

LEGAL AND ETHICAL ASPECTS OF SPORTS-RELATED CONCUSSIONS:

THE MERRIL HOGE STORY

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I. INTRODUCTION

In recent years, sports-related concussions have ignited a volatile public policy debate in American society.¹ There has not only been a flurry of journalistic attention by sportswriters,² but scientific research has also legitimized the concern.³ While concussions have long been a

1. See Michael W. Collins et al., *Current Issues in Managing Sports-Related Concussions*, 282 JAMA 24, available at <http://jama.ama-assn.org/issues/v282n24/rfull/jc190029.html> (last visited Dec. 29, 1999) (contending that the determination of when an athlete may return to competition after sustaining a concussion is a "major" public health issue); Edward M. Wojtys et al., *Concussion in Sports*, 27 AM. J. SPORTS. MED. 676, 681 (1999) (describing concussion management as one of the most challenging problems faced by medical personnel); *Outside the Lines: Concussions: What Doctors and Players Know and Don't Know* (ESPN television broadcast, Oct. 27, 2000), at <http://college.espn.go.com/tvlistings/show26transcript.html> (last visited Sept. 9, 2001) (presenting a roundtable discussion regarding the risks and ethical questions surrounding sport-related concussions and high-profile athletes).

2. See David Wharton, *Damage Control: A New Tact is being Taken to Prevent Head-Impact Injuries*, LOS ANGELES TIMES, Sept. 7, 1997, C14, available at 1997 WL 13977527; Kevin Williams, *Quite a Blow: 300,000 Concussions Diagnosed Each Year*, DENVER ROCKY MOUNTAIN NEWS, June 27, 2000, at 3D, available at 2000 WL 6599791.

3. The amount of medical literature on concussion and brain injuries is staggering. For example, a MEDLINE search for the years 1966-1996 combined the phrases "brain concussion" with "athletic injuries," retrieving 10,980 articles. See Report of the Quality Standards Subcommittee, *Practice Parameter: The management of concussion in sports (summary statement)*, NEUROLOGY, Mar. 1997, at 582; William H. Meeuwisse, et al., *The Distribution of Injuries in Men's Canada West University Football: A 5-Year Analysis*, 28 AM. J. SPORTS MED. 4 (2000), available at 2000 WL 13220041 (concluding that athletes sustaining concussions suffer from immediate impairment of neural function and may be subject to second-impact syndrome, a condition that may lead to death or disability); M. McCrea, *Standardized Assessment of Concussion in Football Players*, NEUROLOGY, Mar. 1997, at 586 (reporting the results of a study in which concussed high school football players scored significantly lower on a sideline examination than a non-concussed control group).

problem in sports⁴ as well as society,⁵ in recent years a number of the most renowned and highest-paid professional athletes have been forced into missing large segments of their seasons, and oftentimes into an early retirement from competition.⁶ Concussions have expedited the retirement of such National Football League (“NFL”) legends as San Francisco 49er quarterback Steve Young, Dallas Cowboy Troy Aikman, and New York Jets wide receiver Al Toon.⁷

Over the past few decades, the rate of injury in sports has dramatically increased.⁸ The reasons for this increase include not only the prevalence of artificial fields,⁹ but also the callousness by which team owners and coaches – as well as society as a whole – treat injured athletes.¹⁰ A long-standing American sports tradition is for an athlete to play hurt. One of the most poignant sports images of the 20th century was New York Knicks center Willis Reed, barely able to stand, hobbling onto a basketball court

4. Concussion-related injuries affect all levels of athletes, from grade school to college to professional. In 1996, Eric Hoggatt, a running back at a high school in Los Angeles, died in his sleep after enduring more than a dozen tackles during a game. Hoggatt had pulled himself out of the game in the fourth quarter after complaining of numbness and dizziness. School officials placed him on the team bus after the game for the trip home. The Los Angeles County coroner’s office determined that Hoggatt’s death was caused by a build-up of blood in his brain, the result of repeated blows. See Wharton, *supra* note 2.

5. In 1904, then-President Theodore Roosevelt, responding to a national fury over 19 athletes killed or paralyzed from football injuries, created the National Collegiate Athletic Association (NCAA) as a rules governing body for collegiate sports. Despite the NCAA’s creation, fatalities at all levels of football peaked in 1964, with 30 deaths, the majority of which resulted from head and neck injuries. See James P. Kelly & Jay H. Rosenberg, *Diagnosis and Management of Concussion in Sports*, NEUROLOGY, Mar. 1997, at 575.

6. On a recent Sunday, four professional football quarterbacks were knocked out of games after sustaining concussions. See Associated Press, *Bucs Knock Chandler from Game*, Nov. 5, 2000, available at <http://espn.go.com/nfl/news/2000/1105/859489.html> (last visited Sept. 20, 2001). From 1988 to 1993, the NFL reported 445 concussions, an average of four concussions per week. See *Concussions in Football: Curning the Inevitable*. Available at <http://hcs.harvard.edu/~hcr/hcr/winter97/concuss.html> (last visited Sept. 9, 2001).

7. Alan Truex, *Athletes Used to Shrug Off Concussions, Sometimes Without Even Knowing It. Now, With Several High-Profile Cases of Concussions Leading to Early Retirement, Early Onset of Senility, and in a Few Cases, Even Death, There is a New Awareness about their Cause, Long-Term Effect and Treatment*, HOUSTON CHRONICLE, Dec. 12, 1999, available at 1999 WL 24269897.

8. ANN E. WEISS, MONEY GAMES 77 (1993) (arguing that despite the fact that football players wear over 30 pounds of protective padding, over 100 percent of NFL players in the 1980s missed one game due to injury. “[N]ot every NFL player is injured at least once each season, but those who are not injured are more than offset by those who are injured several times.”).

9. *Id.* at 79 (citing a 1974 study concluding that natural grass is, in all tested aspects, safer and superior to artificial turf, and that team owners prefer artificial turf because it is easier and cheaper to maintain and provides a steady revenue stream through leasing of the ground space to commercial turf providers).

10. See *id.*

to lead his team to the 1970 NBA championship.¹¹

The Brain Injury Association estimates that 300,000 concussions are diagnosed in the United States each year, and over one million worldwide.¹² Motor vehicle accidents account for an estimated two-thirds of all concussions, while sports injuries account for ten percent.¹³ The *American Journal of Public Health* reported that in 1988 there were 250,000 football-related concussions in the United States.¹⁴ A recent University of North Carolina study estimated that over 60,000 high school athletes suffer concussions each year,¹⁵ and that in 1999 five high school football players died from head injuries that involved severe concussions.¹⁶ Finally, the NFL commissioner's office has estimated that at least one concussion occurs in every 3.5 NFL games.¹⁷

With a heightened societal awareness of the severity of sports-related concussions, one would expect to find a parallel rise in concussion-related litigation. While concussion cases exist in the contexts of product liability, insurance coverage, and traditional medical negligence, until very recently there has been a dearth of case law involving a plaintiff-athlete suing his team or organization, team physician, or athletic trainer. Traditionally, plaintiffs' attorneys have been scared off by inconsistent treatment models and uncertain scientific definitions for concussions. In the very few concussion cases they have thus far agreed to represent, plaintiff attorneys usually opt for early, pre-trial settlements.

However, in August 2000, Merril Hoge, a retired NFL running back, successfully sued the physician employed by the Chicago Bears, his

11. See *NBA History*, at http://global.nba.com/history/reed_bio.html (last visited Nov. 10, 2001).

12. See generally <http://www.biausa.org/sportsfactsheet0401.pdf> (n.d.) (listing facts and figures regarding sports-related concussions and traumatic brain injury). See also Williams, *supra* note 2.

13. *Id.* See also WILLIAM J. WINSLADE, CONFRONTING TRAUMATIC BRAIN INJURY: DEVASTATION, HOPE AND HEALING 192 (1998) (arguing that sports and recreation accidents account for ten percent of all brain trauma, with soccer and football accounting for the majority).

14. RC Cantu, *When to Return to Contact Sports after a Cerebral Concussion*, SPORTS MEDICINE DIGEST (1988), at 1-2. See also JP Albright, et al., *Head and Neck Injuries in College Football: An Eight-Year Analysis*, 13 AM. J. SPORTS MED. 147-152 (1985); RH Alley, *Head and Neck Injuries in High School Football*, 188 JAMA 118-22 (1964).

15. Kevin M. Guskiewicz et al., *Epidemiology of Concussion in Collegiate and High School Football Players*, 28 AM. J. SPORTS MED. 643-50 (2000). See also Brenden Sager, *New Concussion Test: Baseline Test Will Provide Basis to Measure Injury in Young Players*, PITTSBURGH POST-GAZETTE, Feb. 29, 2000, at E1, available at 2000 WL 10883457.

16. Guskiewicz, *supra* note 15, at 645. See also *Head Injuries Cause 5 of 17 Prep Deaths*, THE NEW ORLEANS TIMES-PICAYUNE, Aug. 15, 2000, at E6, available at 2000 WL 21278350.

17. David E. Thigpen, *Chin Music: Doctors warn that relentless blows to the head may be giving football players lasting brain damage*, TIME, Dec. 12, 1994, at 24.

former team.¹⁸ Hoge alleged that the Bears' physician negligently failed to warn him about the dangers and risks of sustaining another and more severe concussion if he returned to play while suffering from post-concussion symptoms.¹⁹ Remarkably, Hoge's case is a trial of first impression, the first court battle centering on a physician's duty to warn an athlete about future concussion risks, and the degree to which concussion symptoms are common knowledge.²⁰

According to Robert Fogel, Hoge's attorney:

[This] may be the one of the first [lawsuits] of its kind. . . . It is . . . an extremely important case because the message should go out that the brain is the most important part of the body, and it should be treated that way by doctors. [Physicians] have a responsibility to the players . . . to re-evaluate them, re-examine them before they go out to play, tell them about the signs and symptoms, and warn them about the risk of permanent brain damage or even death from second-impact syndrome.²¹

Fogel argued that the jury's decision was an implicit rejection of the existing standards for treatment of sports-related concussions: "[The jury] sent a message to coaches at all levels . . . [that the] culture of medicine should supercede the culture of football. It is more important to treat an athlete properly than as a piece of property."²²

The legally relevant inquiry here is how Merrill Hoge's victory will affect future litigation. Will it enable athletes stricken with concussions to enjoy easier access to the courts? Will it unleash a deluge of litigation, sparked by a newly developing breed of brain injury attorney? Will professional sports franchises – as well as little league organizations, high schools, and colleges – be able to afford the cost of insuring their injured athletes? Or, will the stormy fear about sports-related concussions blow over, an over-hyped by-product of a sensational media that has misrepresented a mostly manageable and temporary condition into a national health epidemic?

Focusing primarily on professional football, this paper argues that

18. Plaintiff's First Amended Complaint at 4, *Hoge v. Munsell*, No. 98 L 0996 (Ill. Lake County Ct. July 5, 2000). See also Rummana Hussain, *Hoge Wins Lawsuit Against Doctor*, CHICAGO TRIBUNE, July 22, 2000, at 5, available at 2000 WL 3692030 (reporting that a county court in Chicago, Illinois, awarded Merrill Hoge a \$1.5 million judgment).

19. Plaintiff's First Amended Complaint, *supra* note 18, at 4.

20. Fred Mitchell, *Hoge's Suit vs. Ex-Bears Doctor May Set Precedent*, CHICAGO TRIBUNE, July 18, 2000, at 5, available at 2000 WL 3686638.

21. *Id.*

22. Telephone Interview with Robert Fogel, Partner, Hilfman, Fogel, Martin & Barr, P.C., (Dec. 4, 2001). See also *Former Steeler, Bear Hoge Wins Lawsuit Against Doctor*, THE FLORIDA TIMES-UNION, July 23, 2000, at C10, available at 2000 WL 23369970.

society should brace itself for a wave of concussion-related litigation. Despite their fame and million dollar salaries, future athletes may not be willing to sacrifice their brains for a trip to the Super Bowl. Armed with increased concussion awareness, athletes will overcome a culture of sports “machismo,” and realize that unlike a bone or muscle, the brain may not be rehabilitated. In addition, team owners must hold sacred the safety of their players. Team doctors must overcome a culture of interest conflicts that compromises their medical ethics and treatment relationships. This paper also advocates the development of a meaningful set of guidelines for the management of sports-related concussions – one that is admissible in a court of law, useful in real life, and agreed upon as the current and accepted standard of care.

Part II of this paper defines the science of concussions and reports recent studies. Part III discusses Merrill Hoge’s lawsuit against the Chicago Bears, and compares other concussion-related litigation. Part IV addresses how sports-related concussions threaten the traditional ethics, values, and driving forces inherent in postmodern American society. It also questions why profit-driven team owners, an uncaring sports industry, and conflicted team doctors have failed to accept and incorporate recent advancements in the science of concussions. Part V explores a range of relevant guidelines for concussion management, concluding that these fail to safeguard the health of athletes and to limit future litigation. Finally, Part VI proposes solutions to the problems of concussions in sports, and predicts the future of sports-related concussion litigation.

II. CONCUSSION: DEFINITIONS, STUDIES, SPORTS, AND SOCIETY

There is no single, precise definition of “concussion.”²³ A “Concussion Workshop,” sponsored by the American Orthopedic Society for Sports Medicine (“AOSSM”), recently defined concussion as “any alteration in cerebral function caused by a direct or indirect force transmitted to the head.”²⁴ The American Academy of Neurology (“AAN”) defines concussion as “a trauma-induced alteration in mental status that may or may not involve a loss of consciousness.”²⁵ The Institute for Preventative Sports Medicine in Ann Arbor, Michigan, offers

23. Kelly, *supra* note 5, at 575-76 (discussing the scientific disagreement about the terminology of concussion and mild traumatic brain injury).

24. Wojtys, *supra* note 1, at 676-77.

25. Report of the Quality Standards Subcommittee, *supra* note 3, at 582. *See also* Kelly, *supra* note 5, at 577 (stating that the cardinal features of concussion include the disturbance of vigilance with heightened distractibility, inability to maintain a coherent stream of thought, and incapability to carry out a sequence of goal-directed movements).

a more folksy definition:

Put a piece of saran wrap over a bowl of jello. . . . That jello is your brain. Now shake the bowl pretty vigorously. You see the bits of jello stuck to the sides of the bowl and the saran wrap? That's the bruising that occurs, the tearing of the nerve tissue. That's how folks get injured.²⁶

Brain injury researchers do agree on one mantra: There is no such thing as a minor concussion.²⁷ According to renowned neurologist Dr. Robert C. Cantu,

The brain and spinal cord are incapable of regeneration. Although many parts of the body can now be replaced with organ transplantation or artificial hardware, this is not possible for the brain. Brain injuries are one of the most common catastrophic athletic injuries and the leading cause of athletic death.²⁸

Concussions generally arise from a direct blow to the head (coup injury) or a "whiplash-type" injury (contra-coup injury).²⁹ Concussion symptoms include headache, dizziness, vertigo, lack of awareness, nausea, vomiting, mental dysfunction, sleep deprivation, and tinnitus.³⁰ Aside from early recognition of post-concussive symptoms, at present there is no standard curative medical treatment for concussion.³¹

To the naked eye, concussions do not appear to cause serious structural damage to the brain.³² Athletes who suffer mild concussions often rise up and shake off their injury – returning to athletic competition as if nothing has happened. Physicians are unable to attribute a specific number of hits a brain may take before permanent damage ensues, and are unable to agree upon a precise timetable for the safe return to athletic competition. A number of scientific studies are currently underway, attempting to link concussions and sports, to further identify long-term health effects, and to

26. Wharton, *supra* note 2.

27. Press Release, American Academy of Neurology, Proper Management of Sports-Related Concussion Can Prevent Years of Chronic Headaches, Confusion, and Memory Loss (Mar. 12, 1997) [hereinafter AAN Press Release] (on file with author) (quoting Dr. James Kelly, AAN member, as stating that "repeated concussions can cause not only permanent damage to the brain, but even death.").

28. Robert C. Cantu, *Return to Play Guidelines After a Head Injury*, CLINICS IN SPORTS MEDICINE, Jan. 1998, at 45.

29. Norra Macready, *Guidelines Issued for Sports-related Concussion*, THE LANCET, Mar. 22, 1997, at 857. See also Cantu, *supra* note 28, at 46 (explaining the scientific intricacies of concussion, and that an athlete's head can sustain greater forces when the neck muscles are tensed as opposed to relaxed).

30. Macready, *supra* note 29.

31. Wojtys, *supra* note 1, at 681.

32. Report of the Quality Standards Subcommittee, *supra* note 3, at 582.

improve concussion management.³³ In Wisconsin, researchers use magnetic resonance imaging (MRI) on severe head injuries to determine the long-term effects of concussions.³⁴ “What we’re looking at is the effects of concussions on cognitive skills,” explained Dr. Michael McCrea, a researcher in the study. “And then, we’re trying to track recovery. That begs the question, when is it safe to return to play?”³⁵

Sustaining an isolated concussion will not generally cause death.³⁶ However, suffering repeated concussions raises the danger of second-impact syndrome (“SIS”), a potentially fatal condition that occurs when a player returns to competition before the symptoms of a first concussion resolve.³⁷ After sustaining a concussion, brain cells that are not irreversibly destroyed remain alive but in an extremely vulnerable state.³⁸ A second blow to the head, no matter how trivial, while the brain is still recovering from the first concussion, may lead to a fatal herniation of the brain.³⁹

The general scientific consensus regarding SIS is that a premature return to sports may result in death or permanent disability.⁴⁰ However,

33. Bryan L. Riemann & Kevin M. Guskiewicz, *Effects of Mild Head Injury on Postural Stability as Measured Through Clinical Balance Testing*, JOURNAL OF ATHLETIC TRAINING (2000), available at 2000 WL 19537277 (concluding that the athletes who have sustained concussions evidence decreased postural stability); Peter Gott, *Abstain from Sports after Head Injury*, THE OTTAWA SUN, July 23, 2000, at S9, available at 2000 WL 23083948 (citing a Canadian study that found that minor head injuries may lead to permanent problems, and that receiving more than three concussions results in almost certain brain damage).

34. Amy Hetzner, *Long-Term Impact of Concussions in High School Sports Examined*, THE MILWAUKEE JOURNAL SENTINEL, Aug. 28, 2000, at 15A (detailing a study that will involve twelve high schools and will attempt to track the physiological effects of concussion on the brain); *Researchers Look at High School Sport Concussions*, ASSOCIATED PRESS NEWSWIREs, Aug. 28, 2000.

35. Hetzner, *supra* note 34.

36. Wojtys, *supra* note 1, at 680.

37. Kelly, *supra* note 5, at 577 (citing RL Saunders & RE Harbaugh, *The Second Impact in Catastrophic Contact-Sports Head Trauma*, JAMA (1984), at 538-39) (describing second-impact syndrome as when an athlete suffers “cerebral auto-regulation, or a loss of cerebral auto-regulation, leading to malignant brain swelling and marked increase in intracranial pressure.”). See also Cantu, *supra* note 28, at 37 (detailing the pathophysiology of second-impact syndrome and providing real-life case histories as illustrations).

38. Wojtys, *supra* note 1, at 677 (asserting that the concept of injury-induced vulnerability is a major concern in the management of patients with head injuries).

39. Kimberly G. Harmon, *Assessment and Management of Concussion in Sports*, AMERICAN FAMILY PHYSICIAN, Sept. 1, 1999, at 887.

40. Kelly, *supra* note 5, at 578. An example of the worst case SIS scenario recently occurred at Monta Vista High School in Colorado, after football player Adrian Gutierrez suffered a serious concussion. *Concussions in Football: Curbing the Inevitable*, available at <http://hcs.harvard.edu/~hsr/hr/winter97/concuss.html> (last visited Nov. 11, 2000). During a game two weeks later, Gutierrez, not fully recovered, suffered a second, milder concussion, then collapsed on the field. *Id.* Five days later, he died of SIS. *Id.*

since 1984, there have been only 26 reported deaths from SIS in the United States.⁴¹ Perhaps most problematic about SIS is that it is not readily ascertainable by sideline personnel. It is only identifiable through MRI or CT scans of the brain,⁴² but oftentimes even these high-tech diagnostic studies, while able to reveal more serious brain injury, may not detect the subtle pathology associated with concussion.⁴³

Concussions are not the only medical hazards that arise from repeated blows to the head. Acute traumatic brain injury represents “the neurologic consequence of concussive and subconcussive blows to the head.”⁴⁴ Chronic traumatic brain injury begins with “mild subclinical dysfunction detected only through neuropsychological investigation and evolves into slowed motor performance, tremors, cognitive deficits, and personality and psychological changes.”⁴⁵ Finally, athletes may also develop “post-concussion syndrome,” which is characterized by fatigue, headaches, disequilibrium, and concentration difficulties.⁴⁶

III. SPORTS-RELATED CONCUSSIONS: OPENING THE FLOODGATES TO POTENTIAL LITIGATION?

A. *The Merrill Hoge Story: The \$1.5 Million Concussion*

For eight seasons, Merrill Hoge played running back in the National Football League.⁴⁷ As a Pittsburgh Steeler, he stood six-foot-two inches and weighed 230 pounds.⁴⁸ Not blessed with extraordinary athletic ability, he was what many sports commentators refer to as a “team player.” His

41. Sager, *supra* note 15.

42. *Id.*

43. Collins, *supra* note 1.

44. Erik J. T. Matser, et al., *Acute Traumatic Brain Injury in Amateur Boxing*, THE PHYSICIAN AND SPORTSMEDICINE, Jan. 1, 2000, available at 2000 WL 11966538 (concluding that participation in amateur boxing may diminish neurocognitive functioning despite the use of headgear).

45. *Id.* (comparing chronic traumatic brain injury to chronic traumatic boxer’s encephalopathy, or, in common parlance, “punch drunk syndrome.”).

46. *Id.* See also Harmon, *supra* note 39, at 887 (reporting that even when subsequent concussions are separated by months or years, cumulative damage may occur); James B. Tucker and James T. Marron, *The Qualification/Disqualification Process in Athletics*, AMERICAN FAMILY PHYSICIAN, Feb. 1984, at 149-54 (stating that there is a general consensus that three or more second- or third-degree concussions should disqualify a person from contact sports).

47. Trisha Gura & Fred Mitchell, *Hoge, Bears Await Report by Specialist*, CHICAGO TRIBUNE, Oct. 12, 1994, at 1. Merrill Hoge’s trial was conducted before a county court outside of Chicago, Illinois. For purposes of this paper, because there is not an appellate record in the case, much of Hoge’s story is reconstructed through anecdotal evidence – including newspaper, magazine, and Internet accounts – and trial pleadings.

48. *Id.*

sacrificial but punishing lead blocks were critical to the success and glory of his more renowned teammates. He also led the Steelers in rushing yardage in three seasons.⁴⁹ In NFL circles, Hoge was known as a “gamer,” or an extremely durable player. He participated in a string of 112 consecutive games, a remarkable streak that garnered Hoge the NFL’s Iron Man award.⁵⁰ Hoge was also extremely well spoken, a media and fan favorite.

In March 1994, after helping the Steelers advance to the Super Bowl, Hoge tested the free agent market, signing a \$2.4 million contract with the Chicago Bears.⁵¹ Hoge initially impressed his new team. Recalled Dave Wannstedt, then coach of the Bears: “We brought him in . . . and before he got into the money, or before he got into how hard we were going to practice . . . he wanted to know how he was going to be used as a football player. That impressed me right off the bat.”⁵²

Hoge’s honeymoon with the Bears was short-lived. During a preseason game against the Kansas City Chiefs, on August 22, 1994, Hoge suffered a concussion that he described as an “earthquake. . . . I got hit from at least three directions. I had a hard time getting up, but I stayed in for two more plays and walked to the sideline. I played the next week, even though I had trouble remembering plays.”⁵³ Perhaps because of his reputation for playing through pain, or because he wanted to impress the Bears management and coaching staff, Hoge returned to the Bears starting lineup for the regular season opener, after sitting out for just one pre-season contest.⁵⁴

Six weeks later, during a contest against the Buffalo Bills, Hoge sustained a second concussion, the result of being struck in the head while executing a block.⁵⁵ Ten days after receiving the second concussion, Hoge still had headaches and was “dizzy, lethargic, constantly sleepy, and [his] memory was shot. [He] couldn’t remember what [he] was talking about

49. Jeff Legwold, *Concussions No Laughing Matter in NFL Today: Player Livelihood on the Line after Vicious Collisions*, THE TENNESSEAN, Oct. 24, 1999, at D1.

50. Gura, *supra* note 47, at 1.

51. *Id.*

52. *Id.*

53. Alan Truex, *Special Report: Concussions in Sports / Six Cases in Point*, HOUSTON CHRONICLE, Dec. 12, 1999, at 26, available at 1999 WL 24269821.

54. Tony Gordon, *Bears Doctor Failed to Provide Information*, CHICAGO DAILY HERALD, July 20, 2000, at 5, available at 2000 WL 24353020.

55. *Id.* Other reports estimated that Hoge had actually suffered four concussions in five weeks and a total of 12 concussions over 19 years of organized football. See *Former Steeler*, *supra* note 22. In addition, Hoge’s complaint alleged that during the four games between his two concussions with the Bears, Hoge “sustained repeated trauma to his head and brain.” Plaintiff’s First Amended Complaint, *supra* note 18, at 5.

from one minute to the next.”⁵⁶ Hoge sat out of several Bears games and awaited the results of neurological examinations. The Bears’ management and coaching staff did not believe that Hoge’s concussions were a serious issue. According to Coach Wannstedt: “I just want [Hoge] to feel good. All of the tests have been good. There is no damage or anything. *It’s just a concussion.*”⁵⁷ Hoge blamed the Bears coaches and physicians for pressuring him to return to action before he was healthy, for playing him when “the films showed I was stumbling like I was drunk. It makes me mad that I wasn’t treated with more concern.”⁵⁸ On October 14, 1994, at the age of 29, when the average NFL player enters his athletic prime, Hoge retired from the NFL.⁵⁹

In August 1996, Hoge channeled his anger into a lawsuit against Dr. John Munsell, the Bears team physician. Hoge alleged that Munsell failed to warn him about the dangers and risks of sustaining subsequent and more severe concussions, and negligently allowed Hoge to return to competition without a follow-up examination.⁶⁰ Hoge maintained that Dr. Munsell breached a duty to “exercise the skill and care of a physician for a professional football team who undertakes the return-to-play decision authority for a player who has sustained a concussion with loss of memory.”⁶¹ Hoge contended that Munsell failed to inform him of the symptoms that might indicate a concussion.⁶² Hoge claimed that he was

56. Thigpen, *supra* note 17.

57. Truex, *supra* note 7 (emphasis added).

58. Truex, *supra* note 53.

59. Plaintiff’s First Amended Complaint, *supra* note 18, at 5; *Injuries Spur Bears’ Hoge to Retire*, USA TODAY, Oct. 18, 1994, at 8C, available at 1994 WL 11071088.

60. Plaintiff’s First Amended Complaint, *supra* note 18, at 3-6 (alleging that Dr. Munsell was negligent) because he:

- a. Did not perform a neurological or other medical evaluation of the plaintiff prior to allowing him to return to full contact football;
- b. Did not provide medical care, treatment, and evaluation of the plaintiff following the plaintiff’s injury. . . ;
- c. Did not diagnose the continuing post-concussion signs and symptoms . . . resulting from [Hoge’s] concussion;
- d. Did not assure that a mental status exam and cognitive testing was performed . . . following the concussion . . . and prior to allowing [Hoge] to return;
- e. Did not instruct the plaintiff about post-concussion signs and symptoms to watch for from his second concussion. . . ;
- f. Did not instruct the plaintiff of the risk of sustaining another and more severe concussion by returning to play contact football while suffering post-concussion symptoms; and
- g. Did not refer [Hoge] to a neurologist or other physician for a neurological evaluation following the injury.

See also Tony Gordon, *Testimony Continues in Hoge’s Lawsuit*, CHICAGO DAILY HERALD, July 19, 2000, at 9, available at 2000 WL 24352708. In response to Hoge’s allegations, Dr. Munsell denied that he had acted negligently or breached a standard of care. Answer to Plaintiff’s First Amended Complaint at 3, *Hoge v. Munsell*, No. 98 L 0996 (Ill. Lake County Ct. July 5, 2000).

61. Plaintiff’s First Amended Complaint, *supra* note 18, at 3.

62. Gordon, *supra* note 54.

unaware of what symptoms to look for, that concussion symptoms are not common knowledge, and that he was entitled to some form of fair warning.⁶³ Hoge argued that, had he been made aware of his post-concussion condition, he would have refrained from returning to play until he had completely recovered from the first concussion, and that he would have remained an active, salary-earning NFL player.⁶⁴

During the two-week trial, Dr. Munsell's attorney contended that "[t]he patient must assume part of the responsibility for his own recovery. Merrill Hoge had the duty to tell people he was not feeling well and [he] did not."⁶⁵ Testifying for the defense, Dr. Michael Schafer stated that Hoge had concealed from the Bears physicians the fact that he had suffered headaches since his first concussion.⁶⁶ "When I asked [Hoge] why he had not reported this to anyone on the team, he said he was afraid they would not let him play."⁶⁷ Schafer also alleged that Hoge had lied about his history of head injuries at a physical examination, prior to signing with the Bears.⁶⁸ Finally, Coach Wannstedt testified that he had observed Hoge's return to practice in-between the two concussions, and did not notice anything unusual about Hoge's on-field performance. "He had no problems remembering plays or executing his responsibilities," Wannstedt testified.⁶⁹ "Merril did not tell any of the players, coaches, or trainers he was having any problems when he came back to work."⁷⁰

According to Robert Fogel, Hoge's attorney, the trial's most dramatic moment arose during Hoge's testimony, when he answered a question about whether he was angry with Dr. Munsell and Fred Caito (then the Bears athletic trainer).⁷¹ Hoge contended that he wasn't angry with Caito, who had done nothing wrong and wasn't Hoge's doctor, but that he was angry with Dr. Munsell.⁷² Hoge stated that he was "entitled to know" about the signs and symptoms of his concussion and the risks of returning

63. Mitchell, *supra* note 20.

64. Plaintiff's First Amended Complaint, *supra* note 18, at 7; Hussain, *supra* note 18.

65. Tony Gordon, *Jury to Continue its Deliberations Today in Hoge Case*, CHICAGO DAILY HERALD, July 21, 2000, at 6, available at 2000 WL 24353218.

66. *Id.*

67. *Id.*

68. Gordon, *supra* note 65. While with the Pittsburgh Steelers, Hoge had suffered at least ten concussions. *Id.* During the trial, Hoge contended that the Bears had access to his NFL medical history, and that he had released his medical records with the Steelers at least a month before he signed the contract. *Id.*

69. Gordon, *supra* note 54.

70. *Id.*

71. Telephone Interview with Robert Fogel, *supra* note 22.

72. Hussain, *supra* note 18.

to play while still symptomatic.⁷³ Because Dr. Munsell did not tell him any of those things, Hoge claimed he was denied the opportunity to recover and continue to play professional football for at least three years.⁷⁴

Hoge sued Dr. Munsell for \$2.2 million, an estimate of lost earning potential due to his premature, forced retirement from the NFL.⁷⁵ Hoge alleged that he “was unable to fully attend to his ordinary duties for nearly a year . . . and continues to suffer from certain post-concussion signs and symptoms which are permanent.”⁷⁶ Hoge’s medical malpractice lawsuit also requested unspecified recovery for pain and suffering and permanent disability.⁷⁷ Hoge contended that as a result of his multiple concussions, he suffers from permanent damage – including headaches, sensitivity to light, and anger-management issues.⁷⁸ Hoge claims that he is currently unable to read two paragraphs of a newspaper without losing his concentration.⁷⁹ For a year after the concussions, Fogel contends, Hoge’s memory was so damaged that he had to keep a paper slip with his address and phone number on his possession at all times.⁸⁰ Hoge’s current employer, the ESPN television network (where Hoge is an NFL commentator), accommodates his continuing symptoms by dimming the lights in the studio when not taping.⁸¹ “The scary part,” said Hoge, “is worrying about becoming senile at 45 or 50. The doctors told me that I may have sped up something that normally might happen at 75 or 80.”⁸²

After deliberating for nearly ten hours, the jury found in favor of Merrill Hoge, awarding him \$1.45 million for the two years of his contract that the Bears had failed to honor, and an additional \$100,000 for pain and suffering.⁸³ Dr. Munsell’s attorney contended that the jury’s verdict would have been considerably smaller had the jury known of Hoge’s prior recovery of \$1 million from a personal injury insurance policy and

73. *Id.*

74. *Id.*

75. *Id.*

76. Plaintiff’s First Amended Complaint, *supra* note 18, at 6-7.

77. *Id.* at 6-7. *See also* Hussain, *supra* note 18.

78. Hussain, *supra* note 18. Hoge contended that he has difficulty focusing or concentrating for long periods of time. *Id.* During his trial, Hoge maintained that his medical problems were verified by tests run by a neuropsychologist in 1998 and 2000. Mitchell, *supra* note 20.

79. *Outside the Lines*, *supra* note 1 (reporting that following his second concussion, Hoge could not figure out how to travel from his home to his favorite restaurant).

80. Telephone Interview with Robert Fogel, *supra* note 22.

81. *Id.*

82. Truex, *supra* note 7.

83. Hussain, *supra* note 18 (reporting that the jury awarded nothing for Hoge’s disability claim).

\$250,000 from a worker's compensation claim.⁸⁴

B. TYPICAL CONCUSSION-RELATED LITIGATION: WILL MERRIL HOGE'S VICTORY OPEN THE LEGAL FLOODGATES?

Merril Hoge's victory is a trial of first impression. A search through American case law revealed not a single litigated case involving a team doctor's failure to warn an athlete about the risks and dangers inherent in returning to sports participation too quickly after sustaining a concussion. There exist, however, a number of distinguishable cases and settlements. For instance, in October 1999, a court in Wahoo, Nebraska, denied recovery for Brent Cerny, a former high school football player, in a lawsuit against his former school and two coaches.⁸⁵ Cerny sought \$2 million in damages, asserting that he had suffered permanent head injuries during a football practice, and that his coaches failed to realize he had suffered a concussion in a game the week prior.⁸⁶ The defense posited a trial strategy similar to that of the Bears in the Hoge case – that Cerny had failed to reveal his symptoms.⁸⁷ The court ruled that the coaches were not aware of Cerny's concussion.⁸⁸ "I think we needed to have our coaches vindicated," explained a school district administrator. "They were not negligent."⁸⁹

In *Shriber v. The Care Station*,⁹⁰ a sixteen-year-old high school football player in California, sued Dr. David Gonzales, a family practitioner employed by an urgent care facility.⁹¹ The player had sustained head injuries during a football practice.⁹² Dr. Gonzales' diagnosis was that the plaintiff had suffered dehydration, and should refrain from playing football if he subsequently suffered from a headache.⁹³ The player contended that Dr. Gonzales was negligent in both failing to diagnose his concussion and for not admonishing a refrain from

84. *Id.* See also *Former Steeler*, *supra* note 22 (reporting that the trial court had denied admission of Hoge's previous lawsuit).

85. *Former High School Football Player Loses Lawsuit Over Injury*, ASSOCIATED PRESS NEWSWIREs, Oct. 8, 1999.

86. *Id.*

87. *Id.*

88. *Id.*

89. *Former High School Football Player Loses Lawsuit Over Injury*, *supra* note 85.

90. No. YC 026 986 (Los Angeles Cty. Super. Ct. Cal. Nov. 10, 1998).

91. *Physician Found Liable in Suit Alleging Failure to Diagnose High School Football Player's Concussion*, 19 VERDICTS, SETTLEMENTS & TACTICS 106, Mar. 1999.

92. *Id.*

93. *Id.* Despite Dr. Gonzales' alleged orders, plaintiff returned to football, played in a game two days after his initial injuries, and collapsed during the game. *Id.* His permanent injuries include partial paralysis, and problems with his eyesight, speech, and memory. *Id.*

contact sports for five to seven days.⁹⁴ Dr. Gonzales countered that he had in fact warned the plaintiff and his mother, and that these instructions were explicit, adequate, and not vague.⁹⁵ The jury awarded the plaintiff a \$7.5 million verdict.⁹⁶

In many ways, *Shriber* is similar to Merrill Hoge's case. Both cases involved a physician's failure to adequately warn a patient about the risks and dangers associated with a premature return to competition following a head injury and with the nebulous medical standard of care for concussion treatment.⁹⁷ However, *Shriber* involved a traditional medical negligence action (*failure to properly treat*) at an urgent care facility. Hoge's case added a somewhat novel twist (*failure to properly warn of future risks*) to a claim of physician malpractice. Because Hoge had a previous treatment relationship with Dr. Munsell, Hoge's case raises more troubling ethical questions. Dr. Munsell was aware of Hoge's history of concussions and, under a reasonable physician standard of care, should have warned Hoge about future concussion risks. Such an ethical treatment dilemma may not arise in the *Shriber* situation, where an emergency room physician is limited by what information a patient reveals immediately prior to treatment.

Sports-related concussions also arise in a traditional product liability framework,⁹⁸ usually involving a football helmet manufacturer's liability to a player who suffers a concussion. In *Lister v. Bill Kelley Athletic, Inc.*,⁹⁹ an Illinois appellate court held that the "inherent danger" of football precluded a duty by the helmet manufacturer to warn a user of a possible

94. *Id.*

95. *Physician Found Liable in Suit Alleging Failure to Diagnose High School Football Player's Concussion*, *supra* note 91.

96. *Id.* The verdict included \$250,000 in past medical expenses; \$3.4 million in future medical bills and life care; \$1.8 million in lost earning capacity; \$5.5 million in economic damages; and \$2.2 million in non-economic damages. *Id.* The parties later settled. *Id.*

97. In *Shriber*, the plaintiff argued that Dr. Gonzales should have adequately warned him not to play football for five to seven days. *Id.* There is no current medical consensus about the proper amount of time a player must sit out from football, especially when there is not a loss of consciousness. Merrill Hoge's complaint attempted to clear some of the foggy concussion science, arguing that "[i]n 1994, there was a standard of care in the NFL community of physicians not to allow a football player to return to contact football while symptomatic from a concussion." Plaintiff's First Amended Complaint, *supra* note 18, at 5. However, it is unclear whether Hoge's statement is actually the current standard of concussion care in the NFL, or simply creative and tactical pleading.

98. GARY NYGAARD & THOMAS H. BOONE, *COACHES GUIDE TO SPORT LAW 48* (Human Kinetics Pub.) (1st ed. 1985) (stating that products liability actions may involve coaches as co-defendants with helmet manufacturers, especially if the coach is connected to the selling, fitting, or advertising of the product).

99. 485 N.E.2d 483, 487 (Ill. App. Ct. 1985).

head injury.¹⁰⁰ The court denied recovery to a high school football player who was paralyzed in a helmet-to-helmet collision.¹⁰¹

However, in *Rawlings Sporting Goods Co., Inc. v. Daniels*,¹⁰² a helmet manufacturer was found grossly negligent after one of its helmets caved in on a tackle, causing massive brain injuries to a high school athlete.¹⁰³ The court held that the manufacturer *should* have provided a warning that the helmet would not protect against concussions and subdural hematomas.¹⁰⁴ The court reasoned that “[w]here it is foreseeable that a consumer will rely on the product, thus exposing himself to a risk he might have avoided had he known the limitations, there is a duty to warn.”¹⁰⁵

Concussion litigation also arises in the traditional sports law context. For concussions sustained in the heat of competition, majority law holds that athletes generally assume the risk of sports injuries that are the known, apparent, and reasonably foreseeable consequences of athletic participation.¹⁰⁶ Less clear, however, are concussions sustained from action and conduct that is not a part of the game. What happens if a player is injured in practice, when pertinent guidelines often do not apply?¹⁰⁷

100. *Id.*

101. *Id.* Lister addressed several sports-related concussion issues, including a coaches' duty to teach his athletes proper tackling techniques and the fact that the Illinois High School Association had outlawed spearing, ramming, and butting (tackling techniques in which a player initiates contact with his helmet). *See id.*

102. 619 S.W.2d 435 (Tex. App. 1999).

103. *Id.* at 437.

104. *Id.* at 439-40. The appellate court's opinion essentially validated the testimony of plaintiff's expert witness, who reported that there are 30-40 deaths in high school football each year due to subdural hematoma. *See id.* The physician also described how a subdural hematoma occurs from a football injury. *See id.* First, an athlete becomes unconscious from a concussion, and then develops a blood clot on the opposite side of the brain, detectable only by EEG abnormalities. *Id.* at 438.

105. *Rawlings*, 619 S.W.2d at 439. The *Rawlings* case raises several other troubling ethical issues. The high school involved had a longstanding, questionable tradition of helmet distribution. *Id.* at 438. Players who had “lettered” (i.e. varsity-level athletes) enjoyed the first choice in the newest equipment. *Id.* at 437. The equipment manufacturer did not advertise a usage limit for its helmets; student athletes typically used the same helmets for the duration of their academic career. *Id.* at 437-38.

106. *See Morgan v. State of New York*, 90 N.Y.2d 471 (1997). *See also* Anthony S. McCaskey and Kenneth W. Biedzynski, *A Guide to the Legal Liability of Coaches for a Sports Participant's Injuries*, 6 SETON HALL J. SPORT L. 7, 43-48 (1996) (describing the assumption of the risk doctrine as an effective shield in favor of coaches, and citing several relevant aspects of the doctrine, including an athlete's degree of knowledge of the risks, a coach's control over an athlete, and the particular sport in which the participant is injured).

107. *See Zmitrowitz v. Roman Catholic Diocese of Syracuse*, 710 N.Y.S.2d 453, 454-55 (N.Y. App. Div. 2000) (arguing that Amateur Softball Association safety guidelines do not cover “warm-up,” practice, or try-out sessions, but that the coaches were liable for unreasonably increasing potential risk to their players by failing to provide catcher's masks that were locked in a nearby storage area).

What is the degree to which an athlete may be contributorily negligent if he or she wears equipment with a history of failing to prevent concussions?¹⁰⁸

In *People of the State of New York v. Schacker*,¹⁰⁹ a New York district court dismissed an action against a hockey player who, after play had been whistled dead, struck an unassuming opponent on the back of the neck with his hockey stick, causing a concussion, headaches, blurred vision, and memory loss.¹¹⁰ The court held that “[t]he normal conduct in a hockey game cannot be the standard for criminal activity under the Penal Law, nor can the Penal Law be imposed on a hockey game without running afoul of the policy encouraging athletic competition.”¹¹¹

Sports-related concussions also arise in insurance coverage disputes. The most renowned case involved Brett Lindros, a promising New York Islanders hockey player whose career was prematurely cut short by concussions.¹¹² In November 1994, the Islanders submitted an insurance application with Boston Mutual Insurance Company, but failed to disclose that prior to becoming a member of the team, Lindros had sustained three concussions within the span of a year.¹¹³ When filling out his portion of the insurance application, the Islanders’ athletic trainer failed to disclose Lindros’ previous concussions.¹¹⁴ The First Circuit Court of Appeals affirmed a denial of insurance coverage, holding that “the Islanders intended to deceive the underwriters and, alternatively, that the Islanders’s (sic) misstatements had the effect of increasing the insurers’ risk of loss.”¹¹⁵

108. See *Sieber v. Wigdahl*, 1989 WL 24093 (N.D. Ill. Mar. 13, 1989) (ruling that in a wrongful death action resulting from a collision during a polo match, evidence of plaintiff’s prior concussion while wearing the same defective helmet was relevant and admissible in trial).

109. 670 N.Y.S.2d 308 (N.Y. Sup. Ct. 1998).

110. *Id.*

111. *Id.* at 310. However, the recent highly publicized case involving NHL hockey player Marty McSorley may have changed the ethical and legal stakes. McSorley intentionally slashed another player in the face with his hockey stick after play had been whistled dead. *McSorley found guilty of assault with a weapon*, at http://www.canoe.ca/Slam001006/nhl_mcsorley-cp.html (last visited Sept. 25, 2001). A court in Vancouver, Canada, found McSorley guilty of assault with a weapon – his hockey stick – and sentenced him to an 18-month conditional discharge. *Id.*

112. John Kreiser, *Brett, We Hardly Knew Ya*, at <http://www.geocities.com/colosseum/bleacher/8846/96> (last visited Nov. 10, 2001).

113. *Boston Mut. Ins. Co. v. Blumencranz, Klepper, Wilkins & Dubofsky, Ltd.*, 165 F.3d 93, 94 (1st Cir. 1999). Lindros sustained a number of concussions while playing in a minor league hockey league. *Id.* The physicians treating Lindros after those concussions described his condition as “abnormal”; that he had sustained “concussive head injury” from being “taken into the boards”; and that “the risks . . . of further concussion, are slightly higher . . . the more concussions he has, there is a risk of permanent brain damage when that happens.” *Id.* at 95.

114. *Boston Mut. Ins. Co.*, 165 F.3d at 95.

115. *Id.* at 96. Affirming a summary judgment grounded on Massachusetts insurance law, the

Concussion-afflicted athletes may also sue team doctors under the traditional, well-established rules of medical negligence.¹¹⁶ However, medical malpractice actions often boil down to nebulous arguments over the applicable standard of care.¹¹⁷ In cases involving concussions, where the pathology is not fully understood and symptoms are often undisclosed, plaintiff's attorneys may opt for quicker, less lucrative settlements rather than the prospect of an uncertain outcome in court. Since it is certainly true that not every concussion leads to death or disability, a jury may dismiss a concussion as a non-serious "dinger" or "bell-ringer." And should defendants introduce evidence of the rarity of SIS-related death in football (discussed *supra*, in section II), plaintiffs may encounter a proof problem as well.

These economic, scientific, and litigation realities may dissuade all but the rare, well-heeled plaintiff like Merril Hoge from gambling on litigation against a team physician. It also explains why most similar suits to date have been settled out of court.¹¹⁸ Attorney Fogel contends that trying Hoge's case cost more than \$100,000, and he is uncertain whether he

First Circuit addressed how confusion and disorganization characterize a problematic relationship among athletic trainers, team doctors, and athletes: "[W]e agree with the district judge that the Islanders's (sic) conduct was indisputably reckless in the sense that it was careless in the extreme. But whether a jury would be compelled to conclude that 'the Islanders' consciously conveyed a false impression is a more difficult issue, especially because we are dealing with the state of mind of three different individuals who knew only parts of the puzzle: the trainer who completed the application but whose state of knowledge as to past concussions is unclear, and Lindros and the club doctor who knew more but may never have read the application." *Id.* at 97.

116. See *Speed v. State*, 240 N.W.2d 901 (Iowa 1976) (holding University of Iowa physicians liable for negligently failing to diagnose a basketball player's intracranial infection that resulted in blindness). See also *Welch v. Dunsmuir Joint Union High Sch. Dist.*, 326 P.2d 663 (Cal. Dist. Ct. App. 1958) (inadequate medical treatment of athlete caused permanent paralysis).

117. See ABBOTT S. BROWN, *NEW JERSEY MEDICAL MALPRACTICE* 7 (Richard E. Brennan ed., 2d ed. 2001) ("[a] plaintiff in a malpractice case must prove that the defendant deviated from the generally accepted standard of care").

118. In 1976, Dick Butkus, a Hall of Fame linebacker, settled a lawsuit with the Chicago Bears for a reported \$600,000. RAYMOND L. YASSER, *SPORTS LAW: CASES AND MATERIALS* 412, 419 (Anderson Pub.) (2d. ed. 1990). *Id.* Butkus alleged that the Bears team doctor had failed to adequately warn him about the long-term effects that extensive cortisone injections would have on his knee. *Id.* Another case involved NBA great Bill Walton, who sued the physicians of his team, the Portland Trailblazers, for failing to inform him of the permanent damage being done to his feet while he was injected with painkillers. See Scott Polsky, *Winning Medicine: Professional Sports Team Doctors' Conflicts of Interests*, 14 J. CONTEMP. HEALTH L. & POL'Y 503 n. 162 (1998) (citing Joseph Nocera, *Bitter Medicine*, *SPORTS ILLUSTRATED*, Nov. 6, 1995, at 84). Early in his career Walton had refused to take the drugs, but, bowing to the pressure of the fans, team officials, and teammates who had labeled him as a "malingerer," Walton agreed to take the shots. *Id.* (citing John Papanek, *Off on a Wronged Foot*, *SPORTS ILLUSTRATED*, Aug. 21, 1978, at 20). Walton's suit was also settled out of court. *Id.*

would take a similar case in the future.¹¹⁹ “We don’t pursue any and every malpractice case and risk so much money if there isn’t a strong likelihood of successful recovery for the client,” explains Fogel.¹²⁰ “When Merrill first approached me about his case, I asked myself, ‘Isn’t that the risk athletes take when they play contact sports?’”¹²¹ As to whether there is likely to be an increase in the number of *Hoge*-like cases, Fogel contends that concussion knowledge is much greater today than in 1994, when Hoge was injured.¹²²

However, the prevalence of sports-related concussion litigation is more likely to increase, due to the creation of a new breed of attorney: the Internet brain injury lawyer. At the Traumatic Brain Injury Law web site,¹²³ an Indiana attorney boasts that for 20 years he has provided legal services to the over two million Americans who annually sustain a traumatic brain injury.¹²⁴ “Even a person who has suffered a head or brain injury, with little or no documented loss of consciousness, may have permanent deficits which make it impossible for them to return to their previous lifestyle and sphere of activities.”¹²⁵ And with the prevalent media accounts of concussion-afflicted athletes – most notably in football, boxing, and ice skating; in amateur, professional, and recreational sports – the client lists for these new attorneys appear to be long and lucrative.

As a matter of health policy, society *needs* an increase of concussion-related litigation. Sports franchises must be put on notice that if they continue to mess with the minds of their athletes, they will be opening the door to future liability. With damages that require a difficult and arbitrary jury calculation, these lawsuits may be difficult for teams to defend. More significant, however, is the effect that increased litigation brought by higher-profile athletes will bear on all levels of athletics. With a multiplicity of *Hoge*-like judgments, the Saint Louis Rams would have benched quarterback Kurt Warner for a playoff game, instead of allowing him to participate while still “being sensitive to light” from a concussion suffered the week prior.¹²⁶ This effect would resonate among high school, intercollegiate, and amateur athletes. With precedential legal authority,

119. Telephone Interview with Robert Fogel, *supra* note 22.

120. *Id.*

121. *Id.*

122. *Id.*

123. <http://www.tbilawyer.com> (last visited Sept. 28, 2000).

124. *Id.*

125. *Id.*

126. *Warner Sensitive to Light*, THE ASSOCIATED PRESS, Dec. 30, 2000, available at 2000 WL 29296680 (reporting that the Rams team physicians had informed Warner that light sensitivity is common the week after a concussion, and that he passed the team’s check-up).

they could both exert additional autonomy in their medical treatment decisions, and force team owners, coaches, and society to reformulate uncaring and outmoded policies towards the health of athletes.

IV. CONCUSSION AND THE AMERICAN SPORTS SOCIETY: DEBUNKING TRADITIONAL VALUE, BELIEFS, AND ETHICS

A. *Athletes and the Pressure to the Play Hurt in Postmodern Society*

Societal glorification of athletes exacerbates the issue of sports-related concussions. In the United States, sports participation establishes the boundaries for “appropriate” masculine behavior, sense of individual self, and body production.¹²⁷ “Sport helps set the limits beyond which men should not venture if they are to achieve the status of man as opposed to woman. . . . [S]port also contributes to the subtler boundaries that establish masculine hierarchies among men.”¹²⁸ In plainer language, participation in sports is viewed as “machismo” – defined as exaggerated masculinity or a strong pressure to show toughness.¹²⁹ This attitude supercedes personal health and safety, and according to attorney Fogel, encourages athletes to disregard medical advice.¹³⁰ “No one remembers the guy who was replaced [due to injury],” explained Fogel.¹³¹ “The time an athlete cannot play is the time he is history and forgotten.”¹³²

In recent years, former Dallas Cowboys quarterback Troy Aikman had battled concussions and his own athletic machismo. Since 1989, Aikman had sustained eight concussions, three in a span of ten games.¹³³ After one concussion, Aikman’s mother told a Houston newspaper that she urged her

127. See Brian Pronger, *Post-Sport: Transgressing Boundaries in Physical Culture*, in *SPORT AND POSTMODERN TIMES* 277, 282 (Geneviève Rail ed., 1998).

128. *Id.*

129. Polsky, *supra* note 118, at 512 (citing Morley Ben Pitt, *Malpractice on the Sidelines: Developing a Standard of Care for Team Physicians*, 2 *COMM. & ENT. L.J.* 579, 583 (1981)).

130. Telephone Interview with Robert L. Fogel, *supra* note 22.

131. Hussain, *supra* note 18.

132. *Id.*

133. Ray Buck, *Aikman Feels OK, But Status Unclear*, *THE FORT WORTH STAR TELEGRAM*, Sept. 6, 2000, at 1, available at 2000 WL 5021808. It is interesting to note that after his first seven concussions, Aikman never missed a game. The decision to play was left entirely up to him. After his eighth concussion, the Cowboys intervened, taking the decision away from Aikman. *Outside the Lines*, *supra* note 1. See also Rick Cantu, *Jones Puts Aikman on Bench Despite QB's Protests*, *AUSTIN-AMERICAN STATESMAN*, Sept. 7, 2000, at D1, available at 2000 WL 7340755 (quoting Aikman’s reaction to the Cowboys decision not to play him “logical’y, . . . probably the right decision, a smart decision. . . . It’s difficult not to go out and play when you feel like you can. That’s the tough thing about dealing with concussions.”).

son to retire, “praying he won’t end up like Merrill Hoge.”¹³⁴ Many Cowboys fans blamed Aikman’s poor performance on his concussions, saying that he was too “punch drunk” to be effective. The media was even more caustic in their opinion that Aikman should retire:

Face it, you’ve developed a “glass” head like a fighter who has taken too many punches develops a glass jaw. He becomes easier and easier to knock out. So have you. The message is all too clear: The brain just can’t take it any more. . . . You have a lot to offer the world away from the football field. . . . [F]or all the right reasons, walk away.¹³⁵

The quarterback on three Super Bowl champions in the 1990s, Aikman was a proud athlete whose actions and public comments suggested that he did not consider concussions to be career- or life-threatening. In September 2000, ESPN reported that on repeated occasions, Aikman had ignored medical advice on when to return from a concussion.¹³⁶ Aikman stated that he was only 34 and still in his athletic prime, and that older athletes (including Cowboys legend Roger Staubach) have retired from concussions mainly because of their age. Said Aikman, “[I]f I were 38 and had had the concussions that I had last year, maybe I would have retired. It’s hard to say.”¹³⁷

Further complicating Aikman’s decision was the role of the Cowboys’ owner. In one breath, Cowboys owner Jerry Jones said, “I’m not interested in jeopardizing [Aikman’s] long-term well-being or quality of life.”¹³⁸ Jones then contended that “[O]ver the last year Troy went to different experts, if you will, on concussions, people who have not only treated an advised, but have studied concussions, and he was assured, based upon anything he’d had happen in the past, [that] he’d ha[ve] no long-term effects.”¹³⁹ With such mixed messages from management, it is not surprising that Aikman had publicly waffled about his football future.¹⁴⁰

134. Truex, *supra* note 7.

135. Jim Reeves, *Time to Say Goodbye: Aikman’s Life Not Worth Risk of Concussions*, THE FORT WORTH STAR-TELEGRAM, Sept. 5, 2000, available at 2000 WL 5021659.

136. *Outside the Lines*, *supra* note 1.

137. Buck, *supra* note 133.

138. Reeves, *supra* note 135.

139. *Id.* (stating that after his eighth concussion, Aikman met with two neurosurgeons who specialize in sports-related head trauma).

140. After Aikman sustained his tenth NFL concussion, in December 2000, the Dallas Cowboys’ management held him out of the season’s final two games. Randy Galloway, *Aikman Needs No Help from Media Swine on This One*, THE FORT WORTH STAR-TELEGRAM, Jan. 4, 2001, at 1, available at 2001 WL 5137070. Aikman was released by the team in March of the following year. James Adler, *Troy Aikman Hangs Up His Guns*, at <http://profootball.about.com/library/weekly/aa041001.html> (last visited Nov. 10, 2001). On April 9, 2001, Aikman formally announced his retirement,

*B. In Search of Sporting Perfection: How Fragmented Media Coverage
Contributes to Concussion Mythology*

Another concern regarding sports-related concussions is the “appropriation and transformation of the [athlete’s] body into a “perfect” sporting body/machine under the control of a postmodern social power.”¹⁴¹ In postmodern society, high performance sport is contingent upon, *inter alia*, computer-revealed genetic potentialities, absorption of chemical substances, individualized diet and training, publicity, and marketing.¹⁴² The body becomes a means of production that can be sacrificed for the product:

At the risk of injury or death, the body-machine is often pushed to the limit: it must produce exploits, medals, records, and thrilling sensations for the spectators... Furthermore, when this human machine becomes obsolete, it is replaced by less-human, high-tech versions of the body made possible by postmodern¹⁴³ technology. Technologically, the reality of the natural body becomes that of “ultra-refuse.”

Because athletes have a very limited career span -- before their ability and marketability are deemed “refuse” to sports owners -- it is in their interests to pursue any legal means necessary to protect their livelihood. Should team doctors fail to adequately warn about the risks and dangers of subsequent concussions, disabled athletes may possess no reasonable alternative but Merrill Hoge-type litigation.

Postmodern society’s convoluted and indirect manner in dealing with -- and disseminating information about -- concussions may also increase litigation. For instance, postmodernism is characterized by its fragmentation of time, space, the human subject, and society itself.¹⁴⁴ This fragmentation extends to the athletic culture of concussion, primarily through a news media that abstracts only certain elements from concussion stories, isolating them from a more comprehensive, scientific context, thereby creating a “montage [that] presupposes a fragmentation of reality, a loss of meaning, and a creation of new meaning.”¹⁴⁵ In short, the media’s coverage of sports-related concussions transpires in isolated and confusing montages, usually highlighting the devastating blow that induced a concussion. This fragmented image may be accompanied by a

acknowledging that the string of concussions had taken a toll on his body. *Id.*

141. Geneviève Rail, *Seismography of the Postmodern Condition: Three Theses on the Implosion of Sport*, in *SPORT AND POSTMODERN TIMES* 143,143 (Geneviève Rail ed., 1998).

142. *Id.* at 149.

143. *Id.*

144. Rail, *supra* note 141, at 153.

145. *Id.*

sound bite estimating how long the player will be sidelined. Rare is a detailed, scientific explanation about the severity of a concussion, or the player's individual history or symptoms.

Without appropriate medical advice and clinging to both societal misperception and media miscommunication, athletes maintain unenlightened views about concussions. Receiving a concussion is viewed as a rite of passage, a "humorous" affair in which an athlete gets his "bell rung" or "dinged."¹⁴⁶ Dallas Cowboys running back Emmitt Smith said of a recent concussion: "Some people call it a concussion. I call it a 'slap knockout.'"¹⁴⁷

Professional athletes deal with their concussions in volatile, highly public arenas. The pressure to return from injury is intensified by both an athlete's competitive desires and the weighty expectations of a city's fan base. There is financial pressure in the form of performance bonuses, and the influence from teammates not to let the team down.¹⁴⁸ Bowing to these pressures, athletes at all levels hide their personal problems and ailments, believing that such admissions weaken their on-field reputation or signify that they are beyond their athletic peak.¹⁴⁹ Life after sports suddenly becomes a depressing reality. Furthermore, after the first week of the NFL season, almost no athlete is injury free.¹⁵⁰ Many athletes play through a variety of injuries – including sprained ankles, broken fingers, deep bruises, and tendonitis – that they consider more serious than concussions.¹⁵¹ "Players don't complain of depression or headaches or feeling tired," says Merrill Hoge, who played through broken arms, a separated pelvis, and a fractured wrist. "Is your car still running? Then get in it and keep driving."¹⁵²

C. Continuing Concussion Myths by Coaches and "Team Doctors"

Another factor that may increase concussion-related litigation is the

146. *Study Aims to Find Out How Concussions Affect Athletes*, DESERET NEWS, Jan. 16, 2000, at B10, available at 2000 WL 2304773.

147. *Around the NFL*, HOUSTON CHRONICLE, Nov. 28, 2000, at 2B (reporting that Smith said there was "no doubt" he would return to the lineup the week after receiving his first-ever concussion).

148. See Paul Schwartz, *Of-Concussed Troy Has 'Boys in a Bind*, NEW YORK POST, Dec. 18, 2000, at 78 (noting that Troy Aikman would be eligible for a \$7 million dollar bonus had he continued the season). See also Paul Domowitch, *Injuries to High-Profile Players Bring Concussion Issue to Head*, HOUSTON CHRONICLE, June 11, 2000, at 14, available at 2000 WL 4304739.

149. See Domowitch, *supra* note 148.

150. *Around the NFL*, *supra* note 147.

151. See *id.*

152. Mitchell, *supra* note 20. See also Telephone Interview with Robert L. Fogel, *supra* note 22.

ethically conflicted roles of coaches and team doctors. American society grants much discretion to coaches, expecting them to act with the judgment and responsibilities similar to a professional.¹⁵³ One commentator has noted that “[l]oaded into the coaching situation are a set of normative expectations whereby the coach, implicitly at least, aims toward the good of the performer with appropriate knowledge and skills utilized in a framework of accumulated wisdom generated within the practice.”¹⁵⁴ Coaches must decide how much encouragement is too much when determining whether an injured athlete should return to play. Unfortunately, this question is often clouded by a lack of concussion awareness.¹⁵⁵ After a recent college football game, University of Texas head coach Mack Brown was reportedly “oblivious” to the pounding his quarterback took during the game.¹⁵⁶ And after Merrill Hoge suffered a concussion, coach Wannstedt told a reporter that “there is no damage or anything. *It’s just a concussion.*”¹⁵⁷

In theory, a coach’s job responsibilities entail protecting his or her players from unreasonable risks of injury.¹⁵⁸ In reality, “a more important part seems to be to patch up the injury, fill the athlete up with Novocain or some other chemical pain killer, and send him back out to play.”¹⁵⁹ While prevalent case law and legal commentary specifies a number of coaching duties,¹⁶⁰ there are no rules or guidelines that coaches must follow for

153. Mike McNamee, *Celebrating trust: virtues and rules in the ethical conduct of sports coaches*, in ETHICS AND SPORTS 148, 148-50 (Mike McNamee & Jim Parry eds., 1998) (comparing coaching to the “trustworthy relationship” between a professional and a client, and reciting duties and qualities of a professional, including: “a professional must aim at the client’s good. . . ; exhibit a willingness to act toward this aim . . . for as long as necessary to reach a determination; must be competent [and] free to serve client with discretion; [and] have a highly internalized sense of responsibility.”).

154. *Id.* at 163.

155. See e.g. Alan Truex, *Concussions in Sports: Taking Precaution: Mouthguards, Helmets Can Give NFL Quarterbacks Much-Needed Protection*, HOUSTON CHRONICLE, Dec. 12, 1999, at 26, available at 1999 WL 24269805.

156. *Id.* (describing the quarterback as being glassy-eyed after a game in which he was sacked seven times).

157. Bob Glauber, *These ‘Bruises’ Can Leave Scars*, N.Y. NEWSDAY, Oct. 25, 1994, at A68 (emphasis added). One author suggests requiring little league coaches, as a certification requirement, to be made aware of traumatic brain injury through “[s]ome level of indoctrination on brain and spinal cord injury, including meeting with survivors. . . . Not only would this make youth sports programs safer; it would also turn coaches, often children’s favorite teachers, into influential advocates for brain-trauma prevention.” WINSLADE, *supra* note 13, at 193-94.

158. See generally McCaskey, *supra* note 106, at 33-34 (stating that coaches may be liable for permitting injured athletes to compete if the coaches know, or should know, that the athlete is injured and that playing will increase the risk of injury).

159. WEISS, *supra* note 8, at 79-80.

160. McCaskey, *supra* note 106, at 17-18 (listing the duties of a coach as supervision, training and instruction, ensuring the proper use of safe equipment, providing competent and responsible

concussion and an athlete's subsequent return to play.¹⁶¹ And even with regulations resolving the unanswerable, eternal tension between the pressure to win and the proper application of medical ethics, it is highly doubtful that the average coach would consult such guidance.

The practice of hiring a "team doctor" is somewhat unusual and peculiar to sports medicine.¹⁶² Due to a variety of financial arrangements between physicians and teams, the concept of team doctor is not precisely defined.¹⁶³ In the past, a team physician was held only to "perform with the level of knowledge, skill, and care that is expected of a reasonably competent medical practitioner under similar circumstances."¹⁶⁴ Even though the American Medical Association (AMA) has not recognized team physicians as an official medical specialty or subspecialty, many courts have now designated team physicians as a specialty for the purpose of designating a minimal standard of care.¹⁶⁵

Team doctors are encouraged to compromise their medical ethics from their patients (the players), their employers (the teams), and from their personal self-interests.¹⁶⁶ A team doctor owes conflicted allegiance to his employer and the individual athlete, for whom he must provide the requisite medical standard of care.¹⁶⁷ It's a safe assumption that most athletes, like Merrill Hoge, are unaware of the severity of concussion. As a result of Hoge's victory, a team physician's failure to warn an athlete of concussion symptoms and future risks may expose the physician to malpractice liability.¹⁶⁸ And if NFL teams hire physicians who negligently breach a treatment duty or standard of care, plaintiff-athletes may join their deep-pocketed former employers under a vicarious liability theory.¹⁶⁹

personnel, warning of latent dangers, providing prompt and proper medical care, and preventing injured athletes from competing).

161. Richard Demak, *Was it Worth the Risk? Warned that he could be paralyzed, Arizona State's Mark Tingstad decided to play anyhow. Then he met a ball-carrier head on*, *SPORTS ILLUSTRATED*, Dec. 18, 1999, at 76.

162. YASSER, *supra* note 118, at 412.

163. See Joseph H. King, Jr., *The Duty and Standard of Care for Team Physicians*, 18 *HOUS. L. REV.* 657, 658 (1981).

164. *Id.* at 692.

165. See *Fleischman v. Hanover Ins. Co.*, 470 So. 2d 216, 217 (La. Ct. App. 1985) (holding that a board certified orthopedic surgeon with an interest in sports medicine was acceptable as a trial expert).

166. Polsky, *supra* note 118, at 504.

167. *Id.* at 503.

168. Of course, these suits may be limited by an athlete's contract, a state's worker's compensation statute, or – in reference to the enforcement of an athlete's health plan – by ERISA preemption.

169. Team physicians may successfully argue that an athlete assumed the risk of injury, particularly in cases where the athlete failed to heed medical advice.

Team doctors also owe considerable loyalty to their team, for whom they must keep athletes in peak physical condition and available to play.¹⁷⁰ A team's management may encourage its physicians to perform a less serious procedure than what is truly necessary for an athlete's recovery; may persuade them to not fully investigate an injury; or force them to overlook health problems unrelated to performance on the field.¹⁷¹ Finally, a physician may contravene his treatment duty in order to maintain the many benefits and prestige that accompany the job.¹⁷² Enamored and protective of their status as a part of the team, team physicians will not rock the boat by reporting a team's unethical medical practices.¹⁷³ Because of these conflicting loyalties, the overwhelming majority of athletes believe that team doctors favor team management in disputes with players and contract arbitrations.¹⁷⁴ Many sports agents have insisted on contract clauses requiring medical evaluations by an independent expert.¹⁷⁵

Sadly, there are few meaningful guidelines that regulate the conduct and practice of team doctors.¹⁷⁶ The World Medical Association guidelines state that the health of patients must be the first consideration, and that a "doctor owes to his patient complete loyalty."¹⁷⁷ The Hippocratic Oath offers similar generic language: "I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. . . ."¹⁷⁸ According to the AMA, "the interests of the patient, here the athlete, should be paramount in the practice of medicine."¹⁷⁹ The

170. Polsky, *supra* note 118, at 504.

171. *Id.* at 515-16 (citing Ron Pollack, *Are Injured Players On Their Own?*, PRO FOOTBALL WEEKLY, Nov. 10, 1996, at 11-12).

172. *Id.* at 518-19. In the late 1990s, there was considerable focus on team physicians and the possible conflicts of interest that prevented them from providing an adequate standard of care. *See generally* Skip Bayless, *When the Cheering Stops: Former Professional Football Players*, SPORT, Feb. 1998, at 70 (predicting that NFL players have a 50 percent chance of living happily ever after football and that NFL team physicians are blinded by fame). The Tampa Bay Buccaneers reportedly fired their team doctor because he was acting *too much* in his players' best interests by ordering excessive knee surgeries in one season. *Id.* When the former Oakland Raiders team doctor reigned, the team's owner allegedly reprimanded him for circumventing a senior team doctor and instead recommending the player to a neck specialist. *Id.*

173. *But cf.* WEISS, *supra* note 8, at 80 (detailing the plight of Dr. Michael Lawhon, who resigned as Cincinnati Reds team physician after the 1991 baseball season to protest what he perceived to be inadequate care of the Reds' athletes).

174. Polsky, *supra* note 118, at 524 (stating that 96.2 percent of NFL agents surveyed felt that team physicians "almost invariably" favor management).

175. WEISS, *supra* note 8, at 80.

176. Polsky, *supra* note 118, at 505.

177. *Id.* at 505.

178. 9 THE WORLD BOOK ENCYCLOPEDIA 227 (1983).

179. Polsky, *supra* note 118, at 505-06 (citing American Medical Association Council on

American College of Sports Medicine guidelines state that “when confronted by pressures from coaches and athletes, the team physician has the obligation to put those pressures aside when providing treatment.”¹⁸⁰ These boilerplate guidelines provide little more than lip service, however, and have little practical effect on a team physician’s ethical conduct towards high-priced athletes afflicted by concussions.

The absence of proper guidelines, combined with the numerous conflicts of treatment interests, has yielded an unsafe situation for concussed athletes. The highly publicized recent concussion drama of Philadelphia Flyers star center Eric Lindros illustrates how this troubling scenario typically plays out. Lindros was injured during a road game in Boston, and was examined by a Boston Bruins team doctor who failed to properly diagnose a concussion.¹⁸¹ Two weeks later, an independent physician determined that Lindros had indeed suffered a concussion.¹⁸²

Lindros’ long history of concussions jeopardized his hockey future. He was a “franchise” player embroiled in an acrimonious contract dispute with the Flyers, who didn’t want to pay him “super star” money because he had missed significant portions of the last three seasons.¹⁸³ Shockingly, the Flyers publicly questioned the severity of Lindros’ concussions, and whether he had taken too many precautions and too much time off during his rehabilitation.¹⁸⁴ And much like the Bears defense during Merrill Hoge’s lawsuit, the Flyers management blamed Lindros for failing to reveal his symptoms.¹⁸⁵ Ironically, they blamed Lindros for his machismo – or the aggressively tough behavior that teams so prodigiously reward on the playing field, but decry when it comes to health concerns. Said a Flyers executive: “[H]e didn’t tell anyone [he wasn’t feeling right]. . . . [H]ow the hell do you expect a physician to make a diagnosis if you don’t tell him what’s wrong with you.”¹⁸⁶

Blaming an athlete for not reporting his concussive symptoms is a troubling strategy for dealing with the problem of sports-related concussions. Such team attitudes and action could have left Lindros with

Ethical Affairs, Current Opinion of the Council on Ethical and Judicial Affairs 56 (1949)).

180. *Id.* (citing AMERICAN COLLEGE OF SPORT MEDICINE’S GUIDELINES FOR THE TEAM PHYSICIAN (Robert C. Cantu & Lyle J. Mitcheli eds. 1991)).

181. Domowitch, *supra* note 148. Philadelphia Flyers personnel were unable to ascertain the identity of the Boston physician who examined Lindros. *Id.*

182. *Id.*

183. See Al Strachan, *Lindros Saga Has Rich Tradition of Poor Advice*, at http://www.Canoe.ca/Slam010314/col_strachan-sun.html (last visited Nov. 10, 2001).

184. See <http://www.msnbc.com/news/616975.asp> (last visited Nov. 10, 2001).

185. Domowitch, *supra* note 148.

186. *Id.*

no other viable alternative than a risky and career-threatening lawsuit.¹⁸⁷ It is clear that when an athlete sues the hand that pays, the well of potential high-dollar payers – an athlete's future livelihood – may run dry. Such an increase in concussion-related litigation, however, may clean up an impure physician-athlete relationship that has rendered many former athletes permanently disabled. While the radical tactic of a *Hoge*-like lawsuit would indeed black list the plaintiff-athlete from future NFL employment, it may take only a handful of high-profile cases for professional teams to clean up the acts of their physicians.

V. GUIDELINES AND TESTING FOR THE TREATMENT AND MANAGEMENT OF CONCUSSIONS

For nearly two decades, there has been a heightened societal concern involving sports-related concussions. In 1985 the United States Health and Human Services published a study calling for further research to “develop definitions of all sports-related injuries . . . and . . . to incorporate criteria reflecting the length of time symptoms persist and the level of disability.”¹⁸⁸ Without a precise medical definition for concussion or an overriding treatment consensus, athletic trainers and team physicians have created uniquely individual treatment methodologies. Some athletic trainers simply prescribe smelling salts and aspirin, and send their players back into the game.¹⁸⁹ Reported a high school football coach in 1997, “When we pat backs and shake hands after [a] game, we’ll have a tendency to look into the players’ eyes. We want to see if they’re looking woozy.”¹⁹⁰

In this age of managed care, rising health care costs, and non-existent profits, the rate of hospital admissions for minor traumatic brain injury (including concussions) is rapidly declining.¹⁹¹ This trend suggests that non-hospital and outpatient methods of injury prevention bear a larger role

187. Fortunately for Lindros, he never had to pursue this avenue. On August 20, 2001 Lindros was traded to the New York Rangers, effectively ending the longstanding dispute. <http://www.msnbc.com/news/616975.asp> (last visited Nov. 10, 2001).

188. Public Health Report 1985, Special Section: Conference on the Prevention of Injuries, U.S. Department of Health and Human Services, Public Health Reports, Nov.-Dec. (1985).

189. Dave Lance, *QB Should Sit Out Game Today*, DAYTON DAILY NEWS, Sept. 11, 1998, at 4D, available at 1998 WL 12807119.

190. David Wharton, *A Weekly Look At The High School Sports Scene In The Southland, Playing It Safer, Study Of Head Injuries Creates Subtle Changes In Monitoring Of Players*, L.A. TIMES, Sept. 18, 1997, at C10.

191. David Thurman, *Trends in Hospitalization Associated With Traumatic Brain Injury*, 282 JAMA 10, Sept. 8, 1999 (concluding that from 1980 to 1995, the estimated annual incidence rate of hospitalization associated with TBI declined 51 percent).

than ever. Under the numerous non-binding and conflicting guidelines for concussion management (discussed *infra*), team doctors and athletic trainers indeed play critical, gate-keeping roles in athletic health determinations. Because of their proximity to the athletes, they are most apt to detect the signs that players are concussed.¹⁹² However, many in the medical community believe that this treatment model, while pragmatic, cost-effective, and sensible, is based too much on the individual, anecdotal experiences of athletic trainers, with no formal process for consensus building among experts.¹⁹³

Evidencing this concern, a 1995 study, conducted at the Children's Hospital in Alabama, concluded that "[a]ll who care for youth athletes must become familiar with the guidelines for management of concussion to provide appropriate care and counseling and to avoid a tragic outcome."¹⁹⁴ Billed as the first-ever published report examining whether head-injured athletes receive appropriate treatment instructions, the study determined that the majority of concussion patients received inadequate counseling regarding the potential future risk of head injury.¹⁹⁵

There are at least sixteen different sets of guidelines that attempt to standardize the treatment of sports-related concussions.¹⁹⁶ These guidelines center on a general consensus regarding concussions: that an athlete who has been asymptomatic for one week and does not show residual neurologic deficits should be allowed to participate in sports.¹⁹⁷ This section surveys the most widely used guidelines, and evaluates their effectiveness.

192. Wojtys, *supra* note 1, at 680.

193. Kelly, *supra* note 5, at 575 (maintaining that these individual experiences are anecdotal and fragmented, isolated from one another without any animal-experimentation literature or evolving understanding of the pathophysiology of traumatic brain injury); Wojtys, *supra* note 1, at 678-79 (maintaining that those responsible for the care of athletic teams must have a plan formulated in advance for routinely assessing head injuries).

194. Frank J. Genuardi and William D. King, *Inappropriate Discharge Instructions for Youth Athletes Hospitalized for Concussion*, AMERICAN ACADEMY OF PEDIATRICS, Feb. 1995, at 216 (calling for future research of head-injuries to better characterize the nature of concussions).

195. *Id.* (explaining that the study's findings may be explained by a lack of documented instructions in a patient's medical record; unawareness of physicians to guidelines that have been widely disseminated in non-medical texts; external pressures from outside sources; and pressures from the athletes themselves to return to play too quickly).

196. Harmon, *supra* note 39, at 887 (arguing that guidelines, when viewed as a whole, reflect a lack of consensus that results from the absence of evidence-based data).

197. Kurt Kurowski & Sangili Chandran, *The Preparticipation Athletic Evaluation*, AMERICAN FAMILY PHYSICIAN, May 1, 2000, at 2683.

A. The AAN Guidelines

In March 1997, the American Academy of Neurology (AAN) and the Brain Injury Association announced new guidelines for concussion management.¹⁹⁸ Developed to prevent the consequences of repeated sports-related concussions, the AAN guidelines are touted as the “first attempt to create [a] consensus on the best way to evaluate and manage athletes who suffer a concussion during athletic competition.”¹⁹⁹ Promulgated by the AAN’s Quality Standards Committee, the guidelines attempt to use neuroscience rather than “local lore and individual opinion” to create a new model of concussion management.²⁰⁰ The guidelines recognize the inherent risk of injury in contact sports, and attempt to balance the maintenance of competitive athletics and the protection of participant safety.²⁰¹ They also strive to standardize the appropriate management of concussions, to prevent the catastrophic outcomes related to acute brain swelling, and to avoid cumulative brain injury related to repeated concussions.²⁰²

The AAN guidelines are based on a well-established grading scale system that is the standard-bearer in determining the severity of a concussion.²⁰³ A “Grade 1” concussion is defined as a transient confusion with no loss of consciousness, and concussion symptoms that resolve in less than 15 minutes.²⁰⁴ Grade 1 concussions are the most difficult to recognize, because an athlete is not rendered unconscious and suffers only momentary confusion.²⁰⁵ To treat a Grade 1 concussion, the AAN recommends removing an athlete from athletic participation; providing an immediate examination with follow-ups spaced out in five-minute intervals; and permitting a return to athletics only if post-concussive symptoms clear up within 15 minutes.²⁰⁶ A second Grade 1 concussion during the same contest eliminates the player from returning to the contest

198. AAN Press Release, *supra* note 27.

199. *Id.* The AAN guidelines have been endorsed by at least 14 medical and athletic organizations. *Id.* The same week that the AAN guidelines were announced, the Centers for Disease Control and Prevention (CDC), in Atlanta, announced that an estimated 300,000 sport-related concussions occur annually in the United States. See Mark L. Fuerst, *Neurologists Offer Concussion Options*, 25 *PHYSICIAN AND SPORTSMEDICINE* 4, Apr. 1997, at 25.

200. Report of the Quality Standards Subcommittee, *supra* note 3, at 581.

201. *Id.*

202. Kelly, *supra* note 5, at 575.

203. Report of the Quality Standards Subcommittee, *supra* note 3, at 581.

204. *Id.* at 582.

205. *Id.* (describing symptoms of a Grade 1 concussion as inattention, poor concentration, transient confusion, and mental status abnormalities – all of which resolve in less than 15 minutes).

206. *Id.* at 583.

that day.²⁰⁷

The AAN defines a "Grade 2" concussion as transient confusion with no loss of consciousness, and with concussive symptoms lasting longer than fifteen seconds.²⁰⁸ Concussion symptoms lasting longer than an hour warrant medical observation.²⁰⁹ A "Grade 3" concussion is "any loss of consciousness, either brief (seconds) or prolonged (minutes)."²¹⁰ A Grade 3 concussion is the most serious, and the AAN's recommendations for treatment are extensive.²¹¹

The AAN guidelines include recommendations for future research and development of a standardized sideline assessment of concussion ("SAC") in athletes.²¹² A 1997 study validated the AAN recommendation that

207. Report of the Quality Standards Subcommittee, *supra* note 3, at 583.

208. *Id.* at 582.

209. Report of the Quality Standards Subcommittee, *supra* note 3, at 582. The AAN recommendations for managing a Grade 2 concussion include:

1. Remove from contest and disallow return that day.;
2. Examine on-site frequently for signs of evolving intracranial pathology.;
3. A trained person should reexamine the athlete the following day.;
4. A physician should perform a neurologic examination . . . after 1 full asymptomatic week. . . .;
5. CT or MRI scanning is recommended in all instances where headache or other associated symptoms . . . persist longer than one week.;
6. . . . return to play should be deferred until the athlete has had at least two weeks symptom-free and with exertion.;
7. Terminating the season for that player . . . by any abnormality on CT or MRI scan consistent with brain swelling, contusion, or other intracranial pathology.

Id. at 583.

210. *Id.* at 582.

211. See Report of the Quality Standards Subcommittee, *supra* note 3, at 583-84. The AAN's Grade 3 treatment recommendations include:

1. Transport the athlete from the field to the nearest emergency department by ambulance. . . .;
2. A thorough neurologic evaluation should be performed emergently. . . .;
3. Hospital admission . . . if any signs of pathology are detected, or if the mental status of the athlete remains abnormal. . . .;
5. Neurologic status should be assessed daily . . . until all symptoms have stabilized or resolved.;
6. Prolonged unconsciousness, persistent mental status alterations, worsening post-concussion symptoms . . . require neurosurgical evaluation or transfer to a trauma center.;
7. After a brief (seconds) Grade 3 concussion, the athlete should be withheld from play until asymptomatic for 1 week at rest and with exertion.;
8. After a prolonged (minutes) Grade 3 concussion, the athlete should be withheld from play for two weeks at rest and with exertion.;
9. Following a second Grade 3 concussion, the athlete should be withheld from play for a minimum of one asymptomatic month. The evaluating physician may elect to extend that period beyond 1 month. . . .;
10. CT or MRI scanning is recommended for athletes whose headache or other associated symptoms worsen or persist longer than 1 week.;
11. Any abnormality on CT or MRI consistent with brain swelling, contusion, or other intracranial pathology should result in termination of the season . . . and return to play in the future should be seriously discouraged in discussions with the athlete.

Id.

212. See Report of the Quality Standards Subcommittee, *supra* note 3, at 584. The recommendations include:

1. Development of a valid, standardized, systematic sideline evaluation designed for the immediate assessment of concussion in athletes.;
2. Development of a standardized,

SACs are useful in detecting concussion and determining fitness to return to play.²¹³ The study, which involved 141 high school varsity football players in Iowa, contained four components (orientation, immediate memory, concentration, and delayed recall) with a maximum test score of 30 points.²¹⁴ Concussed players scored significantly lower on SACs administered immediately following the injury than in the non-concussed control group, leading the researchers to conclude that the more severe the concussion, the greater the discrepancy in test score.²¹⁵ The athletic trainers reported that the SAC required little training to master and was easy to administer on the sidelines during game conditions.²¹⁶

B. The "Cantu" Guidelines

The "Cantu" guidelines provide an alternative for concussion management.²¹⁷ These guidelines are based on the experience of a renowned neurosurgeon, Dr. Cantu, and his review of then-existing medical literature on concussions.²¹⁸ Dr. Cantu believed that in most cases the final return-to-play decision should be rendered by a clinician, but that "deviation from these recommendations may be entirely appropriate depending on the individual case."²¹⁹ The Cantu Guidelines,²²⁰ originally drafted in 1986, are more simplistic than other sets of guidelines, designed to consider the effects of cumulative concussions and prevent second-impact syndrome.²²¹ A concussion is categorized as "asymptomatic" (no

neuropsychological test battery designed to detect impairment associated with concussion.; 3. Multicenter prospective studies documenting baseline physical, neurologic, and neuropsychological data in athletes and changes in these measurements following concussions.; 4. Multicenter prospective studies to determine the physical, neurologic, and neuropsychological outcomes of multiple concussions.

Id.

213. McCrea, *supra* note 3, at 586.

214. *Id.* at 587.

215. *Id.* at 587-88. See also Wojtys, *supra* note 1, at 682 (citing studies in support of SAC's effectiveness in determining that players score lower on the SAC score after receiving a concussion, but recognizing that future research is needed to explain conflicting data).

216. McCrea, *supra* note 3, at 586.

217. See generally Cantu, *supra* note 14, at 1-2.

218. Collins, *supra* note 1.

219. *Id.*

220. See generally Cantu, *supra* note 14. The Cantu Guidelines divide concussions into three grades. A Grade 1 concussion involves no loss of consciousness and period of post-traumatic amnesia (PTA) of less than 30 minutes. A Grade 2 concussion usually involves a loss of consciousness of less than 5 minutes and a PTA of more than 30 minutes, but less than 24 hours. A Grade 3 concussion is the most severe, involving a loss of consciousness greater than five minutes and a PTA longer than 24 hours. See Cantu, *supra* note 28, at 53.

221. Anthony Luke & Lyle Micheli, *Sports Injuries: Emergency Assessment and Field-side Care*, PEDIATRICS IN REVIEW, Sept. 1999, at 296.

headache, dizziness, impaired orientation, concentration, or memory loss during rest or exertion); Grade 1 (no loss of consciousness and post traumatic amnesia less than 30 minutes); Grade 2 (loss of consciousness less than five minutes and post traumatic amnesia greater than 30 minutes); and Grade 3 (loss of consciousness greater than five minutes or post traumatic amnesia greater than 24 hours).²²²

C. The Colorado Guidelines

The Colorado guidelines for concussion management are also popular among trainers and team doctors.²²³ Created in 1991 after the on-field death of a football player, and endorsed by the American Academy of Pediatrics, these guidelines are rigorous, requiring emergency transport and close follow-up treatment for athletes rendered unconscious for any period of time.²²⁴ Athletes who suffer a Grade 1 concussion under the Colorado guidelines may return to play if their symptoms clear up after 20 minutes.²²⁵ The Colorado guidelines are viewed as extremely (and perhaps overly) cautious and conservative.²²⁶ For instance, under the Colorado guidelines, after sustaining a second Grade 2 concussion, an athlete should be sidelined for at least a month.²²⁷ This is markedly different than the AAN guidelines, which allow an athlete, after a Grade 3 concussion (marked by any period of unconsciousness) to return to play after a two-week period of being asymptomatic.²²⁸

222. See Concussion Prevention and Athletic Mouthguards, at <http://www.qualitydentistry.com/dental/sdentistry/concuss.html> (last visited Sept. 28, 2000).

223. See *Report of the Sports Medicine Committee: Guidelines for the Management of Concussion in Sports*, Colorado Medical Society (1991) [hereinafter *Report of the Sports Medicine Committee*].

224. *Id.*

225. *Report of the Sports Medicine Committee*, *supra* note 223. Under the Colorado Medical Society's guidelines, a Grade 1 concussion is described as "[c]onfusion without amnesia or loss of consciousness." *Id.* An athlete should be removed from the athletic contest, examined, and if no symptoms persist, may return after 20 minutes of observation. *Id.* A Grade 2 concussions involves "[c]onfusion with amnesia but no loss of consciousness." *Id.* An athlete must come out of a game or practice, must be evaluated over the next 24 hours, and, if no symptoms persist, may return to athletics after one week. *Id.* A Grade 3 concussion involves "[a]ny loss of consciousness," and requires immediate medical evaluation and a month of recuperation before an athlete may return to play. *Id.* See also Genuardi, *supra* note 194, at 216.

226. Fuerst, *supra* note 199, at 25.

227. *Id.*

228. *Id.*

D. Other Attempts at Standardized Concussion Management

1. Baseline Testing

Many sports teams now utilize baseline testing, which involves a series of quizzes and interviews, administered by athletic trainers, that test an "athlete's orientation, memory, vision, attention span, language, mental flexibility, and coordination."²²⁹ Typical baseline testing includes a benchmark study that is performed on an athlete at the beginning of each season, with a cumulative follow-up examination after any concussions.²³⁰ Baseline testing is popular because it is inexpensive (costing under \$1,000 to administer to an entire team) and takes the individual player out of the equation. A University of California at Los Angeles recent baseline study concluded that in 67 percent of mild concussion cases, the injured athlete's blood sugar was measured at levels often found in coma victims.²³¹

The NFL adopted baseline testing in 1995, after concussion prevention was the central topic at the NFL Players Conference in Newport Beach, California.²³² The approach started by the NFL's Pittsburgh Steelers, and followed by at least 25 teams, involves testing the athlete at set times before and after a suspected concussion.²³³ "On the cognitive testing, a player can't lie with that," explains Merrill Hoge. "[Baseline testing] helps them . . . reevaluate how significant the concussion was, how long the symptoms . . . last[ed]."²³⁴

2. The Pre-Participation Qualification Process

Another form of standardized concussion treatment is the pre-participation qualification process, in which a family or team physician

229. See Sager, *supra* note 15 (reporting that this model is commonly known as the "Steelers Battery" – because it was developed by team physicians for the Pittsburgh Steelers – and since 1997 has been utilized by the NFL, NHL and National Collegiate Athletic Association).

230. *Id.*

231. Sharon Robb, *Head Trauma on Rise for Athletes*, FT. LAUDERDALE SUN-SENTINEL, May 28, 2000, at 22, available at 2000 WL 22176058 (citing a study published in the *Journal of Neurotrauma* that concludes that even moderate concussions may leave athletes vulnerable to further brain damage).

232. *Pittsburgh Steeler Concussion Evaluation Process Proposed to National Football League*, PR NEWSWIRE, Feb. 17, 1995.

233. Wojtys, *supra* note 1, at 681. See also Chuck Finder, *Heads Up: UPMC's Sports Medicine Center Starts Concussion Program*, PITTSBURGH POST-GAZETTE, Sept. 7, 2000, at C8, available at 2000 WL 22085116 (describing how 25 NFL teams, numerous colleges, and 150 high schools subscribe to the "Steelers Battery," and stating that an athlete will not be allowed to return to play until matching his baseline test score).

234. *Outside the Lines*, *supra* note 1.

decides whether an athlete is healthy enough to compete in athletics.²³⁵ The medical history section of the typical sports physical includes a question regarding “[p]revious episodes involving loss of consciousness.”²³⁶ The objectives of a pre-participation sports include: identifying conditions that preclude participation in certain sports; diagnosing treatable conditions; developing treatment and rehabilitation plans; advising the athletes of which sports they may participate; and fulfilling legal and insurance requirements.²³⁷ Recommendations for pre-participation forms include written warnings of the inherent risks of the game, questionnaires regarding medical advice, and a detailed and conspicuous informed consent process.²³⁸

E. The Ineffectiveness of Standardized Guidelines for Concussion Management

1. The Guidelines Fail to Handle Real-Life Problems

The strongest argument against concussion management guidelines is that they are ill equipped to handle real-life problems.²³⁹ Take, for instance, the case of Bubba Wilson, a former linebacker at a New Orleans, Louisiana, high school, who nearly died after receiving his fourth concussion.²⁴⁰ After enduring a jolting collision, Wilson, like so many athletes, staggered to the sideline where his coach stood, ready to evaluate his injured player.²⁴¹ But Wilson passed out as he reached the sideline, the result of a burst blood vessel in his brain, which required a risky, three-hour surgery.²⁴²

Wilson was lucky that he passed out as soon as he did, with many

235. Tucker, *supra* note 46, at 149-54 (listing the factors a physician should consider in the decision-making process as 1) the pathology of the disease or condition; 2) the status of the disease or condition; 3) the physical demands of the sport; 4) the psychologic demands of the sport). See also Kurowski, *supra* note 197, at 2683 (contending that a comprehensive medical history covering neurologic problems is an important component of a pre-participation athletic evaluation).

236. Tucker, *supra* note 46, at 149-54. See also NYGAARD, *supra* note 98, at 38-39 (displaying the University of Montana Health and Fitness Program’s “Initial Fitness Testing, Program Participation and Informed Consent” form).

237. Albert C. Hergenroeder, *The Preparticipation Sports Examination*, ADOLESCENT MEDICINE, Dec. 1997, at 1526.

238. NYGAARD, *supra* note 98, at 39-40.

239. Collins, *supra* note 1.

240. Steve Dorsey & Julius Whigham III, *High Schools Look Hard at Concussions: Young Athletes Are Being Scrutinized Far More Diligently After Suffering Head Injuries*, THE NEW ORLEANS TIMES-PICAYUNE, Nov. 28, 1999, at C13, available at 1999 WL 29013053.

241. *Id.*

242. *Id.*

onlookers watching. However, the most widely used guidelines (including the AAN, Cantu, and Colorado) fail to cover potentially fatal medical conditions, like Bubba Wilson's, that are not readily discernible to the naked eye. Because the majority of concussions are minor (i.e. Grade 1), athletes will not report serious pain or symptoms because they simply are not aware of any irregularity.²⁴³ Even adhering to the strictest guidelines for a minor concussion, the athlete, after a brief respite, may return to competition, despite the fact that a hidden medical danger – like an acute subdural hematoma²⁴⁴ or a burst blood vessel – could surface at any time. The obvious solution is to prohibit an athlete's return to competition after any head injury or suspected concussion, no matter how minor the injury. However, this seems unlikely, given the numerous pressures athletes are under to return to play.²⁴⁵

2. The Guidelines Protect the Teams, Not the Athletes

Though accepted by the overwhelming majority of team physicians and athletic trainers, there is a rising groundswell of antipathy towards the standardized guidelines. Because they are issued by professional fitness organizations, some commentators consider these guidelines to be an inextricable linkage of knowledge and power.²⁴⁶ These guidelines are quintessentially political in nature due to their combination of the athlete's body as a site for the exercise of social power and as an object of scientific knowledge. For instance, the guidelines, political in nature, do not capably address the needs of athletes as health care seeking individuals, but rather as media-generated, larger-than-life social role models. On a pragmatic level, the guidelines offer the lowest possible threshold by which a coach or team doctor may return an athlete to competition. Motivated ultimately by team interests, the guidelines minimize the health concerns of individual athletes.

243. See Harmon, *supra* note 39, at 887 (reporting that many athletes' premature return is caused by post-traumatic amnesia rather than a conscious disregard of medical advice or enthusiasm for sport).

244. See Cantu, *supra* note 28, at 49 (describing how in some cases of subdural hematomas, the athlete walks off of the athletic field under his own power, only to collapse at some point soon thereafter).

245. Andre Picard, *Athletes Ignore Concussion Risks, Researchers Find Premature Resumption of Contact Sports Increases Hazard of Serious Brain Injuries*, THE GLOBE AND MAIL, Sept. 8, 2000, at A8 (reporting that physicians and athletic trainers are not following relevant guidelines, and allowing athletes to return to competition too soon after receiving concussions).

246. See Margaret MacNeill, *Sex, Lies, and Videotape: The Political and Cultural Economics of Celebrity Fitness Videos*, in SPORT AND POSTMODERN TIMES 163, 170 (Geneviève Rail ed., 1998).

3. Absence of Standardized Testing for Concussion

Other researchers focus not on debunking a particular set of guidelines, but rather the base foundation of all of the guidelines: the use of consciousness²⁴⁷ as the degree of differentiation between grades of concussions.²⁴⁸ According to Dr. Michael McCrea, a noted brain injury researcher, the AAN guidelines stating that athletes shouldn't return to play within 15 minutes to a month of a concussion are only "guesswork."²⁴⁹ And in a recent issue of JAMA, several authors argued that the development of guidelines has been controversial within the sports medicine community, largely because of a lack of scientific foundation leading to an "arbitrary delineation of concussion grades and return-to-play criteria."²⁵⁰ The authors also contend that the guidelines are not applied in a standard fashion to all levels of athletic competition, and fail to account for individual variability in the presentation of concussion symptoms.²⁵¹

Yet another criticism is with the concussion grade system itself. "Our basic method for measuring symptoms has been to ask an athlete, 'Do you have a headache?'" said Dr. Bill Bean, director of sports medicine at the University of Utah.²⁵² "That's not an especially definitive guide."²⁵³ "Most of the work . . . done on concussions has been on the level of

247. The Glasgow Coma Scale (GSC) is the typical method for assessing the level of consciousness. See Wojtys, *supra* note 1, at 679. The GSC assigns points for particular questions answered. *Id.* For instance, spontaneous eye opening scores four points because "[r]eticular activity system is intact"; an incomprehensible verbal response (moaning or absence of recognizable words) generates two points. *Id.* A final score of eleven or greater generally means an excellent (as high as 90 percent) prognosis for recovery; a score of seven or less is considered very serious. *Id.*

248. Kelly, *supra* note 5, at 577 (describing the common perception that concussion requires a loss of consciousness). *But cf.* Paul R. McCrory & Samuel F. Berkovic, *Video Analysis of Acute Motor and Convulsive Manifestations in Sport-Related Concussion*, 54 *NEUROLOGY* 7, Apr. 11, 2000 (concluding that the presence of loss of consciousness is the main predictive factor in describing the motor and convulsive manifestations in acute sports-related head injury).

249. *Researchers Look at High School Sport Concussions*, *supra* note 32. *But cf.* Fuerst, *supra* note 199, at 25 (quoting Dr. James P. Kelly, co-writer of the AAN guidelines, as being firmly in support of consciousness as a differentiation point: "If the athlete was unconscious, more or deeper brain matter was affected.").

250. Collins, *supra* note 1 (describing how the current guidelines fail to deal with real-life scenarios by being too conservative or beckoning for either a too hasty return to play). See also Harmon, *supra* note 39, at 887 (stating that a debate rages in the medical community about what scientifically constitutes a "brief" versus a "prolonged" loss of consciousness).

251. Collins, *supra* note 1. See also Fuerst, *supra* note 199, at 25 (reporting that Dr. Robert Cantu, drafter of a well-known and widely used set of concussion management guidelines, felt uneasy with the AAN guidelines because they placed a "brief loss of consciousness in the most severe category and placing posttraumatic amnesia in a less severe category.").

252. *Study Aims to Find Out How Concussions Affect Athletes*, *supra* note 146.

253. *Id.*

classifications,” explained Dr. Eliot Pellman, chairman of the NFL’s Subcommittee on Mild Traumatic Brain Injury.²⁵⁴ “But the other question is: What could have been done to prevent concussions from happening in the first place? . . . [T]he real question is trying to prevent [concussions] from happening and trying to identify who’s at risk.”²⁵⁵ Also, there is no consensus among the guidelines about how to manage serial concussions in athletes.²⁵⁶ Researchers at four universities – Utah, Michigan State, Pittsburgh, and Florida State – are presently gathering and analyzing data on concussions in football players, in an effort to provide athletic trainers with a revamped set of guidelines.²⁵⁷

In theory, any proposed guidelines highlight the general agreement among medical practitioners that there needs to be a uniform management system of concussions.²⁵⁸ However, much more research is needed before proclaiming any one set of guidelines as the standard of care.²⁵⁹ Suggestions include conducting further studies on animals as well as athletes, defining the severity of concussion by some factor other than a loss of consciousness, and that return to play should be determined during an examination that is more detailed than a brief sideline assessment.²⁶⁰

4. The Guidelines Fail to Limit Concussion-Related Litigation

Standardized guidelines for concussion management also fail to limit litigation because they do not establish a minimum standard of care for physicians. The Cantu guidelines, for example, are designed to readily apply to the playing field, not in a court of law.²⁶¹ In his much-cited article, “Return to Play Guidelines After Head Injury,” Dr. Cantu opined that the “[Cantu guidelines] . . . are meant to serve only as a guideline. Deviation based on the clinical judgment of the treating physician may be

254. Bob Glauber, *NFL Safety Study Centers on Ear*, *NEWSDAY*, Apr. 4, 2000, at A76, available at 2000 WL 10005696.

255. *Id.*

256. Harmon, *supra* note 39, at 887.

257. *Study Aims to Find Out How Concussions Affect Athletes*, *supra* note 146.

258. *See* Harmon, *supra* note 39, at 887.

259. *Study Aims to Find Out How Concussions Affect Athletes*, *supra* note 146. Guidelines for concussion management are still developing. At the Henry Ford Health System in Detroit, one of the nation’s leading brain injury facilities, a research team has developed computer software that helps coaches and athletic trainers more accurately test their athletes for concussions. *See id.* The program has been e-mailed to 100 high schools across the country, primarily in rural and medically underserved communities. *Id.*

260. MR Lovell et al., *Does Loss of Consciousness Predict Neuropsychological Decrements after Concussion*, *CLINICAL JOURNAL SPORTS MEDICINE*, available at <http://www.ncbi.nlm.nih.gov/htbin-post/entrez> (last visited Oct. 22, 2001).

261. Cantu, *supra* note 14, at 52.

entirely appropriate.”²⁶²

Because these guidelines do not establish a legal standard of care, they are virtually useless to physicians in a court of law. For instance, in Merrill Hoge’s trial, the judge granted a motion in limine excluding from evidence all guidelines for concussion management.²⁶³ Attorney Fogel considered this to be an essential tactical victory.²⁶⁴ A medical malpractice claim is much easier to prove when there is not a standard from which to deviate.²⁶⁵ Until a standard of care for concussion management is established, plaintiff-athletes may encounter easy victories in claims against negligent team physicians.

VI. SOLUTIONS

A. Increased Awareness of Concussion Severity

As the media broadcasts a proliferation of *Hoge*-like cases, athletes will acquire more knowledge of concussion severity. This increased awareness will result in more frequent concussion-related litigation. While athletes may still be willing to shed their blood, sweat, and tears for the love of the game, they will no longer sacrifice their brains. When they witness, first-hand and in gruesome detail, the medical horrors that await, athletes will alter their life priorities. They will no longer remain silent regarding their concussive symptoms. Losing a spot in the starting lineup pales in comparison to a future quality of life marred by headaches, confusion, light insensitivity, and memory loss.

The increased publication of sports-related concussion stories in the mainstream news media has also fostered increased confusion.²⁶⁶ This

262. *Id.* at 58.

263. Telephone Interview with Robert Fogel, *supra* note 22.

264. *Id.*

265. *Id.*

266. For instance, conservative radio host Rush Limbaugh has cited a bulk of conflicting scientific literature, questioning the safety of “heading” a soccer ball. See Jamie Trecker, *Artificial Turf’s Time Has Passed*, at <http://espn.go.com/soccer/s/1999/0921/70657.html> (last visited Nov. 11, 2001). Several recent studies suggest that repeated heading may directly cause concussion and mild traumatic brain injury, rendering long-term neuropsychological difficulties. See *Diagnosing Brain Injuries in Soccer*, 71 JOURNAL OF PHYSICAL EDUCATION, RECREATION & DANCE 4, Apr. 1, 2000, available at 2000 WL 14761443. However, the current scientific consensus is that fears of concussion from soccer are overblown, especially in youth soccer, where children typically avoid heading the ball. *CSA: No Evidence Heading Causes Concussions*, THE CALGARY SUN, Apr. 14, 2000, at 63, available at 2000 WL 18213739. In April 2000, the Canadian Soccer Association (CSA) issued a statement maintaining that the scientific evidence is inconclusive. *Id.* According to Dr. Rudy Gittens, a member of the CSA, “[T]his scare that some people are heaving about, ‘Oh my child is going to be brain-damaged’ . . . I think they have a greater likelihood falling off a swing or

problem is exacerbated on the Internet. A Yahoo search of the word "concussion" produced over 1,000 web hits. For the layperson, numerous sites specify the basics on concussion causes, incidence, risk factors, and prevention.²⁶⁷ However, many of these sites discuss concussions in very general terms;²⁶⁸ raise corporate practice of medicine issues; offer hidden, murky disclaimers for any medical advice; and do not cite the most recent scientific findings.²⁶⁹ Athletes armed with invalid or outdated science may not find courts and juries receptive to their lawsuits.

The Internet also provides information to increase the awareness of team doctors. The American Academy of Neurology web site²⁷⁰ has posted a "concussion guidelines promotional toolkit"²⁷¹ designed to publicize the AAN guidelines. These include sample op-ed pieces that neurologists may send to their local media outlets. These fill-in-the-blank pieces advocate for a changing public perception of concussions.²⁷² One piece, entitled, "You Can Ice a Shoulder or a Knee, But You Can't Ice the Brain,"²⁷³

being pushed around by the school bully than having this occur in soccer." *Id.*

267. See http://health.yahoo.com/health/Diseases_and_Conditions/Disease_Feed_Data/concussion (last visited Sept. 28, 2000); <http://www.healthanswers.com/centers/top...erview.asp?id=first+aid&filename=433.html> (last visited Sept. 28, 2000); <http://www.wrc-gbmc.org/Library/1998/Fall/concussion/concussion.html> (last visited Sept. 28, 2000) (sponsored by a prominent women's center, this web site is designed to convince the public that "seeing stars" – or receiving a minor concussion – is not a benign injury).

268. See http://health.yahoo.com/health/Diseases_and_Conditions/Disease_Feed_Data/concussion (last visited Sept. 28, 2000); <http://www.healthanswers.com/centers/top...erview.asp?id=first+aid&filename=433.html> (last visited Sept. 28, 2000).

The Yahoo!Health Concussion site defines a concussion as a "significant blow to the head that may result in unconsciousness." *Id.* Concussion symptoms are listed as "altered levels of consciousness," "confusion," "convulsions," "vomiting," and "muscle weakness." *Id.*

269. See e.g., *id.* The Yahoo!Health site disclaimer reads: "Always seek the advice of your physician or other qualified health professional before starting any new treatment. Medical information changes rapidly and while Yahoo and its content providers make efforts to update the content on the site, some information may be out of date. No health information on Yahoo, including information about herbal therapies and other dietary supplements, is regulated or evaluated by the Food and Drug Administration and therefore the information should not be used to diagnose, treat . . . any disease without the supervision of a medical doctor." *Id.*

270. <http://www.aan.com> (last visited Nov. 2, 2001).

271. *Id.* The toolkit includes that includes a palm card, SAC card, concussion fact sheet, a NEUROLOGY article, sample op-ed piece, sample news releases, bios of guideline authors, list of endorsing organizations, and samples of nationwide media coverage on guidelines. *Id.* For local neurologists, the packet suggests "Community-Based Activities," "Media Relations Activities," and "Tips to Follow in Your Promotion Activities." *Id.*

272. See *id.*

273. <http://www.aan.com> (last visited Nov. 2, 2001). Other articles include "There is No Such Thing as a Minor Concussion: Local Neurologist to Speak About Sports and Concussion" and "There Is No Such Thing as a Minor Concussion: Neurologist Urges [City, County, or State] to Adopt Sports-Related Concussion Guidelines." *Id.* These pieces are essentially forms for AAN neurologists to broadcast the AAN guidelines for concussion management. There are a number of

details the statistical frequency of concussions in amateur sports, localizes concussions to a particular community,²⁷⁴ describes the basic science and effects of concussion, lists the physician/author's office contact information, and concludes that "the intellectual future of our children is at stake."²⁷⁵ Doctor's Guide²⁷⁶ details a number of organizational guidelines for concussion management. The site proclaims: "This is an educational document that will be helpful to those who are in the trenches working with athletes. . . . It provides medical practitioners with guidelines that should improve the care of athletes."²⁷⁷ The site also details the AOSSM's "Concussion in Sports" workshop, which recommended nine steps for concussion management.²⁷⁸

If a physician's guiding Hippocratic mantra is "Do No Harm," then increased concussion awareness will protect patient-athletes from injury. Ethically enlightened physicians will learn that it is their responsibility to warn and protect the players from injuries – both apparent and unknown. A failure to keep abreast of concussion developments will result in substandard treatment, potential liability, and possible license revocation.

Brain injury attorney web sites also raise numerous bioethical litigation concerns. While these sites are likely to mention that the attorney is familiar with the science of concussions,²⁷⁹ these claims may

ethical concerns raised here: namely, that the newspaper articles so shamelessly promote the AAN or the physician as being as important as the concussion itself.

274. <http://www.aan.com> (last visited Nov. 2, 2001). An insertion in the article reads: "[INSERT PUBLICIZED, RECENT EXAMPLE OF A LOCAL ATHLETE IN YOUR COMMUNITY WHO HAS SUFFERED CONCUSSION, KNOCKING HIM OR HER OUT OF PLAY.]" *Id.*

275. *Id.*

276. <http://www.docguide.com> (last visited Sept. 29, 2000).

277. *Id.*

278. *Id.* These recommendations include:

- (1) Every athlete with a concussion should be evaluated by a physician;
- (2) Loss of consciousness precludes return to play that day;
- (3) Persistence of (longer than 15 minutes) or delayed onset of any symptoms precludes return to play that day;
- (4) Any deterioration in physical or mental status after the initial trauma warrants immediate transport to an emergency facility with neurological/neurosurgical services available;
- (5) When prolonged symptoms (greater than 15 minutes) are experienced after a concussion, great care must be exercised in returning an athlete without symptoms to practice or competition;
- (6) Newer tools, such as balance testing, cannot be recommended at this time for clinical decision-making following a concussion;
- (7) Further study is needed of the Standardized Assessment of Concussion (SAC) as part of the initial evaluation. . . .;
- (8) Continued clinical and basic science research of sports-induced concussions is needed across athletic organizations. . . .;
- (9) There is a need to set up databases on all athletes with concussions to help assess the risk of future injury and further difficulties.

Id.

279. <http://www.tbilawyer.com> (last visited Nov. 2, 2001). The Traumatic Injury Law web site states that its lead attorney is familiar with "the various structures within the human brain," how

mislead the general populace. These sites boldly claim that the science of concussions is well established, when, in fact, a great deal of medical uncertainty still exists. This uncertainty may be one reason why plaintiffs' attorneys have been quick to settle concussion cases like that of Merrill Hoge. It is daunting enough to prevail in a medical malpractice action against an established practitioner. The battle is even more difficult – if not impossible – when a plaintiff's required expert testimony is shaky at best. For this reason, the Hoge case may be an isolated exception, and not the future litigation trend.

There is, however, some evidence that the increased publicity is working.²⁸⁰ According to former Pittsburgh Steelers quarterback Mike Tomczak, "You can ice the ankle, the knee, the shoulder, the neck, but you can't ice the brain."²⁸¹ And according to now retired New York Islander Brett Lindros (discussed *supra*, in section IIIB): "As a young athlete, I thought I was made of rubber, extremely resilient, and certainly invincible. However, through my experiences, I learned that the brain, unlike a muscle, cannot be 'rehabbed' time and time again."²⁸² Said Merrill Hoge, "[f]ootball players play with sprained ankles and broken hands all the time, but something wrong with your brain is completely different. If I had known what to be looking for, I would have let people know what was going on."²⁸³

While it is unclear what effect these statements will bear on future litigation, they indicate that players are more aware of the significance of concussion. If teams do not amend their health policies, they will face increased litigation brought by less tolerant plaintiff-athletes, and conducted before juries with heightened concussion awareness.

traumatic events can cause TBI and post concussion syndrome, and how a head injury effects an individual's mental functioning, personality, self-esteem, employability, and day-to-day functioning. *Id.*

280. Andrew Chung, *Lindros Battling Concussions with Head Massage*, THE CANADIAN PRESS, Aug. 9, 2000, available at 2000 WL 25116832. Philadelphia Flyers center Eric Lindros may be the first athlete to publicly embrace craniosacral therapy (CST), an unconventional health treatment performed by a minority of massage therapists, chiropractors, physiotherapists, and osteopaths to relieve post-concussion symptoms. *Id.* CST therapists claim to "feel the rhythm of the body's cerebrospinal fluid that courses inside membranes of the nervous system, protecting and nourishing the brain and spinal cord. The therapist detects restrictions or blockages in that rhythm, which tell the story of a lack of physical, emotional, or spiritual well being." *Id.* CST involves a gentle massaging of the cranium, which, in theory, frees any restrictions in the body's cerebrospinal fluid. *Id.* "You feel like you want to hug a tree," says the burly Lindros. "But I find it works." *Id.* CST's effectiveness in the treatment of concussions is highly controversial and unproven by scientific studies. *Id.*

281. AAN Press Release, *supra* note 27, at 3.

282. *Id.*

283. Gordon, *supra* note 54.

B. Improvements to Athletic Equipment

Another way to stem future *Hoge*-like litigation is to stress the development and use of protective sports equipment.²⁸⁴ In football, the general medical consensus suggests that mouthguards reduce that rate of concussions in football.²⁸⁵ However, Dr. Charles Moser, a Houston dentist who works with the University of Texas football team, doubts the effectiveness of mouthguards.²⁸⁶ “The main thing [mouthguards] do is hold the teeth in place when they fracture,” explains Dr. Moser. “There’s a little protection offered for the jaw, making it less likely to shove it up into the skull, but I don’t know that it prevents many concussions.”²⁸⁷ In addition, many football quarterbacks opt against wearing mouthguards because they are restrictive to breathing and calling out signals.²⁸³

NFL athletes also may wear a helmet with an inflatable inner air sack or the Pro Cap, a polyurethane secondary helmet that attaches to the primary helmet, reducing the rate of concussion by thirty percent.²⁸⁹ In theory, these measures absorb a blow to the head and reduce brain shock.²⁹⁰ Unfortunately, most NFL players choose not to inflate their helmets, arguing that inflated helmets fit too tightly and are unattractive to wear.²⁹¹

The development of improved athletic equipment is critical to preventing sports-related concussions. Athletes at all levels must

284. Numerous Internet web sites advertise athletic equipment designed to reduce the incidence of concussions. For instance, the “Brain-Pad” may appear to be a traditional mouthguard, but it “sure doesn’t act like one.” See http://www.wipss.com/NEW_WIPSS_main.html (last visited Nov. 2, 2001). The Brain-Pad “repositions and locks the lower jaw in a down and forward position, reducing the risk of concussions from the lower jaw slamming into the base of the skull and brain.” *Id.* While the web page includes numerous illustration and endorsements from marginally famous athletes, absent is any scientific validation of the Brain-Pad’s effectiveness. See *id.* Gimmicky equipment like the Brain-Pad may be capitalizing on the wave of heightened concussion awareness, offering nothing more than minimal assurance for worried parents and marginal protection for athletes.

285. See Alan Truex, *Concussions in Sports: Taking Precautions: Mouthguards, Helmets Can Give NFL Quarterbacks Much-Needed Protection*, HOUSTON CHRONICLE, Dec. 12, 1999, at 26, available at 1999 WL 24269805. Numerous studies have concluded that mouthguards have dramatically reduced head and neck injuries, as well as concussions, and when a football player does not wear a mouthguard, he is at an increased risk for concussion and mouth injury. See <http://www.qualitydentistry.com/dental/dentistry/concuss.html> (last visited Nov. 2, 2001).

286. See Truex, *supra* note 285.

287. *Id.*

288. *Id.*

289. Truex, *supra* note 285.

290. *Id.*

291. *Id.* The helmets of NFL quarterbacks are also equipped with radio transmitters, which make it impossible to inflate their air sacks. *Id.* Also, manufacturers have started producing lighter and lighter helmets that have been prone to cracking – and have been banned by several teams. *Outside the Lines*, *supra* note 1.

overcome outmoded myths about their equipment. A helmet is not merely a fashion statement but rather a player's only line of defense against a concussion. So what if a helmet doesn't look good, so long as it offers the maximum protection? To impede concussion-related litigation, the NFL and other professional sports leagues should require their athletes to wear the safest equipment available. Without such league mandates, plaintiff-athletes will wear cosmetically ineffective equipment, and then sue their teams because of the concussions they sustained during competition. Until sports leagues enact and enforce standards requiring the safest athletic equipment, plaintiff-athletes will also be free from the limitations of comparative negligence, for wearing deficient helmets.

C. Amending the Rules of Sports

To limit future concussion-related litigation, professional sports leagues should alter unsafe game rules and conditions. In recent years, suggested changes to football include banning artificial turf, rigorous punishment for chronic rules violators, and a prohibition of blitzing of the quarterback.²⁹² According to an on-line statement by Dr. James P. Kelly, Director of the Brain Injury Program at the Rehabilitation Institute of Chicago:

Shots to the head must be outlawed and penalized with suspension, and even expulsion, from the sport. The seriousness of concussion needs to be addressed with serious consequences for those who inflict them. As we see, a career can be ended by concussion. So should the career of habitual head injury perpetrators.²⁹³

Successful recent NFL rule changes have outlawed helmet-to-helmet contact and spearing.²⁹⁴ However, rule amendments focusing on strategy, rather than individual technique, are typically shot down by traditionalist naysayers.

Proper enforcement of the existing rules will also slow down the rate of concussions. To satiate an American fan thirsty for increased violence in sports, professional referees allow overly physical play. Such an aggressive sporting culture – one that rewards dirty play, like kneeling, elbowing, and shoving – creates a dangerous situation for the athlete.

292. Truex, *supra* note 285. Artificial turf is a synthetic, manufactured carpet that is laid over a concrete surface. *Id.* Those arguing against artificial turf, which is used in domed or enclosed stadiums, say that it causes more jarring body impacts than the grassy, natural surface. *Id.*

293. <http://www.aan.com/public/concussionssportsindex/98371keely.html> (last visited Nov. 2, 2001).

294. Glauber, *supra* note 254.

Professional sports leagues must strictly enforce their own rules, especially those that are enacted to prevent concussions. Otherwise, they will be joined as deep-pocketed defendants in concussion-related litigation.

D. *Altering the Team Doctor Treatment Model*

Another way to limit concussion-related litigation is altering the dynamic between the team and its physician. According to attorney Fogel, team physicians should inform the concussion-afflicted players that a premature return to play could risk death or brain damage.²⁹⁵ “There is no way those players would go back to play. . . . You don’t have a surgery that you can do on the brain. You can’t transplant the brain or the spinal cord.”²⁹⁶

The obvious solution is for team physicians to become more strict with team management, and rigidly place each athlete’s personal health before wins and losses. This is probably not a realistic solution, as team owners will simply replace rogue doctors who do not act according to established, but unwritten team policy. Sports leagues may also mandate a restructuring of the relationship between teams and their physicians. Several options include prohibiting the team doctor from acting as part of the team; controlling the doctor’s economic incentives; eliminating the position of team doctor so that team management has no contact with or control over the physician; and requiring official league certification of all team doctors.²⁹⁷

Increased concussion awareness will empower the individual athlete’s medical autonomy. Merrill Hoge suggests that the athlete must assume greater responsibility for his or her own health. He encourages an NFL policy requiring a player “to take recovery time, and I mean more than a week or two, regardless of how he says he feels.”²⁹⁸ And during closing arguments of Hoge’s trial, Fogel stated that “[a]thletes in all sports will play through aches and pains unless they are aware of their significance.”²⁹⁹ Fogel claimed that players who suffer concussions should

295. Mitchell, *supra* note 20.

296. *Id.* Dr. Rob Huzienga, former Oakland Raiders team doctor, claims that:

All the ex-players I know would have appreciated their pro football experience much more if they could have had a doctor who said: ‘I know you want to play today, but your ankle’s the size of a grapefruit. I know you could play with a pain-killing shot, but you’re risking not being able to play with your kids when you’re 30.’ The NFL needs a system in which a doctor has the last word.

Bayless, *supra* note 144.

297. Polsky, *supra* note 118, at 525-27.

298. Truex, *supra* note 285.

299. Hussain, *supra* note 18.

be treated like those who suffer “stingers,”³⁰⁰ in their necks and spines, and required to be placed on a team’s injured reserve list.³⁰¹ Clearly, such a policy will keep star players out of key games. But a physician may never be too cautious when it comes to an athlete’s brain. And under the current concussion treatment models that encourage an unsafe, too rapid return to athletic participation, physicians are spurring on a wave of litigation against themselves.

E. Action by Professional Sports Leagues

Finally, the governing sports leagues should take drastic steps to protect the health and safety of their participants. For instance, since 1987 the British Medical Association and the AAN have campaigned for an all-out ban of boxing, citing the increased risks for irreversible brain damage and chronic neurological problems.³⁰² The practical reality of such proclamations are dubious, if not impossible. Due to lucrative, big-business concerns (and the fact that sports in America are immensely popular), it is unrealistic that a professional sports league like the NFL or NHL would voluntarily decide to shut itself down due to a health risk that usually does not result in death or disability. This strict regulation must come from the federal government, and in a political age when smaller government is a political mantra, such intervention -- what some critics deride as “nanny society”³⁰³ -- seems highly unlikely.

Professional sports leagues do regulate the manner in which team physicians treat concussions. Most leagues now mandate that their member teams publish an updated injury report each week. In April 2000,

300. See Geoffrey S. Kuhlman & Douglas B. Mckeag, *The Burner: A Common Nerve Injury In Contact Sports*, 60 AMERICAN FAMILY PHYSICIAN 2035, 2035 (1999). “A ‘burner,’ also called a ‘stinger,’ is a nerve injury resulting from trauma to the neck and shoulder. Its primary symptom is burning pain radiating down one upper extremity. The pain is sometimes accompanied by numbness, paresthesias or weakness. A burner signifies peripheral nerve dysfunction or injury. In most cases, it is a brachial plexopathy involving the upper trunk. However, cervical nerve root lesions have also been described. A burner is generally a brief, self-limited injury, but recovery can take weeks to months in severe cases. The injury often becomes a recurrent problem and occasionally leads to a chronic syndrome.” *Id.*

301. Telephone Interview with Robert Fogel, *supra* note 22.

302. Peter Hagell, *Should Boxing Be Banned*, JOURNAL OF NEUROSCIENCE NURSING, Apr. 1, 2000, at 126 (arguing that “[b]oxing is the only so-called sport in which it is possible to win by inflicting irreversible brain damage on your opponent. . . . [B]oxing is no more a sport than bear-baiting or cockfighting.”).

303. See *id.* (stating that “[t]o attempt to ban a sport that dates back to 400 B.C., which is regularly watched by millions of people worldwide and earns successful fighters a lot of money, is futile.”). It is important to note, however, that in Sweden professional boxing has been banned for several decades, and amateur boxing is strictly regulated, with shorter fights and mandatory protective equipment. *Id.*

the NFL's Subcommittee on Mild Traumatic Brain Injury published findings that players are at the greatest risk of concussion when suffering helmet-to-helmet hits on the side of the head, with the greatest incidence occurring when the blow was close to the ear.³⁰⁴ In the wake of this study, it is likely that the NFL will require helmet manufacturers to increase padding around their helmets' ear areas.³⁰⁵

But sports leagues have not been united or consistent in their approaches to concussion management. Because physicians do not travel with NHL teams, hockey players who suffer concussions during a road game may not visit with the team doctor for several weeks.³⁰⁶ Also, according to the chairman of the NHL's subcommittee on brain injuries, the culture of hockey during a game is such "that when somebody comes to the bench, there's not much conversation. [The players] pretty much stare straight ahead until they go out for their next shift. [Concussions] are much harder to pick up."³⁰⁷

The NHL has been described as being in a state of denial when it comes to concussion management.³⁰⁸ One NHL team physician disparaged the NFL's concussion policy, deriding the NFL for "count[ing] every single episode, no matter how minor, no matter how trivial. . . . If a guy just comes off the field woozy, they may put it down as a concussion. . . . We're trying to call a concussion a concussion."³⁰⁹ Such old-fashioned, unenlightened attitudes will clearly yield more Merrill Hoge-type litigation.

VII. CONCLUSION

Given the outmoded attitudes of athletes and increased physical contact in American sports, sports-related concussions will become more commonplace. In the absence of scientifically valid and legally binding guidelines for concussion management, plaintiff-athletes will, with greater frequency, sue their team doctors, teams, and sports leagues. And with inconsistent treatment models and an uncertain definition of concussion, these claimants will encounter a litigation jackpot. Possible solutions to

304. Glauber, *supra* note 254 (finding that in a three-year research project that studied over 100 concussions, the most severe concussions were caused by blows sustained close to the ear).

305. *Id.* The NFL is perhaps the sports league most attuned to the dangers of concussions. "The NFL competition committee recently instituted rules prohibiting helmet-to-helmet hits on quarterbacks in the act of passing and on receivers who are receiving a pass." *Id.*

306. Domowitch, *supra* note 148.

307. *Id.*

308. *Id.*

309. *Id.*

this litigation increase include heightening concussion awareness, improving athletic equipment, amending sports rules, and altering the team doctor treatment model. With a proliferation of media coverage, athletes will gain more autonomy in their medical treatment decisions. They will not be as apt to play hurt or sacrifice their brains for the good of the game. If society does not adjust ineffective treatment models for concussion, and revise antiquated attitudes, negligent team doctors should brace themselves for a rapid increase in Merrill Hoge-like litigation.