awards to a relative few
individuals, it forecloses any future awards for CTE. So, for example, if a retired player died
today, and he was subsequently diagnosed post-mortem with CTE, his family would receive
nothing under the settlement. And, despite the fact that science is on the verge of diagnosing
CTE in living persons, the settlement provides that an individual will not receive an award for an
in-vivo CTE diagnosis without the player manifesting “actual cognitive impairment.”39 In sum, if
a retired player is diagnosed with CTE at any time within the next 65 years, he will not receive
compensation under the settlement unless he is demonstrably “cognitively impaired” at the time
the claim is made. Numerous objections to the proposed settlement were filed.40

Yet, despite the many objections, the NFL’s class action settlement received final court
approval on April 22, 2015. Finding that the settlement was “fair, reasonable and adequate,” the
court stated in response to the objectors, “[t]he study of CTE is nascent, and the symptoms of the
disease, if any, are unknown.”41 The court relied heavily on NFL-paid experts to find the science
relating to CTE was, at best, premature, and that CTE may not even be a distinct clinical entity.
Thus, it appears that the NFL’s strategy of manufacturing controversy and uncertainty
reverberates throughout the opinion as justification42 for a settlement which remains
controversial in the minds of many affected former players and their legal representatives.

The Third Circuit Court of Appeals affirmed final approval of the class action settlement
on April 18, 2016.43 The Third Circuit, however, was affirmative in its comments about the
causes and effects of CTE,

The sheer number of deceased players with a post-mortem diagnosis of CTE
supports the unavoidable conclusion that there is a relationship, if not a causal
connection, between a life in football and CTE.44
Thus, while the NFL may have scored a victory through implementation of the class action mechanism and the class-wide settlement, it did not come without a cost. The Third Circuit solidified the scientific truth that repetitive brain trauma can and does cause CTE.

IV. Positive Changes

Although concussion/CTE litigation against the amateur and professional sports industries is far from over, numerous policies have been implemented and medical consensus has been reached since the so-called “concussion crisis” took the main stage. For example, all fifty states have enacted return-to-play legislation that requires concussed athletes to be removed from play until they have been cleared by a medical professional. This is positive progress in service to the lives and health of our young people engaged in athletics of all types.

In 2015, a group of neuropathologists published a consensus statement on CTE. Thereafter, during a congressional hearing in March, 2016, the NFL’s senior vice president for health and safety admitted that there is “certainly” a link between football and CTE. Additionally, numerous educational initiatives have been implemented to increase awareness about the signs and symptoms of a concussion. Several rule changes, such as limiting the number of contact practices per season, have also been put in place. Finally, a landmark concussion settlement against the NCAA was recently achieved that sends a clear message that the health and safety of athletes must be a paramount concern.

In conclusion, while the NFL and other sports organizations have been able, historically, to cast doubt on the devastating effects of concussions, it’s clear that science and those that fight for truth and justice can and have successfully combated this dangerous strategy. Today, we advocate that the NFL, and indeed all sports organizations, lock arms with the advocates for health and safety among our athletes and continue to study brain injuries and implement sound policies, procedures, and practices designed to eliminate the undue risks of play.

1 Anthony L. Petraglia, et al., Handbook of Neurological Sports Medicine, Chapter 5, p. 114 (Human Kinetics 2015).
2 Robert Cantu, Guidelines to return to contact sports after cerebral concussion. The Physician and Sportsmedicine 1986; 14:75-83.
5 Thus, if your car wreck/slip-and-fall client has been concussed, even a minor blow afterwards can be, or may have been, catastrophic.
7 Id.
12 See endnote 1 at p. 189.
16 Although this article focuses on the NFL, it is not the only sports organization that has cast doubt on the link between repetitive brain trauma and CTE. For example, on July 22, 2016, NHL Commissioner Gary Bettman sent a 24-page missive to US Senator Richard Blumenthal. The letter essentially denied the existence of CTE, stating, “The NHL and NHLPA’s position is that a warning about CTE is, at best, premature and also potentially dangerous…. …” Bettman Letter, accessible at https://assets.documentcloud.org/documents/2998884/Commissioner-Bettman-s-C-T-E-Response.pdf
18 Id.
19 Id.
20 Id.
22 Id.
27 Mike Florio, “NFL doctor says CTE is being over-exaggerated.” Pro Football Talk, March 18, 2015, accessible at http://profootballtalk.nbcSPORTS.com/2015/03/18/nfl-doctor-says-cte-is-being-over-exaggerated/


NFL Concussion Settlement Program Website, accessible at https://nflconcussionsettlement.com/

The settlement provides a grace period of 270 days to receive a diagnosis if a player dies before the final approval date.

Section 6.6 of the Settlement Agreement provides for modifications to qualifying diseases based on the advancements of science. However it expressly rules out in-vivo CTE diagnoses.


Id. at 397.

See e.g., id at 398 (“the speculation that repeated concussion or subconcussive impacts cause CTE remains unproven.”); id at 400 (“A]ssumptions regarding symptoms that constitute the diagnostic and clinical profile of CTE are premature.”); id at 399 (“association is not equivalent to causation.”).

In re Nat' Football League Players Concussion Injury Litig., 821 F.3d 410 (3d Cir. 2016), as amended (May 2, 2016)

Id.

The authors of this article represent 25 former NFL players who opted out of the NFL Concussion Settlement. See e.g., Green v. Arizona Cardinals Football Club LLC, 21 F. Supp. 3d 1020 (E.D. Mo. 2014)

