Ultimate Game-Changer? Concussion-Related Injuries and Litigation

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I. Introduction

Hits to the head have always been a consequence of professional and collegiate athletics, and specifically in hockey and American football. Over the past few years, however, these types of impacts – and the related concussive and sub-concussive injuries they cause – have become the source of significant litigation.

This article first discusses the status and key legal issues of the concussion-related injury litigation by current and former professional, collegiate and even high school athletes. This paper then addresses the status and key legal issues of the related insurance coverage litigation. This article further explains the medical science at the heart of the concussion-related injury litigation, and addresses the plaintiffs' claims for medical monitoring, as well as the obstacles to class certification of the plaintiffs' claims. Finally, this article discusses various trial considerations based on lessons from past head injury litigation, and provides a glimpse into the future of concussion-related injury helmet litigation.

II. Concussion-Related Injury Litigation by Current and Former Players

A. *Concussion-Related Injury Litigation Against The NCAA*

1. Status of Litigation

a. Class Actions

On November 21, 2011, four former NCAA athletes filed suit for concussion-related injuries (the "*Arrington* action").[1] The *Arrington* action is the first of fifteen proposed class

[1] Arrington v. NCAA, No. 2:11-cv-06356 (N.D. Ill. filed Nov. 21, 2011).

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action concussion-related injury cases filed against the NCAA to date.[2] As discussed in greater detail below, all plaintiffs seek injunctive relief in the form of medical monitoring, although some plaintiffs also seek monetary relief.

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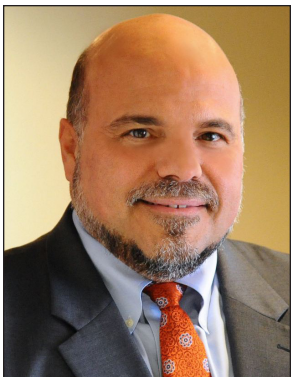
[2] To date, the following proposed class action concussion-related injury cases have been filed against the NCAA:

1. Arrington v. NCAA, No. 2:11-cv-06356 (N.D. Ill. filed Nov. 21, 2011);
2. Walker v. NCAA, No. 1:13-cv-00293 (E.D. Tenn. filed Sept. 3, 2013);
3. DuRocher v. NCAA, No. 1:13-cv-01570-SEB-DML (S.D. Ind. filed Oct. 1, 2013);
4. Caldwell v. NCAA, No. 1:13-cv-03820-CAP (N.D. Ga. filed Oct. 18, 2013);
5. Doughty v. NCAA, No. 3:13-cv-02894-JFA (D. S.C., filed Oct. 22, 2013);
6. Moore v. NCAA, No. 1:11-cv-06356 (N.D. Ill. filed Oct. 29, 2013);
7. Powell v. NCAA, No. 4:13-cv-01106-JTM (W.D. Mo. filed Nov. 11, 2013);
8. Morgan v. NCAA, No. 0:13-cv-03174-RHK-JSM (D. Minn., filed Nov. 19, 2013);
9. Walton v. NCAA, No. 2:13-cv-02904-STA-tmp (W.D. Tenn., filed Nov. 20, 2013);
10. Washington v. NCAA, No. 4:13-cv-02434 (E.D. Mo. filed Dec. 3, 2013);
11. Hudson v. NCAA, No. 5:13-cv-00398-RS-GR (N.D. Fla. filed Dec. 3, 2013);
12. Jobe v. NCAA, No. 3:13-cv-00799-HTW-LRA (S.D. Miss. filed Dec. 23, 2013);
13. Wolf v. NCAA, No. 1:13-cv-09116 (N.D. Ill. filed Feb. 11, 2014);
14. Nichols v. NCAA, No. 1:14-cv-0096 (N.D. Ill. filed Feb. 11, 2014); and
15. Jackson v. NCAA, No. 1:14-cv-03103-DLI-RLM (E.D.N.Y. filed Apr. 2, 2014).



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On December 18, 2013, the Judicial Panel for Multidistrict Litigation ("JPML") centralized the *Arrington* action and the other NCAA concussion injury cases in a Multi-District Litigation ("MDL") styled as *In re: National Collegiate Athletic Association Student-Athlete Concussion Injury Litigation*, before the Honorable John Z. Lee for coordinated pretrial proceedings (the "NCAA MDL").[3] Because the *Arrington* action was so advanced at the time the NCAA MDL was created, the pleadings filed in the *Arrington* action became the operative documents in the NCAA MDL, the discovery exchanged to date in the *Arrington* action was used in the NCAA MDL for negotiation purposes, and, eventually, the *Arrington* plaintiffs' counsel was appointed (along with certain other plaintiffs' counsel) as Lead Counsel for the plaintiffs in the NCAA MDL.[4] After significant negotiations among the various plaintiffs' attorneys, as well as with the NCAA, Lead Counsel for the plaintiffs and Lead Counsel for the NCAA reached an agreement to resolve the plaintiffs' medical monitoring claims (the "medical monitoring settlement" or "settlement"), and on July 29, 2014, filed a

[3] In re: National Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 1:13-cv-09116 (N.D. Ill. filed Sept. 4, 2013).

[4] *See* Notification of Docket Entry, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13-CV-9116 (N.D. Ill. Jul. 30, 2014), ECF No. 75.

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Motion for Preliminary Approval of Class Settlement and Certification of Settlement Class.[5] The settlement class is defined as: "All persons who played an NCAA-sanctioned sport at an NCAA member institution at any time through the date of Preliminary Approval."[6] The settlement class is, therefore, quite broad, as it encompasses *all* former and current NCAA athletes, through the date of preliminary approval of the settlement. In other words, there is no limitation on when the student athlete played college sports or which sport the student athlete played. The class is estimated to encompass over four million individuals.

The settlement resolves all medical monitoring claims on a class-wide basis, and specifically, provides for a $70 million common fund for the creation for a medical monitoring program which includes a two-step screening process comprised of: (1) a screening questionnaire, the results of which will determine whether a class member advances to the next step; and (2) a physical examination, which includes a neurological and a neurocognitive assessment. The settlement requires participating class members to waive class claims for personal injury, but permits members to bring personal injury claims on an individual basis.[7] The settlement contemplates the creation of a Medical Science Committee, comprised of four medical experts with expertise in the diagnosis, care and management of concussions in sport and mid- to late-life neurodegenerative disease.[8] The Medical Science Committee

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[5] *See* In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13-CV-9116, 2014 WL 7237208, at *3 (N.D. Ill., Dec. 17, 2014).

[6] *Id*.

[7] *Id*. at *1.

[8] *See id*. at *3-*4.

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is largely responsible for determining, among other things, the locations of the medical monitoring program locations, the substance of the screening questionnaire, the algorithm for scoring responses to the questionnaire, and the criteria to be eligible for a medical evaluation.[9] A class member may complete the questionnaire once every five years until age 50, and then once every two years after age 50, but no more than five times during the medical monitoring period, and may qualify up to two times for a medical evaluation.[10]

[9] *Id*. at *4.

[10] *Id*.

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Certain plaintiffs' attorneys have opposed the medical monitoring settlement, and have argued, among other things, that the vast majority of class members receive no benefit at all from the settlement and that forfeiting the ability to bring personal injury claims on a class-wide basis essentially results in class members being unable to bring personal injury claims at all, as it will be extremely difficult to do so on an individual basis.[11]

At a hearing on July 29, 2014, Judge Lee ordered the parties to submit additional briefing on certain issues of concern, specifically: (1) the ability of the proposed medical monitoring settlement class to waive their rights to pursue class-wide personal injury relief; and (2) the ascertainability of the settlement class and the reasonableness of the proposed notice and related procedures.[12] Thereafter, the parties filed substantive briefing on these issues.

With respect to the first issue, the parties argued that the ability to pursue claims on a class basis is not a substantive right, class treatment is not itself a remedy, and the proposed settlement includes the additional procedural protections of class notice and the opportunity to opt out of the settlement class.[13] With respect to the second issue, the parties allege that the

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[11] *See* Opposition to Motion by Plaintiffs Adrian Arrington, Derek Owens, Angelica Palacios, Kyle Solomon for Settlement Plaintiff's Motion for Preliminary Approval of Class Settlement & Certification of Settlement Class, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13 C 9116 (N.D. Ill. Aug. 22, 2014), ECF No. 83.

[12] *See* Case Management Order No. 2, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13 C 9116 (N.D. Ill. Jul. 29, 2014), ECF No. 74.

[13] *See* Settlement Class Representatives' Supplemental Submission In Support Of Plaintiffs' Motion For Preliminary Approval Of Settlement By Adrian Arrington, Paul Morgan, Jim O'Connor, Derek Owens, Angelica Palacios, Kyle Solomon, Sean Sweeney, Sharron D. Washington, Abram Robert Wolf, Dan Ahern, Jeff Caldwell, John Durocher, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13 C 9116 (N.D. Ill. Aug. 8, 2014), ECF No. 77.

settlement class is ascertainable and that the proposed notice plan will reach approximately 80% of the settlement. In support, the parties filed a notice plan which details the numerous different aspects of the proposed "phased" or "incremental" approach to notice – that is, to spend a portion of the notice budget at the onset of the notice period on different types of notice (e.g., print publications, settlement website, internet publication, press releases, etc.), monitor each notice vehicle to evaluate its effectiveness, and spend the balance of the budget on the vehicle(s) which are most effective.[14]

On October 23, 2014, Judge Lee held a hearing on the parties' supplemental submissions and the motion for preliminary approval. At that hearing, the judge expressed a number of concerns about the terms of the settlement, including:

1. the scope of the putative class (specifically, the inclusion of non-contact sports in the putative class despite there not being a plaintiff representative who played non-contact sport, and that certain new guidelines to be implemented by NCAA member institutions apply only to contact sports);[15]
2. whether notice can be accomplished due to the lack of temporal limitation on the putative class;[16]
3. the likelihood that personal injury lawyers will take moderately valued concussion-related injury claims on an individual basis;
4. the propriety of the class waiver for personal injury claims;
5. the likelihood that NCAA member schools will comply with the NCAA's request for contact information for all student athletes (for purposes of direct notice) and fairly expensive new guidelines (e.g., having a physician present at all contact sport games and practices), especially where the NCAA cannot mandate compliance);
6. specifics regarding the medical monitoring program, including the criteria for evaluating the questionnaire and determining who will receive a medical exam and class members' accessibility to testing centers; and

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[14] *See* Settlement Class Representatives' Motion For Approval Of Notice Plan By Dan Ahern, Adrian Arrington, Jeff Caldwell, John Durocher, Paul Morgan, Jim O'Connor, Derek Owens, Angelica Palacios, Kyle Solomon, Sean Sweeney, Sharron D. Wa, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13 C 9116 (N.D. Ill. Aug. 8, 2014), ECF No. 84.

[15] *See* Transcript of Hearing at 6-7, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13-CV-9116 (N.D. Ill. Oct. 23, 2014), ECF No. 103.

[16] *See* Transcript of Hearing at 14-15, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13-CV-9116 (N.D. Ill. Oct. 23, 2014), ECF No. 103.

7. certain provisions in the settlement agreement, including the NCAA's right to a reversion of any unused funds and the NCAA's right to withdraw from the settlement prior to final approval.[17]

Judge Lee questioned counsel for all parties regarding these concerns, and advised that he would take the parties' responses at the hearing and prior written submissions under advisement and issue a ruling. One of the concerns expressed by the court was adequacy of representation, given that the settlement class pertains to all NCAA athletes. Specifically, the court questioned the ability of the proposed class representatives, who participated in contact sports, to represent class members who played non-contact spots.[18] In an effort to address this concern, in late November 2014, the plaintiffs filed a motion to add two non-contact sport class representatives (a member of a NCAA women's golf team and a member of a NCAA men's cross country and track and field team).[19] The NCAA filed a supplemental submission regarding the adequacy of representation and the scope of the proposed settlement class, in which it noted, among other things, that the only difference in the settlement between contact and non-contact sports was the requirement for contact sports that medical personnel with concussion training be present at games and available at practices.[20]

The court, however, at a hearing on the plaintiffs' motion, sought further explanation as to how the proposed new class representatives represent the interests of other non-contact sport athletes, and expressed concern that the proposed new representatives had not had sufficient time to review and analyze the settlement. Thereafter, on December 17, 2014, the court denied preliminary approval of the medical monitoring settlement, noting, in short, that the court still has concerns regarding numerous issues related to the settlement, most significantly: (1) the adequacy of representation, and (2) ascertainability of class members and the proposed notice plan.[21] The court also expressed concerns regarding: (3) the NCAA's ability to bind its member institutions, (4) the criteria used to evaluate and score the screening questionnaires, (5) the limitations on the questionnaires and medical evaluations, (6) program locations, and (7) the reversion provision (where unused funds revert to the NCAA after 50 years).[22]

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[17] *See* Transcript of Hearing at 63-64, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13-CV-9116 (N.D. Ill. Oct. 23, 2014), ECF No. 103.

[18] *See* Transcript of Hearing at 88, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13-CV-9116 (N.D. Ill. Oct. 23, 2014), ECF No. 103.

[19] *See* In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13-CV-9116 (N.D. Ill. Nov. 7, 2014), ECF No. 96.

[20] *See* In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13-CV-9116 (N.D. Ill. Nov. 18, 2014), ECF No. 101.

[21] *See* In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13 C 9116, 2014 WL 7237208, at *1 (N.D. Ill. filed Dec. 17, 2014).

[22] *See id*.

Throughout the first few months of 2015, the plaintiffs and the NCAA filed numerous submissions in an effort to address the court's concerns. Specifically, in early January 2015, the plaintiffs filed a renewed motion to add, as named plaintiffs and class representatives, former athletes who played non-contact sports (e.g., members of golf, track & field, softball, baseball and volleyball teams), and, in support of the renewed motion, attached a declaration of the retired federal judge who helped facilitate the medical monitoring settlement. In late February 2015, the parties filed a joint submission regarding the feasibility and cost of direct notice.[23]

Finally, on April 15, 2015, the parties filed numerous submissions outlining their efforts to address the court's concerns, including an updated report from the plaintiffs' expert regarding sufficiency of the fund amount using the NCAA's reported concussion data, an updated notice plan, a report from the Medical Science Committee setting out a screening questionnaire to be used to determine if an athlete should be subject to a physical exam, a specific procedure governing physical exams, and a report regarding overall program administration.[24] Accordingly, the parties filed a Joint Motion for Preliminary Approval of the Class Settlement and Certification of the Settlement Class.[25]

The parties state that they have revised provisions in the settlement agreement that the court found problematic (e.g., any excess amount in the fund after the lifespan of the program is now to be used for concussion research instead of reverting back to the NCAA), and accordingly, filed an amended class action settlement agreement. Finally, the parties filed a fourth amended complaint, which names former students who participated in contact sports as well as non-contact sports as defendants and named representatives.[26]

The core of the amended settlement agreement is the same as the prior agreement, and requires the NCAA to create a $70 million fund for medical monitoring of current and former athletes in contact and non-contact sports (which will be used to monitor athletes for brain trauma, both through a written screening test and physical examinations), toughen return-to-play rules after an athlete sustains a concussion, require medical personnel at NCAA-sponsored events and practices to promptly treat an athlete who sustains a concussion, and similar provisions. The court has set a July 1, 2015 status hearing to address the parties' submissions.

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[23] *See* Joint Submission Regarding the Feasibility and Cost of Direct Notice by Nat'l Collegiate Athletic Ass'n, In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13 C 9116 (N.D. Ill. Aug. 8, 2014), ECF No. 142.

[24] *See* Fourth Amended Compl., In re: Nat'l Collegiate Athletic Ass'n Student-Athlete Concussion Injury Litig., No. 13 C 9116 (N.D. Ill. Aug. 8, 2014), ECF No. 171.

[25] *See id.*

[26] *See id.*

b. Individual Actions

There are presently nine known individual concussion-related injury lawsuits pending against the NCAA.[27] The individual actions are varied. For example, some plaintiffs name only the NCAA as a defendant, while others name member schools, individuals (e.g., coaches, trainers, etc.) and equipment manufacturers, and some plaintiffs seek compensatory or punitive damages, while others also seek medical monitoring. These actions are also in different stages of litigation, and, in certain cases, the parties have begun to engage in discovery or substantive motion practice.

For example, in the *Sheely* action, discovery is ongoing. In December 2014, the NCAA President, Dr. Mark Emmert, was deposed. As discussed in greater detail below, the NCAA also filed a motion for summary judgment. As also discussed below, in the *Onyshko* action, the NCAA filed preliminary objections to the plaintiffs' complaint, which the court overruled.

2. Legal Theories, Defenses and Other Considerations

The plaintiffs in the numerous class action complaints filed against the NCAA generally allege that the NCAA acted negligently and breached its duty to its college athletes by not taking reasonable steps to prevent head injuries despite knowing how severe the repercussions may be for an athlete who suffers a head injury. The plaintiffs allege that the medical science community has long recognized the debilitating effects of concussions and other traumatic brain injuries, and has noted on numerous occasions and in various studies that repeated impact to the head can cause permanent brain damage and increase the risk of long-term cognitive decline and disability.

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[27] To date, the following individual concussion-related injury cases have been filed against the NCAA:

1. Sheely v. NCAA, No. 380-569-V (Montgomery Cty. Cir. Ct., Md.) (filed Aug. 22, 2013);
2. Wells v. NCAA, No. 02-CV-2013-902657.00 (Mobile Cty. Cir. Ct., Ala.) (filed Sept. 30, 2013);
3. Anderson v. NCAA, No. 631093 (East Baton Rouge Parish, 19th Jud. Dist. Ct.) (filed Jun. 6, 2014);
4. Onyshko v. NCAA, No. C-63-CV-201403620 (Wash. Cty. Ct. Comm. Pleas, Pa.) (filed Jun. 27, 2014, but originally filed in federal court on Dec. 17, 2013);
5. Bradley v. NCAA, No. 1:15-cv-005350-RBW (D.D.C.) (removed Apr. 10, 2015, originally filed in state court on Aug. 8, 2014);
6. Walen v. NCAA, No. 14-cv-12218 (Multnomah Cty. Cir. Ct., Or.) (filed Aug. 28, 2014);
7. Schmitz v. NCAA, No. CV 14 834486 (Cuyahoga Cty., Oh.) (filed Oct. 20, 2014, but originally filed in federal court on Jun. 26, 2014);
8. Cunningham v. NCAA, No. DC-14-12249 (Tex. Dist. Ct., Dallas Cty.-160th) (filed Oct. 19, 2014); and
9. Calderone v. NCAA, No. 706941/2014 (N.Y. Sup. Ct., Queens Cty.) (filed Sept. 26, 2014).

The individual actions are almost all pending in state, rather than federal, court because the NCAA has claimed that, as an unincorporated association, it is a citizen of every state and therefore, when the NCAA is a defendant, there is no diversity jurisdiction in federal court.

According to the plaintiffs, the NCAA was aware of, but disregarded, the general consensus of the medical science community and the mounting scientific literature regarding the long-term effects of concussions and head trauma or the link between concussions and certain sports. Rather, the NCAA failed to implement any guidelines or rules to prevent repeated concussions or educate players about their increased risk, refused to endorse any of the recommended return to play procedures (and rather continued to allow players to play on the days immediately following their receipt of a concussion) and failed to take any action to educate its student athletes on the risks of repeated head traumas.

The NCAA has abstained from litigating its substantive defenses in the class actions and the NCAA MDL, likely because the NCAA's strongest substantive defense is arguably the most problematic defense from a public relations standpoint – that is, that the NCAA does not owe a legal duty to the student athletes who play sports at its member schools because it has very little control over how its member schools educate, train and care for student athletes, and rather, the control is left to the member schools themselves. However, in late January 2015, the NCAA filed an answer to the plaintiffs' third amended complaint which included 28 affirmative defenses, including that the plaintiffs' claims are barred by assumption of the risk, that the plaintiffs' claims are barred by the contact sports exception to the ordinary standard of care doctrine, that all of a plaintiff's claims are barred to the extent that plaintiff's injuries were caused by his or her own conduct, and that all of a plaintiff's claims are barred to the extent the plaintiff "did not actually sustain a concussion and therefore suffered no injury."[28]

The NCAA has also made similar arguments in certain individual cases. For example, in the *Onyshko* action, the NCAA filed preliminary objections to the plaintiffs' complaint on July 17, 2014 in which it argued: (1) the NCAA owes no legal duty to prevent risks inherent in an activity; and (2) the plaintiffs have not plead the legal source of any alleged duty owed by the NCAA (specifically, (a) the NCAA did not assume a legal duty to the plaintiff student athlete; (b) neither the NCAA's aspirational mission statements nor practice of making safety recommendations create a legal duty; and (c) there is no special relationship between the plaintiff student athlete and the NCAA). The court overruled the NCAA's preliminary objections on December 3, 2014.

In addition to lack of duty, the NCAA's other substantive defenses include assumption of the risk, contributory or comparative negligence on behalf of the student athlete, and lack of causation. The NCAA likewise has refrained from litigating these defenses in the class actions and the NCAA MDL, but has teed up these defenses in certain individual cases.

For example, in the *Sheely* action, which is a wrongful death claim, the NCAA filed a motion for summary judgment on January 21, 2014 in which it argued that the plaintiff student athlete assumed the risk inherent in the sport of football and that the plaintiff could not show that that the NCAA was the proximate cause of the plaintiff student athlete's death.

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[28] *See* Answer to Third Amended Compl., NCAA MDL, ECF No. 134.

On March 21, 2014, the NCAA filed an answer with eight affirmative defenses, including contributory negligence of the plaintiff student athlete, assumption of the risk, and the contact sports exception to the ordinary standard of care. Similarly, in the *Onyshko* action, after its preliminary objections were overruled, the NCAA filed an answer with new matter in which it asserted that the plaintiff's claims are barred by assumption of the risk, the contact sports exception to the ordinary standard of case, and the plaintiff's failure to mitigate damages.

While it remains to be seen, plaintiffs will argue that there is sufficient evidence to indicate that the NCAA owed student athletes a duty and that the NCAA breached that duty. For example, with respect to duty, the NCAA's website contains a statement that "the NCAA is leading a national effort to partner with member schools, the Department of Defense and the public sector to conduct research, promote policies and develop educational materials that benefit the safety, excellence and wellness of all athletes."[29] With respect to breach, the NCAA failed to adopt various suggested international guidelines for concussion management, including those in the 2002 Vienna Protocol, which arose from the International Symposium on Concussion in Sport held in Vienna in 2001.

Causation will be determined on an individual basis. Plaintiffs will likely argue that the NCAA should have foreseen that coaches and trainers might allow (or even encourage) student athletes to return to play before they fully recovered from their head injuries or before all of their concussion symptoms had subsided. Based on the recent publicity regarding concussions, there may be sympathy for the argument that the NCAA was in a unique position to legislate rules that would protect student-athletes, that the NCAA knew these types of rules were necessary, and that the NCAA's failure to promulgate appropriate rules caused foreseeable injuries to student athletes whose concussions could have been prevented or who were improperly treated after being injured.

B. *Concussion-Related Injury Litigation Against The NFL*

1. Status of Litigation

a. Class Actions

In July 2011, seventy-three former NFL players filed the action styled as *Maxwell, et al. v. NFL, et al.* No. BC465842 (L.A. Cty. Sup. Ct.), against the NFL, its licensing department, and various helmet-manufacturers, alleging that concussions and other injuries sustained during their NFL careers had resulted in brain and other neurological damage, and that, at its highest management levels, the NFL negligently failed to protect players against such long-term injuries. Less than one month later, the putative class action of *Easterling, et al. v. NFL, et al.,* No. 11-cv-05209-AB (E.D. Pa.), was filed by seven former players who brought similar allegations on behalf of a proposed class of former NFL players.[30]

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[29] *See Health & Safety*, NCAA, http://www.ncaa.org/health-and-safety (last visited June 21, 2015).

[30] Easterling v. NFL, No. 11-cv-05209-AB (E.D. Pa. 2011).

On January 31, 2012, the JPML centralized the *Easterling* and *Maxwell* action, and the other NFL concussion injury cases, in an action as *In re: National Football League Players' Concussion Injury Litigation*, in the Eastern District of Pennsylvania before the Honorable Anita Brody for coordinated pretrial proceedings (the "NFL MDL").[31] Thereafter, hundreds of class action concussion-related injury lawsuits were filed by former NFL players and their spouses. Notable plaintiffs include Ray Easterling, Eric Allen, Mark Rypien, Alex Karras, Mark Chmura, Jamal Anderson, Art Monk, Danny White, Jim Everett, and Junior Seau. At present, the NFL MDL involves more than three hundred consolidated actions with over five thousand plaintiffs.[32]

Throughout 2013, the plaintiffs and the NFL engaged in highly publicized settlement discussions. In August of 2013, just days before the start of the 2013 NFL season, the parties announced that they had reached a tentative $765 million settlement.[33] In early January 2014, the proposed Class Counsel for the plaintiffs filed a motion in the NFL MDL for an order granting preliminary approval of the class action settlement agreement and conditionally certifying a settlement class and subclasses.[34] The NFL MDL judge, however, quickly rejected the proposed agreement because she was concerned that there would not be enough money to cover all of the claims of the entire class, which is estimated to be 20,000 former players.[35] The judge requested that the parties provide additional information so that the court could evaluate the fairness and adequacy of the proposed settlement, and specifically, the actuarial data supporting how a $765 million fund with a 65-year lifespan could adequately compensate the proposed class.[36]

The parties subsequently provided additional information regarding the proposed settlement, which satisfied the court, as well as a slightly revised settlement agreement. On July 7, 2014, the NFL MDL judge granted preliminary approval of the settlement.[37] The revised settlement provides for a nationwide settlement class which consists of three types of claimants:

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[31] In re: Nat'l Football League Players' Concussion Injury Litig., MDL No. 2323, No. 2:12-md-02323 (E.D. Pa. 2012).

[32] In re: Nat'l Football League Players' Concussion Injury Litig., 842 F. Supp. 2d 1378, 1379-80 (J.P.M.L. 2012).

[33] *See*, *e.g.*, *NFL Agrees to Settle Concussion Suit for $765 Million*, N.Y. Times, Aug. 29, 2013, at A1, available at http://www.nytimes.com/2013/08/30/sports/football/judge-announces-settlement-in-nfl-concussion-suit.html?_r=0.

[34] *See* In re: Nat'l Football League Players' Concussion Injury Litig., 961 F. Supp. 2d 708, 715 (E.D. Pa. 2014).

[35] *See id.*

[36] *See id*.

[37] *See* In re: Nat'l Football League Players' Concussion Injury Litig., 301 F.R.D. 191, 199 (E.D. Pa. 2014).

1. Retired NFL football players (generally defined as all living NFL football players who, prior to the date of the preliminary approval and class certification order, retired – formally or informally – from playing professional football with the NFL or any member club, including the American Football League, World League of American Football, the NFL Europe League, and the NFL Europa League);
2. Representative claimants (generally defined as authorized representatives of deceased, legally incapacitated or incompetent retired NFL football players); and
3. Derivative claimants (generally defined as close family members of retired NFL football players who properly assert the right to sue by virtue of their relationship with a retired NFL football player).[38]

The settlement outlines the following types of "qualifying diagnoses" and the maximum monetary award levels for each diagnosis:

- Level 1.5 Neurocognitive Impairment (early dementia) – $1.5 million;
- Level 2 Neurocognitive Impairment (moderate dementia) – $3 million;
- Alzheimer's Disease – $3.5 million;
- Parkinson's Disease – $3.5 million;
- Amyotrophic Lateral Sclerosis ("ALS"), commonly referred to as Lou Gehrig's Disease – $5 million; and
- Death with CTE (chronic traumatic encephalopathy) – $4 million.[39]

These awards may be reduced based on a retired player's age at the time of diagnosis, the number of NFL seasons played, and other applicable offsets outlined in the settlement agreement.[40]

In addition to granting preliminary approval of the revised settlement, the judge also stayed all actions consolidated in the NFL MDL and enjoined all proposed settlement class members from commencing, prosecuting or participating in any way in any other lawsuit or legal action based on the facts and circumstances at issue in NFL MDL until they have opted out of the settlement class or the settlement has been denied.[41] Proposed class members are

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[38] *Id*. at 195-96.

[39] *See id*. at 196.

[40] *See id*.

[41] *See id*. at 204.

not, however, precluded from bringing litigation relating to cognitive injuries against the NCAA or any other collegiate, amateur or youth football organizations, a point, which the judge noted in granting preliminary approval.[42]

Certain former players objected to the proposed revised settlement prior to the grant of preliminary approval, arguing, among other things, that the revised settlement leaves many injured class members uncompensated, as it only compensates a small subset of mild traumatic brain injury ("MTBI")-related injuries, the proposed notice is false and misleading, the settlement establishes unduly burdensome procedural requirements, the settlement negotiation process has lacked transparency, and the lack of discovery is problematic.[43] These same objectors filed a petition for review with the United States Court of Appeals for the Third Circuit after the grant of preliminary approval, based on the inadequacy of the class, but their request for leave to appeal was denied.[44]

A final fairness hearing was held in the NFL MDL on November 19, 2014. After hours of testimony from counsel for the NFL, class counsel and counsel for various objectors, the judge declined to grant preliminary approval, and instead permitted those who had previously filed timely and valid objections to file supplemental briefing. Quite a few voluminous objections were filed in early December 2014, many of which outlined numerous alleged deficiencies with the NFL settlement.

For example, one set of objectors argued that class counsel and the NFL have not refuted the showing that the settlement is unfair in its failure to compensate the vast majority of class members for CTE while simultaneously releasing the NFL for CTE claims.[45] In support, the objectors argue that the experts hired by class counsel improperly ignore the medical science concerning CTE, and that the experts are biased and express opinions which are inconsistent with the opinions they expressed prior to being retained as experts in this case, and contrary to those of the generally accepted medical community.[46] Interestingly, the objectors put forth affidavits of more than 10 medical experts, none of whom were compensated, and all of whom agree that the settlement is problematic for the reasons discussed in the objection.[47]

On February 2, 2015, the judge issued an order in which she raised numerous concerns with the settlement terms, and ordered the parties to file a joint submission to address these concerns.[48] Among the judge's concerns were that the settlement does not provide credit

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[42] *See id*. at 199.

[43] *See* NFL MDL, ECF No. 608.

[44] *See* In re: Nat'l Football League Players' Concussion Injury Litig., 775 F.3d 570 (3d Cir. 2014).

[45] *See id.*, ECF No. 6455.

[46] *See id*. The objectors also argue that the various offsets in the settlement are unfair; that there is a lack of adequate representation; that there are significant procedural hurdles which will prevent many class members from ever recovering; that the settlement does not guarantee that funds will be available to pay claims during the full term of the settlement; and that public interest and opinion disfavor approval.

[47] *See id*.

[48] *See id.*, ECF No. 6479.

for seasons played in other football leagues (e.g., NFL Europe); that the settlement may be insufficient to provide funding for all qualifying members; that class members who die of CTE prior to final approval of the settlement will not be compensated; and that certain requirements may be onerous for class members (e.g., the $1,000 fee to appeal determinations of monetary awards, the requirement that class members submit medical records).[49]

On February 13, 2015, the plaintiffs and the NFL filed a joint report in which they responded to each of the concerns previously raised by the judge, and advised that they had amended the settlement agreement to address those concerns.[50] For example, the parties advised that they amended the agreement to provide for a "half credit" for seasons played in other leagues and to provide a grace period for the deadline to file claims in recognition that it may take several months post-death to obtain a diagnosis of CTE, among other things.[51] The parties also filed an amended class action settlement agreement, and requested that the court grant preliminary approval of the settlement, as amended.[52]

On April 22, 2015, Judge Brody granted final approval of the amended class action settlement agreement.[53] In the order, the judge stated that the court finds the settlement class satisfies the applicable prerequisites for class treatment under Federal Rules of Civil Procedure 23(a) and (b), and further that the court found class notice to have been properly and effectively implemented.[54] The judge held that the settlement agreement is "fair, reasonable and adequate," and ordered that it be approved in its entirety and that any related lawsuits be dismissed with prejudice.[55]

Although some notices of appeal have been filed, the plaintiffs' lawyers who were vocal about opposing the settlement before final approval was granted have actually called on lawyers who are critical of the deal not to appeal it.[56]

b. Individual Actions

Unlike the proposed medical monitoring settlement in the NCAA MDL, the settlement in the NFL MDL includes all medical monitoring *and* all personal injury claims. Therefore, if the judge grants final approval of the settlement in the NFL MDL, the NFL will only need to defend individual actions brought by class members who opt out of the settlement.

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[49] *See id*.

[50] *See id*., ECF No. 6481.

[51] *See id*.

[52] *See id*.

[53] *See id*., ECF No. 6509.

[54] *See id*.

[55] *See id*.

[56] *See* Mike Florio, *Appeal of concussion settlement filed,* NBC Sports: Pro Football Talk (May 13, 2015 6:11 PM), http://profootballtalk.nbcsports.com/2015/05/13/appeal-of-concussion-settlement-filed/ (last visited June 20, 2015).

2. Legal Theories, Defenses and Other Considerations

The plaintiffs generally allege that the NFL failed to protect its players, misrepresented that there was no link between concussions and later-life cognitive disorders or brain injuries, fraudulently concealed the risks of head injuries and other facts and information which caused them to be exposed to harm, failed to regulate the sport in a manner that would prevent brain injuries, conspired to discount and reject the causal connection between concussions and the long-term effects of those injuries, negligently failed to warn of risks, failed to disclose risks, misrepresented and concealed facts, and failed to adopt and enforce rules to minimize risks to players.

The plaintiffs also generally allege that, for decades, the NFL made statements contrary to the vast majority of peer-reviewed evidence on concussions, and it was not until 2010 that the NFL began to properly warn players about how concussions could affect their brain functions long after they had retired. Many players said they sustained multiple concussions that were improperly treated by team medical personnel.

As noted above, the plaintiffs also brought suit against the NFL's licensing department and various equipment manufacturers. The plaintiffs generally allege that the NFL's licensing department failed to ensure that the equipment licensed and approved for players' use was sufficient to protect players against the risks of concussive brain injuries. The plaintiffs generally allege that the equipment manufacturers are strictly liable for design defects and manufacturing defects because the helmets designed, manufactured, sold, and distributed by these entities were unreasonably dangerous and unsafe for their intended purposes because they did not provide adequate protection against the foreseeable risks of concussive brain injuries, and, further, that the equipment manufacturers failed to warn of substantial dangers involved in the reasonable and foreseeable use of their helmets and failed to provide adequate safety and instructional materials to minimize the risks of concussive brain injuries.

The NFL's potential liability defenses are similar to those of the NCAA, and include lack of a legal duty owed to athletes, assumption of the risk, comparative or contributory negligence, proportionate or comparative fault, and lack of causation. Arguably, the former players' actions on the field or refusal to properly deal with injuries contribute to the former players' health issues. Quite a few players have stated on record that they would conceal a concussion to stay in the game.[57]

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[57] *See*, *e.g.*, Josh Katzowitz, *Troy Polamalu says he's suffered 'eight or nine' concussions, would lie to stay on field*, CBS Sports, Jul. 18, 2012, available at http://www.cbssports.com/nfl/eye-on-football/19608448/troy-polamalu-has-suffered-eight-or-nine-concussions-would-lie-to-stay-on-field.

C. *Concussion-Related Injury Litigation Against The NHL*

1. Status of Litigation

a. Class Actions

On November 25, 2013, the action styled as *Leeman, et al. v. NHL, et al*., was filed by over two dozen former NHL players against the NHL regarding traumatic brain injuries (the "*Leeman* action").[58] The *Leeman* action is the first of eight proposed class action concussion-related injury cases filed against the NHL to date.[59]

On August 19, 2014, the JPML centralized the *Leeman* action and the other NHL players' concussion injury cases an action styled as *In re: National Hockey League Players' Concussion Injury Litigation*, MDL No. 2551, Case No. 0:14-md-02551-SRN (D. Minn.), before the Honorable Susan Richard Nelson for coordinated or consolidated pretrial proceedings (the "NHL MDL"). Pursuant to an Order of the NHL MDL, any subsequent similar case filed in federal court will be transferred to the District of Minnesota and become part of the NHL MDL as a "tag along" case.[60]

The plaintiffs propose that all fact discovery and any expert discovery related to class certification in the NHL MDL be completed by December 2015, and all discovery related to trial and merits experts be completed by April 2016.[61] On October 20, 2014, the plaintiffs filed a Master Administrative Long-Form Class Action Complaint ("Master Complaint") as well as a proposed Short-Form Complaint and Jury Demand.[62] The proposed class is defined in the Master Complaint as follows:

> All living NHL hockey players, their spouses and dependents, and the estates of deceased NHL players, who retired, formally or informally, from playing professional hockey with the NHL or any member club, and who are not seeking active

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[58] Leeman v. NHL, No. 1:13-cv-01856-KBJ (D.D.C.).

[59] Specifically, to date, the following proposed class action concussion-related injury cases have been filed against the NHL:

1. Leeman v. NHL, No.1:13-cv-01856-KBJ (D.D.C. filed on Nov. 25, 2013);
2. LaCouture v. NHL, No. 1:14-cv-02531-SAS (S.D.N.Y. filed Apr. 11, 2014);
3. Christian v. NHL, No. 0:14-cv-01140-SRN-JSM (D. Minn. filed Apr. 15, 2014);
4. Fritsche v. NHL, No. 1:14-cv-05732-SAS (S.D.N.Y. filed July 25, 2014);
5. Rohloff v. NHL, No. 0:14-cv-03038-SRN-JSM (D. Minn. filed July 29, 2014);
6. Larose v. NHL, No. 0:14-cv-03410-SRN-JSM (D. Minn. filed Sept. 8, 2014);
7. Populok v. NHL, No. 0:14-cv-03477-SRN-JSM (D. Minn. filed Sept. 14, 2014); and
8. Murphy v. NHL, No. 0:14-cv-04132-SRN-JSM (D. Minn. filed Oct. 2, 2014).

[60] In re: Nat'l Hockey League Players' Concussion Injury Litig., No. 0:14-md-02551-SRN (D. Minn. 2014).

[61] *See id*., ECF No. 8.

[62] *See id*., ECF No. 28.

> employment as players with any NHL member club, who suffered concussion or repeated, subconcussive blows while playing on an NHL active roster.[63]

The plaintiffs also propose two subclasses: (1) a Medical Monitoring Subclass defined as: "All members of the Class who are not currently experiencing symptoms associated with Alzheimer's Disease, Parkinson's Disease, ALS, postconcussion syndrome, neurological deficit, cognitive impairment, dementia, or CTE; and (2) an Impairment Subclass defined as: "All members of the Class who experienced or are experiencing symptoms associated with Alzheimer's Disease, Parkinson's Disease, ALS, postconcussion syndrome, neurological deficit, cognitive impairment, dementia, or CTE."[64]

In November 2014, the NHL filed two motions to dismiss, one based on preemption grounds[65] and one for failure to state a claim.[66] In the latter, the NHL argued that all of the named plaintiffs' claims are untimely and therefore time-barred, that the plaintiffs' fraud-based claims (specifically, negligent misrepresentation by omission, fraudulent concealment and fraud by omission/failure to warn) are not pled with particularity because the plaintiffs have not alleged a duty to disclose, and that certain plaintiffs' medical monitoring claims fail because none of the applicable jurisdictions recognize a stand-alone claim for medical monitoring.[67] On January 8, 2015, the court heard oral arguments on the NHL's motions, and on March 25, 2015, the court entered an order denying in part and denying without prejudice in part the NHL's motion to dismiss for failure to state a claim.[68] The court has yet to rule on the NHL's preemption motion.

The parties in the NHL MDL are presently engaging in heated disputes related to discovery issues regarding players' medical records and the deposition of NHL Commissioner Gary Bettman. Specifically, the plaintiffs previously noticed the deposition of Bettman as a fact witness, which the NHL has opposed. On May 5, 2015, the court ordered that, since the NHL identified Bettman as "a person with knowledge about the matters at issue in this lawsuit and about the business of NHL hockey in general" in its Rule 26 Initial Disclosures, the plaintiffs are permitted to depose Bettman as a fact witness.[69] The court further ordered, however, that the NHL should first produce relevant documents in Bettman's custody, so

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63 *See id*., ECF No. 28, ¶ 387.

64 *See id*., ¶ 388 and 389.

65 *See id.,* ECF No. 37.

66 *See id.,* ECF No. 43.

67 *See id.,* ECF No. 43.

68 *See id.,* ECF No. 126.

69 *See id.,* ECF No. 151.

that the NHL can adequately prepare Bettman for his testimony, and accordingly that Bettman "may deposed in July 2015, but no earlier."[70] The court also ordered that nine other fact witnesses identified by the plaintiffs should be deposed first.[71]

b. Individual Action

At present, the action styled as *Boogaard, Successor Personal Representative of the Estate of Derek Boogaard, Deceased v. NHL,* et al., (the "*Boogaard* action") is the only known individual concussion-related injury action against the NHL.[72] The *Boogaard* action differs from the class actions in that, although the *Boogaard* plaintiffs allege that Boogaard suffered concussion-related injuries, the thrust of the complaint is that Boogaard became addicted to pain medication prescribed by the NHL's staff members and eventually died of a drug overdose.[73] The plaintiffs allege that the NHL "knew, or should have known, that the Enforcers/Fighters in the NHL had an increased risk of brain damage due to concussive and sub-concussive brain trauma and were particularly susceptible to addiction."[74]

The parties in the *Boogaard* action are currently engaged in discovery and motion practice.[75] Specifically, in March 2015, the plaintiffs deposed Julie Grand, the Senior Vice President and Deputy General Counsel in the Legal Department of the NHL.[76] In April 2015, the plaintiffs filed a motion to compel discovery regarding the scope of the collective bargaining agreements and the policies and procedures concerning concussion diagnosis and management of NHL players.[77]

2. Legal Theories, Defenses and Other Considerations

Like the plaintiffs in the NCAA and NFL actions, the plaintiffs generally allege that the NHL was aware of the short- and long-term effects of repeated concussions and head trauma, yet failed to warn hockey players of these risks. The plaintiffs further allege these and other actions and inactions by the NHL resulted in players suffering from, or increased the risk of contracting, serious brain diseases such as Alzheimer's, dementia, and Parkinson's, and accelerated the speed and severity of players' post-retirement mental decline.

More specifically, in the master complaint, the plaintiffs allege that the NHL knew that the medical community has focused on hockey players' brain injuries, yet the NHL continued

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[70] *See id*.

[71] *See id*.

[72] Boogaard v. NHL, No. 1:13-cv-04846 (N.D. Ill. 2013).

[73] *See id*., ECF No. 59-3.

[74] *See id*., ECF No. 59-3 at ¶ 49.

[75] *See generally id*., ECF No. 76.

[76] *See id*., ECF No. 88.

[77] *See id*., ECF No. 92.

to promote unnecessary brutality and violence as a "dominant element" of hockey.[78] The plaintiffs allege that, rather than use its resources to protect players from known dangers, the NHL capitalized on violence while downplaying risks, and in doing so, undertook a duty of care to its players.[79] According to the plaintiffs, current NHL players still face a significant risk of head trauma.[80]

In the master complaint, the plaintiffs identify seven common questions, which they allege "are each separate issues that should be certified for classwide resolution[,]" e.g., the scope of the NHL's duty to hockey players and whether the NHL breached that duty.[81] The plaintiffs bring causes of action for declaratory relief, medical monitoring, negligence and fraud against the NHL.[82]

As evidenced by the NHL's motions to dismiss, discussed *supra,* the NHL's defenses and other considerations are similar to those in the NFL concussion litigation. In the *Boogaard* action, the NHL filed a motion to dismiss in which it argued that the plaintiffs' claims are preempted by the applicable collective bargaining agreements, but the court has yet to rule on the motion.[83]

D. *Concussion-Related Injury Litigation Against FIFA*

1. Status of Litigation

On August 27, 2014, an action styled as *Mehr, et al. v. FIFA, et al*, was filed by the parents of youth soccer players against FIFA and numerous other soccer organizations regarding traumatic brain injuries (the "*Mehr* action").[84] The purported class is defined as:

> All current or former soccer players who from 2002 to the present competed for a team governed by FIFA, The United States Soccer Federation, U.S. Youth Soccer, American Youth Soccer Organization, U.S. Club Soccer, or California Youth Soccer Association.[85]

This is the only known concussion-related injury case against FIFA to date. Interestingly, the plaintiffs' counsel in this case is the same as the lead plaintiffs' counsel in the NCAA MDL.

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[78] *See* NHL MDL, ECF No. 28, ¶¶ 225-300.

[79] *See id*. at ¶¶ 301-356.

[80] *See id*. at ¶¶ 372-386.

[81] *See id*.. at ¶ 392.

[82] *See id*. at ¶¶ 399-454.

[83] *See* Boogaard, ECF No. 43.

[84] Mehr v. FIFA, No. 4:14-cv-03879-PJH (N.D. Cal. 2014).

[85] *See id*.

2. Legal Theories, Defenses and Other Considerations

The plaintiffs in the *Mehr* action generally allege that FIFA and the other soccer organizations are negligent in how they deal with head injuries, have failed to provide adequate concussion management and have failed to adopt proper rules for protecting players under age 17 from head injuries.[86] The plaintiffs bring causes of action for negligence, breach of voluntary undertaking and medical monitoring.[87] The plaintiffs seek rule changes that range from limiting the amount of times a minor is allowed to head the ball during play to changing FIFA's substitution policies.[88]

3. Other Concussion-Related Injury Litigation

Quite a few other concussion-related injury lawsuits have been filed around the nation. For example, individual and class action lawsuits have been filed against high schools, youth organizations, and coaches and other individuals involved in these schools and organizations.[89] Former professional athletes have filed lawsuits against the teams for which they played.[90] Athletes have also filed individual and class action lawsuits against helmet manufacturers.[91]

III.
Related Insurance Coverage Litigation

A. *The NCAA Coverage Litigation*

1. Status of Litigation

In December 2012, the NCAA filed a declaratory judgment action styled as *NCAA v. TIG Ins. Co., et al.*, in Indiana state court against all the insurers that had issued the NCAA primary or excess liability policies since the mid-1960's (the "NCAA coverage action").[92] TIG had filed a declaratory judgment action in Kansas federal court against the NCAA and certain of the NCAA's primary insurers in June 2012, but voluntarily dismissed that action in August 2013.[93]

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[86] *See id*., ECF No. 1.

[87] *See id*.

[88] *See id*.

[89] *See*, *e.g.*, Jobe v. NCAA, No. 3:13-cv-00799-HTW-LRA (S.D. Miss.) (filed Dec. 23, 2013); Ripple v. Marble Falls Indep. Sch. Dist., No. 1:12-cv-00827-DAE (W.D. Tex.) (filed Sept. 7, 2012); Alt v. Shirey, No. 2:11-cv-004680-DSC-LPL (W.D. Pa.) (filed Apr. 4, 2011).

[90] *See*, *e.g.*, Namoff v. D.C. Soccer LLC, No. 0067050-12 (D.C. Sup. Ct.) (filed Aug. 29, 2012).

[91] *See*, *e.g.*, Enriquez v. Easton-Bell Sports, Inc., No. 1:12-cv-20613-PCH (S.D. Fla.) (filed Feb, 14, 2012).

[92] NCAA v. TIG Ins. Co., No. 49D13-1212-PL-048782 (Marion Cty. Super. Ct., Ind.) (filed Dec. 21, 2012).

[93] *See* TIG Ins. Co. v. NCAA, No. 2:12-cv-02361-JWL-JPO (D. Kan.) (filed Jun. 8, 2012), ECF Nos. 1 and 48.

The parties in the NCAA coverage action previously engaged in extensive mediation and settlement negotiations, and the NCAA advised the court that agreements in principle have been reached with several insurers and in the final stages of negotiation.[94] Some of these settlements are dependent upon approval of the settlement in the NCAA MDL.[95] In mid-2014, the NCAA has proposed to the insurers a case management plan that contemplates a phased approach with defense obligations and costs being litigated through December 2016, with litigation of indemnity issues to follow if necessary.[96] According to the NCAA, once the settlements in the NCAA MDL and the NCAA coverage action are finalized, the parties to the settlements are prepared to dismiss the insurers who have settled the NCAA coverage action without further litigation.[97] At least one non-settling insurer has filed a motion to dismiss the NCAA coverage action, but the court granted the NCAA's request to continue the hearing on that motion pending approval of the settlement in the NCAA MDL and the resolution of all pending settlements in the NCAA coverage action.[98]

In mid-May 2015, the NCAA filed a motion to stay the coverage action indefinitely with respect to all the underlying class actions consolidated into the MDL.[99] According to the NCAA, it has entered into a defense cost sharing agreement with the primary insurers to fund the NCAA's defense against the underlying class actions, and, as a condition of this agreement, "the NCAA agreed to move to stay the [c]overage [l]itigation … with the understanding and agreement that if the Court grants [the stay], any party to the agreement may move to lift the stay at any time."[100]

2. Coverage Issues and Other Considerations

There are many coverage issues in the NCAA coverage action. Among them:

1. Choice of law. Although the NCAA coverage action is pending in Indiana and the NCAA is headquartered in Indiana, other jurisdictions arguably have a connection to the coverage dispute, including Illinois (where the NCAA MDL is pending) and the states in which each insurer is located and the NCAA's broker is located.
2. Whether there was an occurrence.

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[94] *See* NCAA coverage action, NCAA's Motion to Continue (filed Oct. 16, 2014), ¶ 5.

[95] *See id*.

[96] *See id*. at ¶ 7.

[97] *See id*. at ¶ 8.

[98] *See* NCAA coverage action, Order on NCAA's Motion to Continue October 29, 2014 (entered Oct. 23, 2014).

[99] *See* NCAA coverage action, NCAA's Motion to Stay (filed May 14, 2015).

[100] *Id*.

3. If there was an occurrence, how many? In addition to case law, issues to be considered in analyzing the number of occurrences include the temporal, geographic and sport diversity of the named plaintiffs, as well as that the plaintiffs in the NCAA MDL arguably allege multiple causes as the basis for the NCAA's liability, e.g., that the NCAA failed to address the coaching of tackling, checking or playing methodologies that cause head injuries; that the NCAA failed to implement regulations which prohibit techniques likely to lead to concussions and head injuries; that the NCAA failed to educate coaches, trainers and student athletes as to concussions symptoms; and that the NCAA failed to implement system-wide "return-to-play guidelines for athletes who have sustained concussions.
4. Whether medical monitoring costs are damages on account of bodily injury. Many states have not recognized a cause of action for medical monitoring, other states will recognize medical monitoring only when accompanied by a present physical injury, and courts across the nation are divided as to whether medical monitoring is covered by insurance.[101]
5. Whether, for excess insurers, underlying limits have been properly exhausted.
6. Whether applicable "other insurance" has been exhausted.
7. Whether the NCAA has satisfied all applicable retentions and deductibles.
8. Appropriate allocation of aggregate limits.
9. Trigger of coverage.
10. Applicability of "professional liability" or "professional services" exclusions. Some class action lawsuits, as well as some individual lawsuits, contain allegations against the NCAA which arguably arise from acts of a professional nature or the failure to perform acts of a professional nature, including allegations against doctors and athletic trainers as well as the NCAA itself.
11. Applicability of the Athletic Participants Exclusion. Some policies issued to the NCAA contain an exclusion for injury sustained while participating in an athletic event sponsored by the NCAA.
12. Whether certain exclusions would apply if there is a general finding of negligence on behalf of the NCAA, and, if so, who bears the burden to apportion between covered and non-covered claims.

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[101] *Cf.*, *e.g.*, HPF, L.L.C. v. General Star Indem. Co., 788 N.E.2d 753, 758 (Ill. App. Ct. 2003) (no coverage for medical monitoring) *with* Baughman v. U.S. Liability Ins. Co., 662 F.Supp.2d 386, 393-94 (D. N.J. 2009) (medical monitoring constituted "damages" and exposure to mercury at a daycare center constituted "bodily injury" giving rise to the duties to defend and indemnify).

13. Subrogation and contribution issues. Depending on the particular language of a policy at issue, there may be a potential for subrogation or contribution actions against other insurers, and there also may be a potential for contribution based on the doctrine of equitable contribution.

Of course, some of the above issues are relevant to all of the NCAA's insurers, while others are relevant only to certain insurers, and depend on whether the insurer issued primary or excess policies, where the insurer falls in the NCAA's coverage program, and the particular language of each insurer's policy or policies.

B. *The NFL Coverage Litigation*

1. Status of Litigation

In August 2012, one of the NFL's insurers filed a declaratory judgment action styled as *Alterra American Insurance Co. v. NFL*, against the NFL in New York state court, seeking a declaration that it has no obligation to defend or indemnify the NFL for concussion-related injury claims (the "NFL coverage action").[102] Two days later, the NFL filed a declaratory judgment in California state court against 32 of its insurers, alleging that between 1968 and 2012, the insurers issued 187 primary and umbrella or excess insurance policies to NFL.[103] The insurers filed a motion to dismiss the case filed in California state court by the NCAA, arguing that venue was improper. The California Court of Appeal affirmed the Superior Court's order that the California state case should be stayed pending the outcome of the NFL coverage action in New York.[104]

Although the settlement in the NFL MDL has been preliminarily approved, the NFL coverage action remains open.

2. Coverage Issues and Other Considerations

There are many coverage issues in the NFL coverage action, and the majority of these issues are similar to that in the NCAA coverage action. Some additional coverage issues specific to the NFL coverage action include:

1. Applicability of the employers' liability exclusion. Some policies may contain an exclusion for coverage for bodily injury to an employee of an insured arising out of and in the course of the employee's employment by the insured.
2. Applicability of the Participant Liability exclusion. Some policies may contain an exclusion which may apply when a former or current player or his spouse sues another former or current player or his spouse for concussion-related injuries.

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[102] Alterra Am. Ins. Co. v. NFL, No. 652813-2012 (N.Y. Sup. Ct.) (filed Aug. 13, 2012).

[103] *See* NFL v. Fireman's Fund Ins. Co., No. BC490342 (Los Angeles Sup. Ct.) (filed Aug. 15, 2012).

[104] *See* NFL v. Fireman's Fund Ins. Co., No. B245619 (Cal. Ct. App.) (entered May 28, 2013).

3. Applicability of the Fellow Employee exclusion or the Employees and Volunteers exclusion.
4. The NFL's obligation under any applicable workers' compensation laws and any collective bargaining agreements.

Like in the NCAA coverage action, some of the coverage issues in the NFL coverage action are relevant to all of the NFL's insurers, while others are relevant only to certain insurers, and depend on whether the insurer issued primary or excess policies, where the insurer falls in the NFL's coverage program, and the particular language of each insurer's policy or policies.

C. *The NHL Coverage Litigation*

1. Status of Litigation

On April 25, 2014, TIG Insurance Company ("TIG"), one of the NHL's insurers, filed a declaratory judgment action styled as *TIG Insurance Company v. National Hockey League, et al.*, against the NHL and eleven other insurers (the "NHL coverage action").[105] However, in mid-April 2015, the court stayed the coverage action pursuant to an unopposed motion by TIG, given that the parties executed a tolling agreement.[106]

2. Coverage Issues and Other Considerations

The coverage issues and other considerations in the NHL coverage action are likely similar to those in the NCAA and NHL coverage actions. The applicability of the expected or intended injury exclusion may also be at issue, given the violent nature of the sport of hockey.

IV.
Medicine Pertinent to Concussion-Related Litigation

Having explained the landscape of sports-related concussion litigation, we now consider the medicine regarding such injuries. Below, we explain concussion and sub-concussive impacts and the long-term consequences some researchers believe result from the types of brain injuries sustained repeatedly while playing sports. Next, we report on the medical monitoring plan proposed for current and former NCAA athletes as an example of the relief sought in this type of litigation.

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[105] TIG Insurance Co. v. Nat'l Hockey League, No. 651162/2014 (N.Y. Sup. Ct.).

[106] *See id.*, ECF No. 24.

A. *Brain Injuries*

There is a wide spectrum of traumatic brain injuries (TBI). A TBI may result from an impact to one's head or a "penetrating head injury that disrupts the normal function of the brain."[107] The Centers for Disease Control and Prevention (CDC) describe a mild TBI as "a brief change in mental status or consciousness."[108] A severe TBI is marked by "an extended period of unconsciousness or amnesia after the injury."[109]

1. Concussions

Concussions are a form of mild TBI, but not all mild TBIs are concussions. A "mild" concussion is typically not life threatening, is limited in duration, and resolves on its own over time.[110] The CDC reports that between 1.6 and 3.8 million sports-related concussions occur each year in the United States.[111] But, some researchers contend that many athletes fail to report concussions; thus, the true incidence of concussions is likely higher than documented.[112] Some athletes have admitted to lying about experiencing a concussion to remain on the field of play or retain a starting position.[113]

Concussion is difficult to define because it has many causes and may result when there is no apparent injury to one's head. The American Academy of Neurology defines concussion as "a clinical syndrome of biomechanically induced alteration of brain function, typically affecting memory and orientation, which may involve loss of consciousness."[114] Concussion can occur due to "a bump, blow, or jolt to the head . . . creating chemical changes in the brain."[115] Further, a fall or blow to another part of the body "that causes the brain and head to move quickly back and forth" may also cause a concussion.[116] Inside one's skull,

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[107] *Traumatic Brain Injury in the United States: Fact Sheet*, Ctrs. for Disease Control & Prevention, http://www.cdc.gov/traumaticbraininjury/get_the_facts.html (last updated June 2, 2014).

[108] *Id*.

[109] *Id*.

[110] *Id*. at 2-3.

[111] Kimberly G. Harmon, *American Medical Society for Sports Medicine position statement: concussion in sport*, 47 B. J. Sports Med. 15, 3 (2013).

[112] *Id*. at 3.

[113] *See*, *e.g.*, Josh Katzowitz, *Troy Polamalu says he's suffered 'eight or nine' concussions, would lie to stay on field,* CBS Sports (July 18, 2012), http://www.cbssports.com/nfl/eye-on-football/19608448/troy-polamalu-has-suffered-eight-or-nine-concussions-would-lie-to-stay-on-field.

[114] Christopher C. Giza, Jeffrey S. Kutcher, Summary of evidence-based guideline update: evaluation and management of concussion in sports, Am. Acad. of Neurology, Mar. 2013, at 1.

[115] *What is a Concussion?,* Ctrs. for Disease Control & Prevention, http://www.cdc.gov/headsup/basics/concussion_whatis.html (last updated Feb. 16, 2015).

[116] *Id*.

the brain floats in cerebrospinal fluid, which acts as a shock absorber for minor impacts.[117] A concussion occurs when the brain moves rapidly inside the skull, impacting first one side of the skull and then the other when the brain decelerates.[118] Concussion may also occur due to rotational forces where "the head rapidly rotates from one side to another causing shearing and straining of brain tissues."[119]

Concussions have two phases of injury: (1) the moment of impact, and (2) the indirect result of trauma on processes of the brain.[120] Concussion may be manifested by any one of the following: "loss of consciousness [not to exceed 30 minutes], loss of memory for events immediately preceding or following the injury [that lasts less than 24 hours], an alteration in mental status (feeling dazed, confused, or disoriented) at the time of injury, or focal neurological signs that may or may not be transient."[121] An athlete with concussion may experience many symptoms that are non-specific to a head injury, such as headache, the most common symptom of concussion, or nausea, vomiting, and dizziness.[122] For 80-90% of athletes, the physical symptoms of concussion resolve within seven days of injury.[123]

There are several assessment protocols for determining if an athlete has experienced concussion. Some of the assessment tools include asking athletes questions to determine if they are oriented to place and time, as well as balance tests.[124] A CT or MRI scan may be used to aid in the diagnosis of a head injury.[125] Additionally, neuropsychological tests may indicate that an athlete has a concussion.[126] Such tests assess a range of abilities including memory, concentration, information processing, executive function, and reaction time.[127] Physicians may use such tests to confirm self-reported symptoms and track recovery, including determining when an athlete should return to participation in sports.[128]

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[117] *Resources*, Sports Concussion Inst., http://concussiontreatment.com/resources/ (last visited June 21, 2015).

[118] *Id*.

[119] *Id*.

[120] Matthew L. Dashnaw, *An overview of the basic science of concussion and subconcussion: where we are and where we are going*, 33 Neurosurg Focus 1, 2 (2012).

[121] Hal S. Wortzel, *Forensic Application of Cerebral Single Photon Emission Computed Tomography in Mild Traumatic Brain Injury*, 36 J. Am. Acad. Psychiatry L. 310, 311 (2008).

[122] Harmon, *supra* note 111, at 3.

[123] *Id*.

[124] Sport Concussion Assessment Tool – 3rd Edition, British J. of Sports Med. (2013), http://bjsm.bmj.com/content/47/5/259.full.pdf (last visited June 21, 2015).

[125] Heads Up: Facts for Physicians About Mild Traumatic Brain Injury (MTBI), Ctrs. for Disease Control & Prevention, http://www.cdc.gov/concussion/headsup/pdf/Facts_for_Physicians_booklet-a.pdf (last visited June 21, 2015).

[126] *Id*.

[127] *Id*.

[128] *Id*.

Short term altered brain function underlies the clinical signs of concussion. When the brain strikes the interior of the skull, neural cells may be squeezed, stretched, and torn.[129] Neural cells function best when precisely balanced and spaced.[130] Stretching, squeezing, and tearing of neural cells can change that precise balance, which may affect how the brain processes information.[131] Further, the interior of the skull is a rough, hard surface that may damage brain tissue upon impact, which also affects the brain's ability to process information.[132] During injury, the brain may rotate and the resulting "friction can stretch and strain the brain's threadlike nerve cells called axons."[133] Axons are the infrastructure attached to nerve cells in the brain that transmit nerve impulses from the cell body of the neuron to terminals at the end of the axon, which then transmit the nerve impulses to other nerve cells.[134]

Concussion indicates "a complex cascade of ionic, metabolic and pathophysiological events that is accompanied by microscopic axonal injury."[135] The ionic and metabolic imbalance that results from concussion requires energy to re-establish equilibrium within the brain, or homeostasis.[136] But, "the need for increased energy occurs in the presence of decreased cerebral blood flow and ongoing mitochondrial dysfunction."[137] Just when the brain urgently needs energy for healing, energy is in short supply. Consequently, an athlete's outward physical symptoms of concussion may resolve before normal brain function returns. If the athlete returns to play before normal brain function returns and sustains a second brain injury, the brain experiences even worse metabolic changes, and the likelihood of experiencing significant cognitive defects increases.[138] The disruptions to brain function may be more severe in youth and repeated concussions in youth or adult brains could result in long term diminished brain function.[139]

A number of risk factors may influence whether an athlete develops a concussion after a head impact. "A history of prior concussion, a greater number, severity or duration of symptoms after a concussion, female sex, genetic pre-disposition, a history of a learning

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[129] *Mild Brain Injury and Concussion*, Brain Injury Ass'n of Am., http://www.biausa.org/mild-brain-injury.htm (last visited June 21, 2015).

[130] *Id*.

[131] *Id*.

[132] *Id*.

[133] *Id*.

[134] *Axon Definition*, MediLexicon, http://www.medilexicon.com/medicaldictionary.php?t=8994 (last visited June 21, 2015).

[135] Harmon, *supra* note 111, at 3.

[136] *Id*.

[137] *Id*.

[138] *Id*.

[139] *Id*.

disorder, ADD, migraines or mood disorder, and playing certain positions have all been suggested to affect the risk of sustaining a concussion or having a more protracted course."[140]

2. Sub-concussive Impacts

A sub-concussive hit is an impact to the head that is less forceful and does not result in concussion.[141] But, to be classified as sub-concussive, hits must occur repeatedly.[142] For example, the impacts to a football player's head as he repeatedly blocks and tackles or the impacts to a hockey player's head due to contact with other players and the boards are sub-concussive impacts.[143] These types of hits occur multiple times throughout the normal course of participation in many contact sports, and they are "just part of the game." Unlike concussion, sub-concussive hits are not the same as "getting your bell rung." Over time, sub-concussive impacts may accumulate. "An athlete's risk of experiencing long-standing effects of repetitive blows is likely measured as a cumulative dose over a lifetime, and could include factors such as age at exposure, type, and magnitude of exposure, recovery, genotype, and others."[144] Some researchers believe that the cumulative effect of these smaller impacts may lead to the same type of damage in the brain that are linked to concussions.

TBI may cause disruption in the blood-brain barrier (BBB).[145] The BBB is a protective barrier between the bloodstream and the brain.[146] When working properly, the BBB "holds in proteins and molecules that bathe the brain and protect it from foreign substances."[147] TBI, however, causes disruption in the BBB that allows certain proteins to leak into the bloodstream.[148] Rupture of the BBB means that brain proteins "released from brain cells enter the bloodstream where they may trigger an autoimmune response."[149] When a sub-concussive impact occurs, damaged cells in the brain may secrete a protein labeled S100B, which may cross the BBB and enter one's bloodstream.[150] When S100B crosses the BBB,

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[140] Harmon, *supra* note 111, at 4.

[141] Institute of Med. & Nat'l Research Council, Sports-Related Concussions in Youth: Improving the Science, Changing the Culture 203-04 (Robert Graham et al. eds., 2014) [hereinafter "Sports-related concussions in youth"].

[142] *Id*.

[143] *Id*. at 206.

[144] Dashnaw, *supra* note 120, at 2.

[145] Sports-related concussions in youth, *supra* note 141, at 206.

[146] *Study Suggests New Way of Thinking about Brain Injury – As Autoimmune Disorder*, Univ. of Rochester Med. Ctr. (Mar. 6, 2014), http://www.urmc.rochester.edu/news/story/index.cfm?id=3767.

[147] *Id*.

[148] *Id*.

[149] Zhiqun Zhang et al., *Human Traumatic Brain Injury Induces Autoantibody Response against Glial Fibrillary Acidic Protein and Its Breakdown Products*, 9 PLOS ONE, 1, 2 (2014), available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3965455/pdf/pone.0092698.pdf.

[150] *Id*.

the body has an autoimmune response and produces S100B antibody. The human body's autoimmune system is one of its best defenses against disease; however, it can also cause the body to attack itself. The presence of S100B antibodies may be harmful because the antibodies may attack S100B throughout the body, including in the brain.[151]

The S100B protein has many beneficial uses in the body, including, cell growth, cell structure, energy metabolism, calcium stability, and nerve signal transmission.[152] When auto immune antibodies attack this protein, it is impeded from performing its functions. As such, brain cell structure may break down more easily.[153]

One study followed a group of college football players who sustained repeated head injuries that did not result in concussion.[154] Over the course of a season, the group showed elevated S100B and S100B antibodies. The study authors noted that sources of S100B exist in the human body outside of the central nervous system, but the authors also stated that the data suggests a link between S100B and S100B antibodies in the bloodstream of these football players and sub-concussive impacts.[155] Based on this study and others involving more football players and hockey players, some researchers assert that repeated sub-concussive hits may cause some cognitive impairment and long-term changes to the brain.[156]

But there are few studies on the effects of sub-concussive impacts. Only recently have the routine hits experienced in contact sports become a source of concern. The studies that exist involve small samples of athletes; thus, the results are not conclusive and cannot be applied to broader populations of athletes.

B. *Disease Associated with Concussion and Sub-Concussive Impacts*

After even one concussion or a number of sub-concussive impacts, an athlete may develop post-concussion syndrome (PCS). It is unclear why some athletes develop PCS after only one or a mild concussion, while other athletes who have suffered a greater number or more severe concussions do not develop PCS. Further, consensus does not yet exist regarding the diseases that may develop from multiple concussions and long-term sub-concussive impacts. Some medical experts have linked the occurrence of multiple concussions to a neurodegenerative condition called chronic traumatic encephalopathy (CTE), mild cognitive impairment, and depression.[157] Each of these conditions has been alleged to exist in

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[151] *Study Suggests New Way of Thinking about Brain Injury – As Autoimmune Disorder*, *supra* note 146.

[152] Hiroshi Nishiyama et al.*,, Glial protein S100B modulates long-term neuronal synaptic plasticity*, Proceedings of the Nat'l Acad. of Scis. (Mar. 19, 2002), http://www.pnas.org/content/99/6/4037.full.pdf (last visited June 21, 2015).

[153] *Study Suggests New Way of Thinking about Brain Injury – As Autoimmune Disorder, supra* note 146.

[154] Sports-related concussions in youth, *supra* note 141, at 206.

[155] *Id*.

[156] *Id*. at 207-08.

[157] *What is CTE?*, Boston Univ. CTE Ctr., http://www.bu.edu/cte/about/what-is-cte/ (last visited June 21, 2015).

some athletes that purportedly suffered several concussions while playing sports. Because plaintiffs in concussion litigation seek medical monitoring for signs of PCS and CTE, both conditions are explained below.

1. Post-Concussion Syndrome

PCS is the term used when, after a head injury, one experiences at least three of the main symptoms of concussion, such as headache, dizziness, fatigue, memory problems, insomnia, and irritability.[158] PCS may occur within days or weeks of the concussive hit, but typically PCS resolves within three months.[159] Not all who experience concussion will develop PCS.

No single method, analysis, or test exists to diagnose PCS, and no single treatment exists due to the variety of symptoms one may experience. Rather, a physician typically treats the symptoms specific to a patient believed to have PCS. Depending on the patient's symptoms, treatment may include psychotherapy treatment, cognitive therapy, and prescription medication for depression, anxiety, and headaches.[160]

Some experts attribute PCS to structural damage to the brain.[161] Others believe PCS symptoms are attributable to psychological conditions, such as depression, anxiety, and post-traumatic stress disorder because the symptoms of these conditions mirror the symptoms of PCS.[162]

2. Chronic Traumatic Encephalopathy

CTE, perhaps, has garnered the most recent media attention as researchers have found CTE in the brains of deceased NFL and NHL players.[163] Further, while there is some treatment for the symptoms associated with CTE, there is no known treatment or "cure" for CTE, which often results in death.[164]

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[158] Post-concussion syndrome, Mayo Clinic (Aug. 19, 2014), http://www.mayoclinic.org/diseases-conditions/post-concussion-syndrome/basics/symptoms/con-20032705.

[159] *Id*.; Joe Bowman, *Post-Concussion Syndrome*, Healthline (Jan. 27, 2014), http://www.healthline.com/health/post-concussion-syndrome#Overview1.

[160] *Id*.

[161] *Id*.

[162] *Id*.

[163] *See* Jack Linshi, *Study: 96% of Deceased NFL Players' Brains Had Degenerative Disease*, Time (Sept. 30, 2014), http://time.com/3450674/nfl-brain-disease/; *see also* B*rain disease CTE hits athletes differently, brain and behaviour study suggests*, The Hockey News (Aug. 21, 2013), http://www.thehockeynews.com/articles/53089-Brain-disease-CTE-hits-athletes-differently-brain-and-behaviour-study-suggests.html.

[164] *Chronic Traumatic Encephalopathy,* Sports Legacy Institute, http://www.sportslegacy.org/research/cte/ (last visited June 20, 2015).

Generally, encephalopathy describes "any diffuse disease of the brain that alters brain function or structure."[165] Encephalopathy generally results from a number of causes, including bacteria, tumor, exposure to toxic elements, multiple incidences of trauma, poor nutrition, and other causes.[166] Repeated trauma to the brain may cause progressive degeneration of brain tissue.[167] Multiple concussions may cause an abnormal build-up of tau, a protein in the brain.[168] The normal function of tau is to stabilize microtubules, which are cylindrical hollow parts of a cell that play a role in the cell's shape.[169] Excess tau builds up in the area of the brain where injury has repeatedly occurred and spreads to other cells in a web like fashion.[170] Once the spread of the web invades enough areas of the brain, certain areas of the brain atrophy.[171] As the disease advances, it attacks the hippocampus, the part of the brain instrumental in memory and learning, as well as the amygdala, which regulates aggressiveness and rage.[172]

Researchers have created a clinical picture of CTE by various retrospective study methods.[173] But, currently, CTE is confirmed only by studying the brain after death. There is no test, method, or diagnostic criteria to identify CTE in a live person.[174] Researchers believe that the signs of CTE may manifest years after the last injury occurs and classify the effects of CTE as altering one's cognition, mood, and behavior. Cognitive and behavioral symptoms reported in athletes believed to have CTE are closely associated with the areas of the brain affected by CTE.[175] The symptoms in each of the three categories of cognition, mood, and behavior progress in severity and neurodegeneration increase over time.[176] The earliest stages of CTE may not result in any discernible symptoms. Later, as CTE progresses, some

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[165] *What is Encephalopathy?*, Nat'l Institute of Neurological Disorders & Stroke, http://www.ninds.nih.gov/disorders/encephalopathy/encephalopathy.htm (last updated Nov. 9, 2010).

[166] *Id*.

[167] *What is CTE?, supra* note 157.

[168] *Id*.

[169] *Definition: Tau Protein*, MediLexicon, http://www.medilexicon.com/medicaldictionary.php?t=73051 (last visited June 21, 2015).

[170] Jane Leavy, *The Woman Who Would Save Football*, GrantLand (Aug. 17, 2012), http://grantland.com/features/neuropathologist-dr-ann-mckee-accused-killing-football-be-sport-only-hope/.

[171] *Id*.

[172] *Id*.

[173] Christine Baugh, *Chronic traumatic encephalopathy: neurodegeneration following repetitive concussive and subconcussive brain trauma*, Brain Imaging and Behavior (May 03, 2012), available at http://www.bu.edu/cte/files/2012/08/Baugh_Chronic-Traumatic-Encephalopathy_2012.pdf.

[174] *Id*.

[175] *Id*.

[176] *Id*.

may experience learning and memory impairment, depression, apathy, irritability, suicidality, poor impulse control, aggression, and increased violence.[177] Some research indicates that disinhibition may also occur, resulting in a greater likelihood of substance abuse.[178] As CTE progresses, symptoms worsen. Dementia is usually evident in cases of athletes with advanced CTE over age 65.[179]

Researchers, some of whom are serving as experts for plaintiffs in concussion litigation, report that once CTE destroys a certain amount of brain tissue, it is nearly impossible to differentiate the cause of dementia from other common causes, such as Alzheimer's disease.[180] But, according to these researchers, "early presentation and course of CTE can distinguish it from other causes of dementia."[181] They believe certain characteristics of CTE distinguish CTE from other causes for dementia, including onset of symptoms between age 30-50, slow prolonged course of progression, no familial risk, and history of repeated head trauma.[182] But, they note that even these factors do not definitively indicate CTE over other causes for dementia.[183] Moreover, they acknowledge that the onset and symptoms of PCS and CTE may closely overlap. Thus, differentiating between the two disorders can be difficult. Finally, researchers admit that not all athletes with a history of concussions will show clinical signs of CTE. While at death their brains may have increased levels of tau proteins, they will have remained symptom-free, which may be due to their brains' ability to rewire itself or overcome the disease in other ways.[184]

C. *Medical Monitoring Proposal in NCAA Litigation*

In the NCAA litigation, Dr. Robert C. Cantu states the premise for a medical monitoring program for current and former NCAA contact sport athletes and outlines the parameters of such a program.[185] We summarize his highly detailed plan below as exemplary of medical monitoring programs sought in similar concussion litigation explained above.

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[177] *Id*.

[178] *Id*.

[179] *Id*.

[180] *Id*.

[181] *Id*.

[182] *Id*.

[183] *Id*.

[184] Alan Schwarz, *The Next Step for Researchers Is Not Finding Brain Trauma*, N.Y. Times, May 8, 2011, at SP6 available at http://www.nytimes.com/2011/05/08/sports/football//08duerson.html?_r=0.

[185] Report of Dr. Robert C. Cantu, *Arrington v. NCAA*, No. 11-cv-06356, ECF No. 180 (filed July 19, 2013). Subsequent to filing his report, the NCAA settlement has expanded to include non-contact sport athletes as well.

1. The Premise for a Medical Monitoring Program

Based on his research and examination of various NCAA athletes, Dr. Cantu opines that NCAA athletes in contact sports have suffered unrecognized concussive and sub-concussive impacts. Consequently, these athletes can suffer permanent decreases in brain function, including "memory loss, early Alzheimer's-like disease called CTE, movement disorders such as parkinsonism, and emotional disturbances."[186] Dr. Cantu expresses concern regarding not only primary head injury impacts, but also notes a complication of concussions – second impact syndrome.[187] He describes second impact syndrome as when an athlete suffers a concussion and "sustains subsequent concussive injury, resulting in diffuse brain swelling and severe, permanent neurological dysfunction or death."[188]

Dr. Cantu states that timely diagnosis of concussion and prompt treatment can help prevent more serious concussion complications.[189] Because they have sustained unrecognized concussions and potentially second impact syndrome, current and former NCAA athletes who have played contact sports should be monitored to determine whether they have symptoms of PCS or "other cognitive impairments or mental disturbances."[190] Once these athletes and their healthcare providers have more information about their conditions and symptoms, the athletes can seek appropriate treatment, ranging from physical and cognitive therapy to prescription medication.

2. The Basic Components of a Medical Monitoring Program

According to Dr. Cantu, a complete neurological assessment will yield the type of information an NCAA contact sport athlete needs to determine if he or she suffers from disorders associated with concussive or sub-concussive impacts. This assessment will occur at the outset of the program and be repeated every five years, or when an athlete is symptomatic. Monitoring physicians will conduct "focused neurocognitive, visual, and balance assessments."[191] Also key to identifying any long-term effects of brain injury will be the athlete's prior concussion history and conditions that affect recovery.[192] Physicians in the monitoring program will also obtain a symptom checklist from each athlete.[193] All athletes being monitored will take a neurocognitive test, which includes computer-based tests and paper and pencil tests to assess cognitive skills, mood, and behavior.[194]

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[186] *Id*. ¶ 304.

[187] *Id*.

[188] *Id*.

[189] *Id*.

[190] *Id*. ¶ 305.

[191] *Id*. ¶ 306.

[192] *Id*.

[193] *Id*.

[194] *Id*.

V.
Medical Monitoring Claims and Class Certification Obstacles

Certification of a medical monitoring class is a component of each of the class actions explained above, although the scope of monitoring or the definition of the athletes included in a medical monitoring class may differ. In this section, we explain medical monitoring claims in general terms and the differing views concerning whether such claims are actionable as individual torts. We also briefly remind readers of general class certification principles. Then, we analyze some of the issues that may prevent class certification of medical monitoring classes in concussion-related litigation.

A. *Medical Monitoring Claims*

Traditionally, medical monitoring claims seek a monitoring program of tests and services to each class member.[195] "The purpose of medical monitoring compensation is to enable the plaintiff to obtain information about his or her future disease as early as possible. That information, in turn, enables the plaintiff to seek early treatment, so that the injuries will be minimized."[196] But, if disease is diagnosed, treatment is beyond the medical monitoring class.[197]

In the concussion-related litigation, the medical monitoring classes proposed include those athletes who do not have a present physical injury. When no physical injury is present, courts have wrestled with whether medical monitoring claims are actionable as independent torts, are a component of damages, or are not recognized under the law at all. The United States Supreme Court has rejected a medical monitoring class under the Federal Employers' Liability Act for railroad workers alleging infliction of emotional distress due to asbestos exposure.[198] In its analysis, the court noted that little consensus existed at the time among federal courts applying state law or among state courts regarding whether medical monitoring was actionable, absent present injury. There is still no widespread agreement in this respect or other aspects of "medical monitoring law."

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[195] *See*, *e.g.*, In re Fosamax Prods. Liab. Litig., 248 F.R.D 389, 395 (S.D.N.Y. 2008).

[196] Martha A. Churchill, *Toxic Torts: Proof of Medical Monitoring Damages for Exposure to Toxic Substances*, 25 Am. Jur. 3d Proof of Facts 313 § 8 (1994).

[197] *Id*. at § 11.

[198] Metro-N. Commuter R.R. Co. v. Buckley, 521 U.S. 424, 439-41 (1997) (holding that because employee could not demonstrate "physical impact" from asbestos exposure required by infliction of emotional distress claim, employee could not recover damages for extra medical tests required to detect cancer attributable to asbestos exposure).

For example, some states, such as Michigan, require a present injury to a person or property to establish a negligence claim; thus, such states do not recognize medical monitoring as a separate cause of action when physical injury is absent.[199] But, other states dispense with the requirement for present injury and recognize medical monitoring as a separate tort.[200] In many of the jurisdictions that accept medical monitoring as a separate cause of action, the courts have expressed belief that economic harm may occur to those exposed to toxic substances, despite the fact that the physical harm from such exposure may not manifest for a considerable amount of time.[201] Compensation for such future harm is compensable as future damages.[202]

Generally, courts in states recognizing medical monitoring without a present injury as an independent cause of action require a plaintiff to prove:

> (1) exposure greater than normal background levels; (2) to a proven hazardous substance; (3) caused by the defendant's negligence; (4) as a proximate result of the exposure, plaintiff has a significantly increased risk of contracting a serious latent disease; (5) a monitoring procedure exists that makes the early detection of the disease possible; (6) the prescribed monitoring regime is different from that normally recommended in the absence of the exposure; and (7) the prescribed monitoring regime is reasonably necessary according to contemporary scientific principles.[203]

But, the elements of a medical monitoring claim are not always uniformly stated or applied in jurisdictions recognizing the claim.[204] For example, some courts have articulated different standards for the magnitude of increase in risk a plaintiff must show to trigger medical monitoring relief.[205]

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[199] *See*, *e.g.*, Henry v. Dow Chem. Co., 701 N.W.2d 684, 690 (Mich. 2005) (finding "the principle that a plaintiff must demonstrate a present physical injury to person or property in addition to economic losses that result from that injury in order to recover under a negligence theory").

[200] *See*, *e.g.*, Bower v. Westinghouse Elec. Corp., 522 S.E.2d 424, 431-433 (W. Va. 1999) (stating that a plaintiff who does not allege a present physical injury may recover future medical monitoring costs).

[201] *Id*. at 429-30.

[202] *Id*.

[203] Redland Soccer Club v. Dep't of Army, 696 A.2d 137, 145-46 (Pa. 1997).

[204] Manual for Complex Litigation, Fed. Judicial Ctr. § 22.74 (4th ed. 2004).

[205] Compare Paoli R.R. Yard PCB Litig. v. Monsanto Co., 916 F.2d 829, 851 (3d Cir. 1990) (stating the standard for medical monitoring is whether to a degree of medical certainty medical monitoring is necessary to diagnose the warning signs of disease) and Ayers v. Twp. of Jackson, 525 A.2d 287, 312 (N.J. 1987) (articulating that plaintiffs seeking medical monitoring for cancer may only need to demonstrate a "slightly higher [chance] than the national average").

B. *Class Certification Principles*

Plaintiffs in concussion-related litigation must demonstrate that the class is ascertainable and satisfy the elements of class certification under Federal Rule of Civil Procedure 23. For a class to be certified, it must be determined that it exists.[206] Further, Rule 23 requires a plaintiff to establish numerosity, commonality, typicality, and adequate representation of the class and that the class fits within one of the applicable categories of Rule 23(b) – either an injunctive (Rule 23 b)(2)) or a damages class (Rule 23 (b)(3)).[207] Medical monitoring classes have been proposed as either injunctive or damages classes and have been rejected under either sub-category.[208]

In 2011, the United States Supreme Court closely examined the commonality element required for class certification.[209] The plaintiffs in *Wal-Mart* alleged that the discretion exercised by local supervisors concerning compensation and advancement decisions were discriminatory as to current and former female employees.[210] "Commonality requires the plaintiff to demonstrate that the class members 'have suffered the same injury.'"[211] Class members' claims must "depend on a common contention, [which] must be of such a nature that it is capable of classwide resolution."[212] The court explained that if, for example, the class alleged discrimination by the same supervisor and the outcome of that question resolves an issue central to the validity of class members' claims, then the class would satisfy the commonality element.[213] The *Dukes* court held that the plaintiffs' allegations did not satisfy the commonality element of Rule 23 because the basis for the claims were "literally millions of employment decisions."[214] "Without some glue holding the alleged reasons for all those decisions together, it will be impossible to say that the examination of all the class members' claims for relief will produce a common answer to the crucial question why was I disfavored."[215]

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[206] Oshana v. Coca-Cola Co., 472 F.3d 506, 513 (7th Cir. 2006).

[207] Fed. R. Civ. P. 23.

[208] *See* Sheila B. Scheurman, *NFL Concussion Litigation: A Critical Assessment of Class Certification*, 8 Fla. Int'l Univ. L. Rev. 81, 102-04 (2013).

[209] Wal-Mart Stores, Inc. v. Dukes, 564 U.S. 277, 131 S. Ct. 2541 (2011).

[210] *Id*. at 2546.

[211] *Id*. at 2551 (quoting General Telephone Co. of Southwest v. Falcon, 457 U.S. 147, 157 (1982)).

[212] *Id*. at 2551.

[213] *Id*.

[214] *Id*. at 2552.

[215] *Id*.

Certification of Rule 23(b)(2) classes for injunctive relief requires a plaintiff to demonstrate that final injunctive relief is appropriate for the whole class. In other words, where a single injunction or declaratory relief will provide relief to every class member, certification under this subcategory is appropriate.[216] An indivisible injunction under Rule 23(b)(2) benefits all members of a class at once.[217] Some courts require a plaintiff seeking certification of a class under this sub-category to demonstrate that the class' claims are cohesive, which focuses on a lack of individual issues.[218] A plaintiff must prove that the class' injuries must be "'group, as opposed to individual injuries.'"[219] Additionally, certification under Rule 23(b)(2) is inappropriate where certification would prevent a defendant from asserting plaintiff-specific defenses against the putative class members.[220]

To achieve class certification under Rule 23(b)(3), a plaintiff must convince the court that common questions of law or fact predominate over individual issues and that the class action device is a superior method to fairly and efficiently adjudicate the controversy.[221] These requirements are straightforward in theory. Under the predominance analysis, factual or legal differences may present individual issues. "If proof of the essential elements of the cause of action requires individual treatment, then class certification is unsuitable."[222] For example, if individual issues concerning causation or application of differing state's laws predominate over common questions of law and fact, a class should not be certified.

C. *Obstacles to Class Certification of Medical Monitoring Claims*

1. Commonality

Of the basic elements of Rule 23, commonality is likely the most problematic element for plaintiffs to establish. The plaintiffs allege a range of misconduct by the sports organization pertinent to each case, including that the organization ignored or concealed information from athletes about the dangers of sustaining multiple concussions or sub-concussive impacts, encouraged players to continue participating in the various sports immediately after head injury occurred, issued concussion protocols that were not followed, and other malfeasance. Read in a vacuum, such allegations appear to satisfy the commonality requirement. If those allegations were proven to be true, the answers would likely resolve an issue central to the class members' claims – namely causation.

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[216] Dukes, 131 S. Ct. at 2557.

[217] *Id*. at 2559.

[218] Schuerman, *supra* note 208, at 99-100.

[219] Id. (quoting Barnes v. Am. Tobacco Co., 161 F.3d 127, 143 n. 18 (3d Cir. 1998)).

[220] Dukes, 131 S. Ct. at 2561.

[221] Fed. R. Civ. P. 23(b)(3).

[222] In re Hydrogen Peroxide Antitrust Litig., 552 F.3d 305, 311 (3d Cir. 2008).

But the plaintiffs' allegations ignore the realities of athletes' knowledge of the effects of head injury independent of representations made by or concealment of information by the sports organizations regarding head injuries. The allegations in the various complaints ignore the individual athletes' decisions to continue playing, despite knowing they had suffered some level of head injury, including in some instances an understanding that they had suffered a concussion. The allegations ignore the decisions concerning an impact to an athlete's head made by numerous individuals employed by professional sports teams or NCAA member schools over the years during which an athlete participated in a particular sport. Applying the *Dukes* standard of commonality, plaintiffs in these cases may not be able to establish a common practice by each of the relevant sports organizations. Like in *Dukes,* it would seem that the defendant sports organizations have a colorable argument that the potentially millions of decisions made over the years – by the athletes themselves and personnel employed by a team or school – concerning how an athlete who sustained a head injury was treated during and after the contest is too varied to satisfy the commonality element. Particularly, for the NCAA, which is an organization lacking ultimate authority over its member teams or their personnel concerning decisions about treatment of head injuries, arguably there is no "glue" holding together the many varied decisions that were made relevant to each athlete.

2. Rule 23(b)(3): Individual Questions of Law and Fact Overwhelm Common Issues

For the concussion-related class actions seeking certification under Rule 23(b)(3), plaintiffs face many difficulties in establishing predominance of common questions of law and fact. First, putative class member athletes, which are situated in jurisdictions throughout the United States, could face a number of challenges concerning the application of the laws of different states. As outlined above, there are significant differences concerning whether a state recognizes a claim for medical monitoring. Even in those states that recognize the claim, differences exist regarding the elements of the claim and the standards by which the claim is established, such as the level of increased risk a plaintiff must sustain and the proof required to demonstrate that level has been met. Further, jurisdictions vary concerning affirmative defenses such as comparative negligence principles.

The NFL litigation attempts to circumvent this problem by alleging a medical monitoring claim only under New York law. In *Philips Petroleum Co. v. Shutts*, the Supreme Court found that every state has an interest in having its laws applied to the claims of residents of each state.[223] Plaintiffs in the NFL litigation and other putative class actions allege claims by residents of all fifty states. Thus, it is likely that the laws of all fifty states must be applied to the proposed class actions. Because of the differences among those laws pertaining to medical monitoring, a national class action may not be viable in any of the concussion-related class actions.

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[223] Phillips Petroleum Co. v. Shutts, 472 U.S. 797 (1985).

Second, individual issues such as health history, exposure during the relevant period, frequency of exposure during the relevant period, causation, and the proposed monitoring plan overwhelm any common issues. Most athletes, who have reached a level of proficiency sufficient to play college or professional sports, began participating in sports at a young age. Each professional athlete will need to prove that his condition was caused by head injuries sustained while playing professional sports rather than during college, high school, or in youth sports. Likewise, college athletes will be required to demonstrate that causation is related only to head injuries while playing at the college level.

Further, medical inquiries, particularly regarding brain injury, which as stated above is still a somewhat mysterious area of health care, are highly complex and individualized. Some people are genetically pre-disposed to experience concussions more easily or suffer the effects more severely. Additionally, as mentioned above, concussion alone is not necessarily enough to cause CTE. Development of CTE may also be affected by age, gender, race, genetic predisposition, and the position played in a sport. This fact also brings into question whether putative class members would rather have one-size-fits-all monitoring programs or consultation with their own physicians about the risks and benefits of diagnostic tests, considering their own health histories. As such, it is possible that the proposed monitoring plans raise individual issues that predominate over common issues. Finally, because players under-report symptoms of concussion or lie about whether they sustained a head injury, the defenses of comparative negligence and assumption of the risk are likely to pose significant individual issues as well. And it is worth noting that many players have done much more than merely "assumed the risk" of personal injury; they strive for a place on the team, whether be it for personal glory or financial gain, or both. Thus, for example, it will take individual inquiries to determine whether any one player would have foregone his career had the NFL or other sports organization provided more or different warnings about the risks of concussion.

3. Rule 23(b)(2): Individual Issues Prevent Cohesiveness

Many of the same individual issues outlined that prevent certification under Rule 23(b)(3) also would prohibit certification under Rule 23(b)(2). As Schuerman notes, a number of federal circuit courts have denied class certification of medical monitoring claims under this sub-category because cohesiveness of the class claims is missing.[224]

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[224] *See* Gates v. Rohm & Haas Co., 655 F.3d 255, 264 (3d Cir. 2011) (holding "medical monitoring classes may founder for lack of cohesion because causation and medical necessity often require individual proof*"); see also* In re St. Jude Med., Inc., 425 F. 3d 1116, 1122 (8th Cir. 2005) (stating "each plaintiff's need (or lack of need) for medical monitoring is highly individualized" depending on "the patient's medical history, the condition of the patient's heart valves at the time of implantation, the patient's risk factors for heart valve complications, the patient's general health, the patient's personal choice, and other factors").

Demonstrating cohesion in a national medical monitoring class action based on the risk of concussions and sub-concussive impacts will be difficult. The same individual issues mentioned above concerning lack of consensus as to the causes of CTE prevent cohesion. The individual issues related to pre-existing concussion history and damage that defeat Rule 23(b)(3) certification, also prevent Rule 23(b)(2) certification. Further, according to *Dukes*, the various defendant sports organizations must be allowed to present plaintiff-specific defenses. The *Dukes* court explained that a class under Rule 23(b)(2) must have an indivisible injury.[225] It is difficult to see how plaintiffs in the concussion-related class actions could establish indivisible injury when the symptoms of CTE are not related only to that disease, there are no diagnostic tools to detect CTE or biomarkers to demonstrate CTE in a living person, and no treatment options exist to reverse the effects in one's brain related to CTE. As such, a single monitoring plan would not appear to provide relief to every class member as required by Rule 23(b)(2).

The information outlined above demonstrates the lack of consensus regarding development of CTE and other neurocognitive effects that may be related to concussive and sub-concussive hits. Many mysteries remain unsolved concerning the causes, risk factors, symptoms, and diagnosis of the effects of TBIs. Numerous individual issues exist among the athletes alleged to be in each putative class. Exposure to concussive and sub-concussive hits throughout one's lifetime and while playing college or professional sports differs. A number of factors from one's genetic predisposition to choices an individual makes regarding health habits affects how the brain receives and copes with concussive and sub-concussive hits. Viewed through the lens of litigation, these factual differences appear to be significant to the analysis of whether a court should certify the medical monitoring classes proposed by the athletes involved in concussion-related litigation. Additionally, as described above, certification would violate several well-established class certification principles. Not every athlete is at risk for brain injuries or the effects that may result from brain injuries. Thus, certification of the proposed medical monitoring classes would appear to be premature and inappropriate.

VI.
Trial Considerations: Lessons From the Past and a Glimpse of the Future of Helmet Litigation

A. *Introduction*

Recent years have seen a series – but not necessarily a large number – of jury trials of product liability claims involving helmets and a variety of alleged brain injuries sustained during sports or recreational activities. According to one verdict and settlement database,

[225] Dukes, 131 S. Ct. at 2545.

the majority of products cases against helmet manufacturers that have been actually tried to juries in recent years have resulted in defense verdicts.[226]

The types of helmets at issue in these product cases include football, bicycle, bicycle motocross (BMX), and motorcycle helmets. The brain injuries at issue range from severe traumatic brain injury (STBI), such as acute subdural hematoma and diffuse axonal injury, to mild traumatic brain (MTBI), such as concussions and repetitive concussion-related trauma.

There are similarities and differences in the trial of both STBI and repetitive MTBI cases. Both types of cases are fact-intensive and fact-driven. However, the issues and evidence presented in both types of cases can be significantly different.

B. *Evidence and Issues in Helmet Cases Involving STBI*

1. Examples of STBI

Simply put, the successful defense at trial of a products case involving STBI turns on the ability to explain to the jury what a helmet can and cannot do. Severe traumatic brain injury can include large acute subdural hematoma (ASDH) or diffuse axonal injury (DAI), severe depressed skull fracture, contusions to the brain known as "coup" or "contrecoup" contusions, or a bridging vein tear in the brain. STBI cases usually involve a single violent impact to or motion of the head, as opposed to the repetitive and comparatively "mild" concussions experienced in MTBI cases. For trial in these cases, understanding the nature of the blow is paramount.

The forces that cause the types of skull fractures or bridging vein tears that, in turn, result in ASDH or DAI are generally characterized as either *translational* (or linear) or *rotational* (angular) blows or accelerations. Translational blows pass through the head's center of gravity – think of the phrase "to hit something head on." Rotational movements, on the other hand, apply rotational or angular forces to the head and brain – think of an uppercut in boxing that causes a fighter's head to whip backwards harshly. And it is important to remember that, while injury-causing forces tend to be characterized (particularly by litigants) as either translational or rotational, every blow to the head involves the application, to some degree, of both translational and rotational forces.

2. Types of Evidence in STBI Trials

Expert testimony, particularly from a neurologist or neurosurgeon, is critical. Analysis, and clear and effective explanation to the jury, of the CT scans, MRIs, or other medical imaging taken of the plaintiff in the hours and days following the subject injury sets the stage for the more specific causation evidence to come.

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[226] *See*, *e.g.*, Acuna v. Riddell, Inc., Los Angeles Cnty. Super. Ct., Mar. 2014 (football); Sohn v. Bell Sports, Inc., Los Angeles Cnty. Super. Ct., Aug. 2013 (bicycle); A.K.W. v. Riddell, Inc., S.D. Miss., Oct. 2012 (football); Eubanks v. KBC Corp., Los Angeles Cnty. Super. Ct., Oct. 2010 (BMX); Covell v. Bell Sports, Inc., E.D. Pa., July 2010 (bicycle); Suglia v. Lifestyle Custom Cycles, LLC, Riverside Cnty. Super. Ct., June 2009 (motorcycle); Jones v. Bell Sports, Inc., Palm Beach Cnty. Cir. Ct., Apr. 2005 (bicycle). Source: http://www.verdictsearch.com.

For example, a neurologist or neurosurgeon can both identify an ASDH secondary to a bridging vein tear shown on the plaintiff's CT or MRI and then explain to the jury how research tends to indicate that, more often than not, bridging vein tears are the result of rotational forces.[227] This is significant in helmet cases because the consensus among experts – on both the plaintiffs' and defense side – is that while helmets may be expected to mitigate, to some degree, translational forces, there is little if anything that helmets can do to mitigate rotational movement of the head.

Equally important is testimony by experts in biomechanics, typically Ph.D.-level engineers who specialize in injury kinematics. The biomechanist essentially functions the same way an accident reconstructionist does in a traffic collision case – inspecting both the helmet and the site of the injury, identifying any physical evidence of damage (including to the helmet, to the ground, to any vehicles involved, or to the clothing the plaintiff was wearing at the time of the injury), connecting the documented injuries with cause of injury, and calculating the movement of the head and body, the change in velocity (Δv), and the vectors and forces applied to the head.

Even the weather comes into play, and meteorologists have been retained as testifying experts in helmet cases. Ambient temperature on the playing field or on the roadway may be used, particularly by plaintiff's counsel, to posit that the impact energy attenuating properties of the helmet padding or liner were somehow compromised.

In a case involving a sports injury – particularly one sustained in a football or hockey game – film or video of the injury is often available. The video can provide the basis for a computer simulation or photogrammetric analysis of the moment the injury occurred, noting minute details such as a player's foot position and lean angle before, during and after a collision. These types of computer simulations are based on measurements and other actual data obtained from the evidence. As such, they are treated as substantive evidence admissible at trial and not merely illustrative or demonstrative evidence.[228]

One of the most effective forms of evidence in defending helmet cases is a three-dimensional print of the plaintiff's skull, showing the precise location of a skull fracture. The print is based directly and completely on a CT scan or MRI and can be admitted as substantive, as opposed to merely illustrative, evidence. The 3-D print gives the jurors tangible evidence of where the impact likely occurred. In many cases of skull fracture, medical experts can opine that the blow occurred at the location of the fracture. This is particularly valuable in design defect cases where the plaintiff argues that the helmet should have provided greater "coverage." A lack-of-coverage argument can be effectively neutralized if the 3-D print of the skull shows the fracture (and likely the impact) occurred underneath an area of the head covered by the helmet.

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[227] *See* Alexander G. Reeves & Rand S. Swenson, Disorders of the Nervous System: A Primer (2004), https://www.dartmouth.edu/~dons/part_3/chapter_29.html.

[228] *See*, *e.g.*, People v. Duenas, 281 P.3d 887, 887 (Cal. 2012).

3. Issues in STBI Cases: Telling the "Testing Story"

Particularly in design defect trials where the plaintiff has sustained STBI, much of the trial will focus on the applicable helmet standard. A variety of government agencies and non-governmental organizations offer performance standards for helmets. The National Operating Committee on Standards for Athletic Equipment (NOCSAE) provides performance standards, along with detailed testing protocols, for both football and ice hockey helmets. The U.S. government provides similar standards for motorcycle and bicycle helmets: Department of Transportation Federal Motor Vehicle Safety Standard No. 218 (49 C.F.R. § 571.218) applies to motorcycle helmets, while Consumer Product Safety Commission 1203 (16 C.F.R. pt. 1203) governs bicycle helmets. Private organizations, such as the Snell Memorial Foundation, provide their own performance standards for motorcycle and bicycle helmets.

Protective helmets for sports or recreational activities that are sold in the United States are typically certified by independent laboratories for compliance with the applicable standards. Many motorcycle and bicycle helmets are also certified to comply with Snell standards, in addition to the DOT and CPSC requirements. Certification requires passing a testing protocol set out in the standard, typically involving some form of impact test and a retention system test.

In most cases, particularly those involving established helmet manufacturers with a long history of helmet design, manufacturers have a wealth of evidence establishing regular, intensive testing of helmets both in the design and production phases. Company witnesses and engineers can often provide effective explanations of the "testing story" for each helmet. This often neutralizes the more selective testing evidence that a plaintiff may offer at trial.

For example, a plaintiff may focus exclusively on a single or small handful of non-conforming test results (i.e., test failures) and will present the selective results to the jury without the necessary context. But a test failure noted early in the design or research and development process is far less probative, in a design defect case, than a test failure at the certification stage or after a helmet has been put on the market. Prototype helmets, after all, are usually intentionally tested to failure. In such cases, having the client tell the full "testing story" – what types of prototypes were created, what isolated test failures mean, how the final design came to be and was certified – can establish a commitment to and record of safety in helmet design.

Moreover, a helmet's overall design and testing story must be told to show that the helmet optimized the protection it could provide under the existing limitations provided by the standards. Helmet consumers have a wide variety of preferences in terms of helmet weight, ventilation, removability, visibility, aesthetics, and other features. A particular helmet may address one type of preference over another depending on the consumer – for example, a cyclist may prefer a lighter, more ventilated helmet than a casual rider – but company witnesses can and must establish that, regardless of the interplay of various helmet design features, the helmet meets or exceeds applicable standards in all respects.

Warnings and instructions are also a key part of the design and testing story. Here again, the well-prepared company witness can be effective in laying out the proper sizing, fit, adjustment, and use of a helmet. In helmet ejection and coverage cases, especially those involving bicycle and motorcycle helmets, the plaintiff's failure to follow all warnings and instructions on how to select, adjust, fasten, and wear the helmet (and what, if anything, to wear under the helmet) can be particularly important for the defense. And, to loop back to the discussion of video and photographic evidence above, images not only of the accident site but also of the plaintiff wearing the helmet on prior occasions can be critical to establishing whether he or she was following the instructions or warnings at the time of the incident.

4. What a Helmet Can and Cannot Do

All of the above factors – the physical evidence, the medical testimony, the reconstruction, and the testing and design story – must be carefully connected to show that the injury was not preventable by the existing helmet design. This can be effectively communicated to the jury by drawing a distinction between what a helmet can and cannot reasonably be expected to do. Helmets can, within the applicable standards, provide an optimal level of impact protection while balancing the factors that are important to different types of helmet consumers – weight, ventilation, visibility, aesthetics, etc. But perhaps most importantly in design defect cases involving STBI, helmets cannot provide protection for certain catastrophic injuries, such those involving rotational acceleration.

C. *Evidence and Issues in Helmet Cases Involving MTBI and Repetitive Injury*

In contrast to STBI cases, MTBI cases involve different evidence and issues. MTBI cases involve claims of a helmet design that failed to protect from the effects of years of repetitive mild head trauma, such as concussion. In MTBI trials, there will not be one accident to reconstruct, but rather a lifetime of football, hockey, or other sports injuries as well as lifestyle, habits, health, potential drug or alcohol abuse, and family history to be explored.

A major difference between the two types of cases is product identification. To use the example of football, the injured plaintiff may have worn helmets by many different manufacturers through decades of youth, high school, collegiate, and professional football. For sports league defendants – such as the NCAA, NFL, and NHL – it will be important to determine whether the alleged injuries occurred either entirely during, or in part before or after, the player's time in the league. In short, investigating whether the player suffered the debilitating condition during the time the plaintiff alleges the league failed to implement an effective medical monitoring program or failed to advise players of a risk will be an important part of the case.

Moreover, the performance of any one helmet or impact incident will not likely be the issue in the MTBI case. Thus, there will not be physical evidence and medical documentation to connect a condition to a specific event, but rather a reliance on assumptions and competing scientific opinion to connect the player's condition to the exposure to head contact in the sport or to the time the player spent in the league. Similarly, claims for medical monitoring are

more likely to be seen in the MTBI rather than the STBI case.[229] In the latter, the plaintiff's claimed damages are typically identifiable and attributable to a single accident or hit.

The limitation that no helmet can prevent concussions or all brain injuries is found on almost all helmet warnings. Players frequently sign waivers acknowledging the risk of injury, but the specifics of what they appreciated and when they were advised will be important facts, as is the threshold legal question of whether a waiver between the player and the league inures to the benefit of a helmet manufacturer.

One emerging issue is the role of a plaintiff's history, if any, of drug or alcohol abuse in causing the disease at issue. For example, scientists are currently researching the role of abnormal proteins, or tau proteins, in diseases such as CTE, which may be caused by repeated concussion.[230] There have also been discussions regarding a connection, if any, between anabolic steroid use and tau proteins, although a causal link between steroids and diseases such as Alzheimer's or CTE has not been established.[231] The upshot is that, unlike in STBI cases, in MTBI cases the plaintiff's history of drug or alcohol abuse or steroid abuse may be relevant to the issue of causation.

In sum, helmet manufacturer defendants appear so far to have a strong track record in defending at trial design defect claims in single-incident cases of severe traumatic brain injury. As the study of the effects of repetitive MTBI or concussions advances, the future may see an increasing number of claims for repetitive MTBI and medical monitoring. But both types of cases require diligent pursuit of the facts and early retention of qualified experts.

VII.
Conclusion

Concussion-related injury litigation by current and former professional, collegiate and even high school athletes, as well as the related insurance coverage litigation, is far from over. Although many of the currently pending medical monitoring lawsuits may be resolved in class action settlements, in certain instances, there is still a significant likelihood of individual concussion-related injury suits for damages. Past head injury litigation provides some insight into what types of issues will be faced in those cases. Meanwhile, the medical science that is at the heart of the concussion-related injury litigation continues to be the subject of debate amongst medical professionals. One thing is certain: football and other contact sports in America have changed, as concussive and sub-concussive impacts – and their related injuries – are now at the forefront for players, coaches, governing bodies and, ultimately, those in the legal and medical professions.

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[229] Discussed in detail in Section IV., C., *supra*.

[230] *See* Section IV. B., *supra*.

[231] *See* Mark Roth, "Scientists hunt for ways to untangle damage of chronic traumatic encephalopathy," Pittsburgh Post-Gazette, May 13, 2013, available at http://www.post-gazette.com/news/health/2013/05/13/Scientists-hunt-for-ways-to-untangle-damage-of-chronic-traumatic-encephalopathy/stories/201305130194 (last visited June 20, 2015).