THE GAME OF RUSSIAN ROULETTE: A PRACTITIONER'S GUIDE TO PROTECTING PROFESSIONAL ATHLETES FROM "THE FINAL HEAD BLOW" DURING THE ESTATE PLANNING PROCESS

Comment

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I. PREFACE

Imagine arriving at an assisted living facility; once you enter the building, you check in at the front desk. After waiting a few minutes, a staff-member escorts you to the end of a long, desolate hallway. When you finally reach your destination, you step into a tiny, individual living quarter; just as you are about to walk up and hug this man you have known and looked up to your entire life, the man looks at you with a blank stare and utters "who are you, and who let you in here?" This is a common occurrence when an individual visits a patient who suffers from a neurodegenerative disease. Unfortunately, this was my typical experience every time I visited my grandfather, a former defensive back in the National Football League (NFL), who passed away on January 23, 2013, after his eight-year battle with Alzheimer's disease.[1]

The first signs of my grandfather's memory impairment began in 2005; he became forgetful and had difficulty remembering newly learned information. At that particular point in time, his doctor opined these issues were merely a product of aging. However, as time passed, his brain functioning continued to deteriorate. Not only had he become increasingly confused and disoriented, but his mood and behavior also changed drastically. Once he started having trouble remembering the names of his own family members, we took him back to his doctor to get a full evaluation. After conducting a series of neurological tests and taking various images of his brain, the doctor explained that my grandfather had fallen victim to the pathological and debilitating effects of head injuries, which he repeatedly sustained throughout his NFL career. The neurologist analogized my grandfather's brain scan to a chewed-up piece of bubble gum. In the weeks before his passing, Alzheimer's disease essentially took over my grandfather's once invincible and powerful body. In the last few weeks of his life, he went from being wheelchair bound to bedridden, from being able to mumble words every now-and-then to unable to communicate, and from being hand-fed by his caregivers to forgetting how to swallow and not eating.

Despite the fact that the NFL knew of several different studies, each of which provided evidence of the link between repeated head injuries and long-term cognitive decline, the NFL remained in denial for several decades. In 2010, after my grandfather's Alzheimer's diagnosis, the NFL finally

1. My grandfather, Val Joe Walker, was drafted in the 1952 NFL Draft and played in the league for five years—four seasons with the Green Bay Packers and one season with the San Francisco 49ers.

acknowledged and accepted that the results of these various studies were, in fact, credible.[2] Had my grandfather known this information long ago—that enduring repeated blows to his head over the course of his professional playing career would enhance his likelihood of suffering from cognitive impairment later in life—he might have decided to put together a comprehensive estate plan to protect himself, our family, and his assets. However, like many professional athletes, he never took the appropriate steps to organize his affairs, so all that remains is uncertainty.

II. INTRODUCTION

It is certainly no secret that anytime an athlete sustains a blow to the head, it is dangerous.[3] Unfortunately, the win-at-all-cost mentality in today's sports world, especially at the professional level, entices many players to ignore their injuries, either by playing through the pain or by playing hurt.[4] There is no denying that it may be of no consequence for players to be tough and shake off certain types of injuries.[5] However, as national headlines blare about head injuries in professional sports, and research continually indicates that recurring head injuries trigger the early onset of neurodegenerative disease, especially among collision- and contact-sport athletes, it is inescapably clear that the risks and long-term consequences associated with sports-related brain injuries demand our undivided attention.[6]

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2. Sam Farmer, *NFL is Taking the Long-Term Impact of Concussions Seriously*, L.A. TIMES (Sept. 11, 2010), http://articles.latimes.com/2010/sep/11/sports/la-sp-nfl-concussions-20100912.

3. *See, e.g.*, Ronda Wendler, *When in Doubt, Sit 'Em Out*, TMC NEWS (Feb. 15, 2010, 11:31 AM), http://tmcnews.org/articles/when-in-doubt-sit-em-out; Michael Austin, *What You're Missing When It Comes to Brain Injuries*, COACH & ATHLETIC DIRECTOR (Jan. 2013), http://www.coachad.com/pages/Issue-to-Internet-January-2013-Brain-Injuries.php ("[A]ny time a player's head is placed in harm's way, a brain injury is a potential result.").

4. *See, e.g.*, Ken Reed, *Concussion Research Can't Be Ignored*, THE SPORT DIG. (Sept. 1, 2011), http://thesportdigest.com/2011/09/concussion-research-cant-be-ignored; *NFL Players' Quotes About Concussions*, FOXNEWS.COM (Nov. 18, 2009), http://www.foxnews.com/wires/2009Nov18/0,4670,FBN HidingConcussionsQuoteBox,00.html ("If you get a little headache or something, you're not going to say anything. This is football, and everyone gets their heads rattled a little bit."[—]Indianapolis Colts safety Jamie Silva).

5. *See* Reed, *supra* note 4.

6. *See id.* "Neurodegenerative diseases are incurable and debilitating conditions that result in progressive degeneration and/or death of nerve cells. This causes problems with movement (called ataxias), or mental functioning (called dementias)." *What is Neurodegenerative Disease?*, JPND RES., www.neuro degenerationresearch.eu/about/what (last visited Feb. 3, 2014) (explaining that when nerve cells become damaged or die off, the human body cannot replace them). The common cause of neurodegenerative diseases is the buildup of proteins in the brain that are abnormal and misfolded. *See* Claudio Soto & Lisbell D. Estrada, *Protein Misfolding and Neurodegeneration*, 65 JAMA NEUROLOGY 184, 184 (2008). When neurons in the brain first start to deteriorate, an individual may experience issues with coordination or have trouble remembering someone's name; as time progresses and more neurons continue to die off, conditions will progressively get worse. *See The Challenge of Neurodegenerative Diseases*, HARV. NEURODISCOVERY CENTER, http://www.neurodiscovery.harvard. edu/challenge/challenge_2.html (last visited Feb. 3, 2014). "In some cases, patients lose the ability to walk independently, think clearly, or generally function in the world." *Id.* The unfortunate reality with most neurodegenerative diseases is that they are ultimately fatal. *See id.*

Over the past few decades, sports have become increasingly popular in the United States; this rise in popularity has, in effect, exposed a sizeable portion of our population to the risk of brain injury.[7] According to the United States Centers for Disease Control and Prevention (CDC), there are approximately 300,000 sports-related traumatic brain injuries each year.[8] Other studies show that approximately 1.6 to 3.8 million athletes in the United States suffer a traumatic brain injury related to participation in sports activities.[9] In today's sports, not only are athletes, at all levels, bigger and faster, but also, they are much stronger than they were in the past.[10] Because athletes can create more power and speed these days, they contact their opponents with a force, unlike ever before, and with harder hits, comes more head trauma.[11] While full-blown concussions are certainly a cause for concern, they are just part of the issue.[12] Recent findings in concussion research indicate "that repetitive small hits to the head can cause as much damage as big blows. . . . They all count."[13]

The prospect of long-term neurological decline among professional athletes is undoubtedly a cause for concern.[14] Such concern is worthy of estate planning professionals' attention.[15] Estate planners must be cognizant of the fact that a growing number of professional athletes suffer from neurodegenerative diseases, and although the patterns of progression of the different diseases may vary among athletes, most neurodegenerative diseases progressively attack the central nervous system and cause long-term, life-altering consequences.[16]

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7. *See, e.g.*, *Sports-Associated Recurrent Brain Injuries – United States*, CENTERS FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/media/pressrel/braini1.htm (last visited Feb. 3, 2014); *see also* KEVIN YOUNG, *Sport and Violence*, *in* HANDBOOK OF SPORTS STUDIES 382, 418 (Jay Coakley & Eric Dunning eds., SAGE ed. 2000) (noting that, while injury risks vary depending on the sport, it is clear that the highest risks are associated with contact sports because physical contact and risk of injury are closely associated).

8. *See, e.g.*, Jean A. Langlois et al., *The Epidemiology and Impact of Traumatic Brain Injury: A Brief Overview*, 21 J. HEAD TRAUMA REHAB. 375, 376 (2006).

9. *See id.* (explaining that this is likely an underestimation because many head injuries actually go unrecognized and therefore, are not reported).

10. *See* Liz Neporent, *Football Head Injuries Increasing Because of Bigger, Faster Players*, ABCNEWS (Jan. 11, 2013), http://abcnews.go.com/Health/football-head-injuries-increasing-bigger-faster-players/story?id=18183735.

11. *See id.*

12. *See* Reed, *supra* note 4.

13. *Id.* (indicating that repeated low-impact hits over a career eventually add up and are enough to cause cumulative damage to brain tissue, which can eventually lead to long-term cognitive problems). Whether athletes sustain one major traumatic head blow, or endure recurring concussive or subconcussive trauma over the course of their career, the nature of collision and contact sports, inevitably exposes players to a greater risk of brain injury and later-life cognitive decline. *See, e.g.*, Robert A. Stern et al., *Long-term Consequences of Repetitive Brain Trauma: Chronic Traumatic Encephalopathy*, 3 PM&R (CONCUSSION SUPPLEMENT) S460, S460–61 (2011).

14. *See* discussion *infra* Part IV.C.

15. *See* discussion *infra* Parts IV.C, V.

16. *See* discussion *infra* Parts III–V; *see also*, *e.g.*, Mark T. Murray, *Traumatic Brain Injury—Issues of Causation*, ST. B. TEX., 28TH ANNUAL ADVANCED PERSONAL INJURY COURSE (July 11–13, 2012), http://www.texasbarcle.com/Materials/Events/11152/144443.pdf (discussing the complexities associated with

The purpose of this article is to bring awareness to the long-term health implications associated with head injuries sustained by athletes who participate in different collision and contact sports. Not only does this article aim to educate estate planning attorneys of the importance of planning for the unfortunate possibility of a client's long-term neurological decline, but it also seeks to offer guidance to those working with professional athlete clients because until now, there has been an absence of direction in this area. Part III of this article provides background information about various collision and contact sports and discusses various professional athletes who have suffered from the effects of traumatic head injuries.[17] Next, Part IV provides information about various neurological studies of former professional athletes, each of which augments the evidence linking head injuries to the prospect of long-term neurological decline.[18] Part V extends the evidence to illustrate the impact that sports-related head injuries have on the estate planning community.[19] Finally, Part VI highlights the fact that current estate planning tools do not adequately address the potential issue that professional athletes face, and it provides questions that practitioners can incorporate into their estate planning strategies to better protect this class of individuals.[20]

III. PROFESSIONAL SPORTS: A BRIEF OVERVIEW

A. Collision Sports

For years, it has been known that collision sports may be closely connected to neurodegeneration.[21] In collision sports, athletes are susceptible to major traumatic injuries that are capable of triggering progressive degeneration of the human brain.[22] Although neurodegenerative diseases have received plenty of media attention in recent years, with suicides by several professional

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traumatic brain injuries while providing context to the discussion on causation and evidentiary standards); MARTIN M. SHENKMAN, ESTATE PLANNING FOR PEOPLE WITH A CHRONIC CONDITION OR DISABILITY 55 (2009) (discussing the importance of planning your estate now to avoid issues later).

17. *See* discussion *infra* Part III. The list of collision and contact sports discussed in Part III is not exhaustive, but rather, it focuses on the sports with the most recent evidence establishing the link between head injuries and long-term neurological decline. *See* discussion *infra* Part III.

18. *See* discussion *infra* Part IV.

19. *See* discussion *infra* Part V.

20. *See* discussion *infra* Part VI.

21. *See* Stern et al., *supra* note 13, at S460. Collision sports are those "in which the athletes hit or collide with each other—often with great force—*on purpose*." ROSEMARIE SCOLARO MOSER, AHEAD OF THE GAME: THE PARENTS' GUIDE TO YOUTH SPORTS CONCUSSION 24 (Univ. Press of N. Eng. 2012); *see also* Stephen G. Rice, *Medical Conditions Affecting Sports Participation*, 121 PEDIATRICS 841, 841 (2008) (indicating that boxing, ice hockey, and football are all collision sports).

22. *See* Stern et al., *supra* note 13, at S460; *see also* Brandon E Gavett et al., *Mild Traumatic Brain Injury: A Risk Factor for Neurodegeneration*, 2 ALZHEIMER'S RES. & THERAPY 18 (2010).

sports stars, neurodegenerative diseases have plagued the professional sports community for decades.[23]

In 1989, boxing great Sugar Ray Robinson died at the age of sixty-seven after a five-year struggle with Alzheimer's disease.[24] Numerous physicians attributed Robinson's condition to the physical damage he suffered throughout his boxing career, namely, countless blows to his head.[25] In 2011, National Hockey League (NHL) star Derek Boogaard died at the age of twenty-eight after a drug and alcohol overdose, and following a posthumous examination, researchers discovered that Boogaard suffered from chronic traumatic encephalopathy (CTE) caused by repeated blows to his head throughout his NHL career.[26] Just recently, in 2012, NFL legend Junior Seau died from a self-inflicted gunshot wound at the age of forty-three; researchers found that he too suffered from CTE.[27]

While there is an inherent risk in every sport, collision sports tend to carry the highest risk of head injuries and long-term brain damage.[28] In collision sports, high-velocity hits and savage blows to opponents are central to the game; as a result, collision sport athletes experience significantly more head impacts over the course of a season and throughout their careers than athletes participating in other sports.[29]

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23. *See, e.g.*, Stern et al., *supra* note 13, at S460; Ryan Van Bibber, *NFL Players at Higher Risk of Death from Alzheimer's, ALS*, SBNATION (Sept. 5, 2012, 4:13 PM), http://www.sbnation.com/2012/9/5/3293992/nfl-concussion-study.

24. *See, e.g.*, LINDA CARROLL & DAVID ROSNER, THE CONCUSSION CRISIS: ANATOMY OF A SILENT EPIDEMIC 194 (Simon & Schuster 2011); James J. Kilpatrick, *An Argument Against Boxing*, *in* BOXING MEDICAL ASPECTS 725, 728 (Friedrich Unterharnscheidt & Julia Taylor-Unterharnscheidt eds., Academic Press 2003). "Alzheimer's disease is a progressive neurologic disease of the brain leading to the irreversible loss of neurons and the loss of intellectual abilities, including memory and reasoning, which become severe enough to impede social or occupational functioning." Markus MacGill, *What is Alzheimer's Disease? Causes, Symptoms and Treatment*, MED. NEWS TODAY, http://www.medicalnewstoday.com/articles/159442.php (last updated Nov. 1, 2013).

25. *See* CARROLL & ROSNER, *supra* note 24, at 194; Kilpatrick, *supra* note 24.

26. *See* John Branch, *Derek Boogaard: A Brain 'Going Bad'*, N.Y. TIMES (Dec. 6, 2011), http://www.nytimes.com/2011/12/06/sports/hockey/derek-boogaard-a-brain-going-bad.html?pagewanted=all (explaining that researchers also found CTE in the brains of two other deceased NHL athletes—Reggie Fleming, 73, and Rick Martin, 59). CTE "is a progressive degenerative disease of the brain found in athletes . . . with a history of repetitive brain trauma, including symptomatic concussions as well as asymptomatic subconcussive hits to the head." *What is CTE?*, B.U. CENTER FOR THE STUDY OF TRAUMATIC ENCEPHALOPATHY, http://www.bu.edu/cste/about/what-is-cte (last visited Feb. 3, 2014). As the brain degenerates, an athlete may experience "memory loss, confusion, impaired judgment, impulse control problems, aggression, depression, and eventually, progressive dementia." *Id.*

27. *See, e.g.*, *Junior Seau Had Brain Disease CTE*, FOX SPORTS, http://msn.foxsports.com/nfl/story/junior-seau-had-brain-disease-cte-study-reveals-011013 (last updated Jan. 10, 2013) (noting that Seau is just one of several deceased ex-NFL players that researchers found to have CTE).

28. *See* MOSER, *supra* note 21, at 24–25.

29. *See id.* at 25; *see also* Stern et al., *supra* note 13, at S460.

1. Football

"There's no doubt in my mind that . . . what I went through as a football player is taking an effect on me today. There's no ifs ands or buts about that. I'm just hoping and praying I can find a way to cut it off at the pass."—Tony Dorsett, Dallas Cowboys Hall of Famer[30]

According to the CDC, "professional football players are three times more likely to die from neurodegenerative brain disorders . . . than the general U.S. population."[31] Although football has been a physical game since the leather-helmet days, today's version of the sport takes physicality to an entirely different level—a level that gives rise to more serious brain injuries than any other sport nationwide.[32] While "football hasn't quite reached the bloodlust status achieved at the ancient Coliseum, the path to [the Super Bowl] is strewn with the broken bodies and damaged brains that result when highly motivated, superbly conditioned athletes collide violently in pursuit of glory."[33]

The human brain is not structured to endure recurring knocks to the head and clashing of helmets.[34] In the NFL, when a player knocks heads with another player, it is unlike any other sports-related collision.[35] Due to the inherently physical nature of the sport, it is unlikely that the risk of brain injury will ever fully be eradicated.[36] In 2009, the House Judiciary Committee called

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30. *Cowboys Hall of Famer Tony Dorsett Suing NFL: 'They Use You Up'*, DALL. MORNING NEWS (Feb. 2, 2012, 4:43 PM), http://www.dallasnews.com/sports/dallas-cowboys/headlines/20120202-cowboys-hall-of-famer-tony-dorsett-suing-nfl-they-use-you-up.ece (quoting Tony Dorsett, a retired tailback for the Dallas Cowboys). According to Dorsett, he has already started forgetting peoples' names, forgetting why he entered a room, and forgetting where he is going while driving. *See id.* While Dorsett is only fifty-seven years old, he is worried that his memory is progressively deteriorating on a daily basis; his biggest fear is that his memory issues will eventually turn into Alzheimer's or another type of dementia. *See id.*

31. Susan Perry, *Will Head Injuries Kill Football?*, MINNPOST (Sept. 17, 2012), http://www.minnpost.com/second-opinion/2012/09/will-head-injuries-kill-football; *see also* Alexandra Sifferlin, *NFL Players Have a Higher Risk of Death from Brain Disease*, TIME (Sept. 6, 2012), http://healthland.time.com/2012/09/06/nfl-players-have-a-higher-risk-of-death-from-brain-disease.

32. *See, e.g.*, Sean Gregory, *The Problem with Football: How to Make It Safer*, TIME (Jan. 28, 2010), http://www.time.com/time/magazine/article/0,9171,1957459,00.html; Christopher Nowinski, *10 Point Plan to Save Football*, SPORTS LEGACY INST. (Oct. 28, 2009), *available at* http://www.sportslegacy.org/v2/policy-2/the-10-point-plan. In October of 2009, Sports Legacy Institute president, Christopher Nowinski, explained the following:

> Football has evolved into a something it was never intended to be. Football collisions may now be more dangerous for the brain than ever. With the combination of bigger, stronger, and faster players and hard-shelled helmets that are often used as a weapon to initiate contact, we've created a type of repetitive trauma to the brain that has never existed before.

Id.

33. Gregory, *supra* note 32.

34. *See id.*

35. *See* Murray, *supra* note 16 ("[U]nlike the blows endured in other sports, the force to the head sustained by NFL players is 98 times more powerful than the force of gravity.").

36. *See* Ben Shpigel, *Football Faces 'Turning Point' on Safety Risk*, N.Y. TIMES (June 20, 2012), http://www.nytimes.com/2012/06/21/sports/football/with-fears-about-safety-football-faces-uncertain-evolution.html?pagewanted=all&_r=0.

upon Dr. Julian E. Bailes to explain the effects of head injuries on NFL players.[37] According to Bailes, after microscopically examining the brains of several deceased NFL athletes, "there is an overwhelming body of scientific evidence that shows an irrefutable link between head trauma in the sport of football and long-term brain disease."[38] While passionate NFL fans may always be ready for the hard hits that are routine during football season, a player's brain may never be.[39]

2. Ice Hockey

"This is about head injuries . . . . This is about the outrageous damage that hits to the head are doing to lives and to a sport. . . . It's the player or family who has to live with years of an unfull life."—Ken Dryden, NHL Hall of Famer and Six-Time Stanley Cup Champion[40]

Another sport that places its participants at a high risk for head injuries is ice hockey.[41] Today's NHL players are bigger, stronger, and faster than before; thus, today's collisions are at significantly greater speeds than ever.[42] "[I]n the United States, hockey offer[s] its own brand of violence—high-flying collisions, head-rattling bodychecks, teeth-loosening fisticuffs—along with a play-through-pain mentality every bit as ingrained as football's."[43] Ice hockey involves continual acceleration and deceleration forces, and in the course of a game, there is always a risk of brain injury when a player is moving at high speeds and collides with another player, another player's equipment, the puck, or the ice.[44] When a hockey player suffers from a concussion, some of the long-term effects are as follows: mood swings, chronic headaches, confusion, disoriented sleeping, and difficulty concentrating.[45]

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37. *See, e.g.*, *House Judiciary Committee Hearing Calls Attention to Long-Term Effects of Head Injury Among NFL Players*, PR NEWSWIRE (Oct. 28, 2009), http://www.prnewswire.com/news-releases/house-judiciary-committee-hearing-calls-attention-to-long-term-effects-of-head-injury-among-nfl-players-67053532.html.

38. *Id.* (stating research results of Dr. Julian E. Bailes, Co-Founder of the Brain Injury Research Institute).

39. *See* Kevin Cook, *Dying to Play*, N.Y. TIMES (Sept. 11, 2012), http://www.nytimes.com/2012/09/12/opinion/head-injuries-in-football.html.

40. Ken Dryden, *Time for the NHL to Get Head Smart*, GRANTLAND (Oct. 6, 2011), http://grantland.com/features/time-nhl-get-head-smart (quoting Ken Dryden, a former goaltender for the Montreal Canadiens).

41. *See, e.g.*, JACK JALLO & CHRISTOPHER M. LOFTUS, NEUROTRAUMA AND CRITICAL CARE OF THE BRAIN 200 (Kay Conerly & Ivy Ip eds., Thieme Med. 2009).

42. *See, e.g.*, Jimmy Golen & Dan Gelston, *Concussions, Head Trauma Have Some Reconsidering Hockey's Quaint On-Ice Code of Justice*, HOCKEY NEWS (May 16, 2011), http://www.thehockeynews.com/articles/40342-Concussions-head-trauma-have-some-reconsidering-hockeys-quaint-onice-code-of-justice.html.

43. CARROLL & ROSNER, *supra* note 24, at 52.

44. *See, e.g.*, Patrick Fairbanks, *Guidelines for Hockey Concussions* (Nov. 2, 2003) (unpublished master level thesis) (on file with USA Hockey).

45. *See id.*

3. Boxing

"'I never did think I had brain damage' . . . . 'I don't want the kids to go through w[h]at I went through.'"—Leon Spinks, Former Professional Boxer[46]

Boxing is a collision sport unlike any other.[47] When two boxers enter the ring, they attempt to batter each other senseless, either by throwing strategic punches at one another or by delivering one knockout blow that renders an opponent unconscious.[48] Because boxers are actively encouraged to deliver that knockout punch, each time they strike their opponent, their main target is the head.[49] Professional boxers have the ability to deliver a blow with a substantial amount of force, a force so great that, upon impact, it can cause the immediate death of an opponent.[50] Boxers can also experience head injuries over time, through repeated impacts to the head and neck region.[51]

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46. Ryan Jaslow, *Boxing, MMA Study Examines Threshold Before Fighters Suffer Brain Damage*, CBSNEWS (Apr. 19, 2012, 11:35 AM), http://www.cbsnews.com/8301-504763_162-57416399-10391704/boxing-mma-study-examines-threshold-before-fighters-suffer-brain-damage (quoting retired professional boxer, Leon Spinks). "Spinks, who famously beat Muhammad Ali in 1978, is no longer the man he once was[.] . . . In recent years he's experienced memory loss." *Id.*

47. *See, e.g.*, THOMAS HAUSER, WINKS AND DAGGERS: AN INSIDE LOOK AT ANOTHER YEAR IN BOXING 3 (2011); MARK COLLINS, MUHAMMAD ALI: THOUGH THE EYES OF THE WORLD (Skyhorse Publ'g 2007). Muhammad Ali, one of the greatest professional boxers of all-time, has been battling Parkinson's disease for the past few decades, a disease that his doctor attributes to the head trauma he sustained over the course of his boxing career. *See, e.g.*, *Doctor Says Ali's Brain Injuries Due to Boxing*, L.A. TIMES (July 16, 1987), http://articles.latimes.com/1987-07-16/sports/sp-4337_1_ muhammad-ali. Parkinson's disease is a neurodegenerative disease that causes vital nerve cells in the brain to malfunction and wither away; Parkinson's occurs after the slow destruction of neurons, primarily those nerve cells that produce dopamine, which is a chemical that transmits messages to the part of an individual's brain that is responsible for controlling movements and coordination. *See What is Parkinson's Disease*, PARKINSON'S DISEASE FOUND., http://www.pdf.org/en/about_pd (last visited Feb. 3, 2014). While Parkinson's has traditionally been considered a movement disorder, most individuals with this disease either experience some form of cognitive impairment or the disease is complicated by dementia. *See, e.g.*, *Cognitive Impairment*, PARKINSON'S DISEASE FOUND., http://www.pdf.org/en/cognitive_impairment_pd (last visited Feb. 3, 2014); Gary J. Kennedy, *Parkinson's Disease and Dementia*, 16 PRIMARY PSYCHIATRY 19, 19 (2009); *see also Parkinson's Disease Dementia*, ALZHEIMER'S ASS'N, http://www.alz.org/dementia/parkinsons-disease-symptoms.asp (last visited Feb. 3, 2014) ("The average time from onset of Parkinson's to developing dementia is about 10 years.").

48. *See* HAUSER, *supra* note 47 (providing a statement from sports writer, Hugh McIlvanney).

49. *See* Antoinette Vacca, *Boxing: Why It Should Be Down for the Count*, 13 SPORTS LAW. J. 207, 216–18 (2006).

50. *See, e.g.*, Gail Vines, *Boxing Takes a Battering*, 110 NEW SCIENTIST 30, 30 (1986) ("[P]rofessional box[ers] can impart a force 100 times greater than gravity.").

51. *Id.*

B. Contact Sports

Despite the fact that collision sports, such as football, hockey, and boxing, are associated with a greater incidence of injury to the central nervous system, athletes participating in contact sports face a high risk for head injury as well.[52]

1. Soccer

"'I am living with a brain injury. Don't be like me' . . . . 'Every minute of every day, I have a headache. It's the invisible nightmare.'"
—Bryan Namoff, Retired MLS Player[53]

Much like football and hockey, soccer is a fast-paced sport that is associated with a risk of concussive and subconcussive head injuries.[54] In soccer, most concussive head injuries occur through the following types of contact: head-to-head impacts; head-to-body parts impacts—elbows, fists, arms, knees, or feet; head-to-ground impacts; head-to-goalpost impacts; and head-to-soccer ball impacts.[55] While heading a soccer ball is undoubtedly a cause of concussion among players, recent research indicates that repeated headers can cause long-term damage to the brain.[56] "When players hit the ball with their heads, it's not an impact that breaks nerve fibers in the brain. But repetitive heading could set off responses that lead to brain cell degeneration."[57]

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52. *See, e.g.*, MOSER, *supra* note 21, at 24 ("A contact sport . . . is one in which the athletes *may* touch or make contact with one another.") (emphasis added); Rice, *supra* note 21, at 841 ("In contact sports[,] . . . athletes routinely make contact with each other or with inanimate objects but usually with less force than in collision sports.").

53. Steven Goff, *Bryan Namoff Files $12 Million Lawsuit Against D.C. United, Claiming Medical Negligence Involving Career-Ending Concussion in 2009 MLS Match*, WASH. POST (Aug. 29, 2012, 12:10 PM ET), http://www.washingtonpost.com/blogs/soccer-insider/post/bryan-namoff-files-12-million-lawsuit-against-dc-united-claiming-medical-negligence-involving-career-ending-concussion-in-2009-mls-match/2012/08/29/786b86c6-f1db-11e1-adc6-87dfa8eff430_blog.html (quoting Bryan Namoff, a former defender for the D.C. United).

54. *See, e.g.*, Frank M. Webbe & Christine M. Salinas, *When Science and Politics Conflict: The Case of Soccer Heading in Adults and Children*, *in* THE HANDBOOK OF SPORT NEUROPSYCHOLOGY 275, 278–80 (Springer 2011).

55. *Id.* (citing Barry P. Boden et al., *Concussion Incidence in Elite College Soccer Players*, 26 AM. J. SPORTS MED. 238, 238 (1998)). "Heading is a technique in which soccer players use their unprotected heads to stop or redirect the ball. A headed ball travels at high velocity both before and after impact." Jamie Lampros, *Concussions Cause Concerns for Girl Soccer Players*, STANDARD-EXAMINER (Oct. 8, 2012, 8:38 AM), http://www.standard.net/stories/2012/10/07/concussions-cause-concerns-girl-soccer-players.

56. *See* Lampros, *supra* note 55.

57. *'Heading' a Soccer Ball Could Cause Brain Injury: Study*, CTV NEWS (Nov. 29, 2011, 5:20 PM EST) [hereinafter CTV NEWS], http://www.ctvnews.ca/heading-a-soccer-ball-could-cause-brain-injury-study-1.732735.

2. Basketball

"NBA players . . . 'get hit, quite a bit. They may be mild[,] . . . but certain brains are susceptible to trauma more than others and to . . . monitor brain health over the course of the season and a career is something that we have to do regardless of the level of impact.'"—Dr. Jeffrey Kutcher, University of Michigan Neurologist[58]

Because basketball is not a collision sport, people rarely associate head trauma with this sport; however, head injuries and concussions occur more often during basketball than people realize.[59] Although basketball players do not suffer from the same types of repetitive blows as collision sport athletes, head impacts are a regular part of the game.[60] On the basketball court, players can sustain a blow to their head by encountering a player's elbow, arm, knee, or the court.[61]

IV. ESTABLISHING THE LINK: CONNECTING SPORTS-RELATED HEAD INJURIES TO LONG-TERM COGNITIVE DECLINE—THE EVIDENCE IN PROFESSIONAL ATHLETES

A. Early Clues: The "Punch-Drunk" Boxer

For nearly a century, "it has been known that the repetitive brain trauma associated with boxing [can] produce a progressive neurological deterioration."[62] Doctors were studying brain damage in boxers as far back as the 1920s; in fact, in 1928, Harrison Martland, a pathologist from New Jersey, used the term "punch-drunk syndrome" to describe a condition in boxers caused by years of repeated head impacts in the ring.[63] According to Martland, as a boxer's brain progressively deteriorates, he will experience a collection of the following symptoms: impaired mental functioning, slurred speech, tremors, and slowed movement.[64] A few years after its initial discovery, the term

58. Henry Abbott & Beckley Mason, *Working Bodies: NBA Head Injuries*, ESPN (Jan. 14, 2013, 1:12 PM ET), http://espn.go.com/blog/truehoop/post/_/id/53428/working-bodies-nba-head-injuries.

59. *See id.*

60. *See id.*

61. *See id.*; *see also* MOSER, *supra* note 21, at 25 ("[P]layers routinely slip, fall, trip, or 'accidentally' collide with each other all the time.").

62. Ann C. McKee et al., *Chronic Traumatic Encephalopathy in Athletes: Progressive Tauopathy Following Repetitive Head Injury*, 68 J. NEUROPATHOLOGY & EXPERIMENTAL NEUROLOGY 709, 709 (July 2009).

63. *See, e.g.*, Stern et al., *supra* note 13, at S461; *Chronic Traumatic Encephalopathy*, SPORTS LEGACY INST., http://www.sportslegacy.org/research/cte (last visited Feb. 3, 2014) (noting that CTE is the preferred term today); Tim Dahlberg, *Concussions in Boxing: Study Looks for Answers About Head Injuries and Fighting*, HUFFINGTON POST (Feb. 15, 2012, 5:19 PM ET), http://www.huffingtonpost.com/2012/02/16/boxing-concussions-new-study-effects-head-trauma_n_1281909.html (explaining that, during that time period, fans described boxers as "'cuckoo,' 'goofy,' 'cutting paper dolls,' or 'slug nutty.'").

64. *See Chronic Traumatic Encephalopathy*, *supra* note 63; Vines, *supra* note 50, at 30.

dementia pugilistica, literally meaning dementia of a fighter, was introduced to describe punch-drunk syndrome.[65]

B. Connecting the Dots: Recent Findings

Within the past few years, some of our nation's most recognized neurological experts have conducted clinical and neuropathological studies to learn more about the potential long-term consequences associated with repeated sports-related head trauma.[66]

> Head injuries have become an overwhelming fact of life in sports. The immensity of the number, the prominence of the names, the life-altering impact on their lives, and, more disturbing, if that's possible, the now sheer *routineness* of their occurrence. . . . Careers and lives of players, we know now, have been shortened, diminished, snuffed out by head injuries. What once had seemed debatable, deniable, spin-able, now is not. What once had been ignored[,] now is obvious.[67]

Although researchers have yet to discover why some athletes develop neurodegenerative diseases while others do not, they "do know that multiple studies have found connections between head injuries and various neurological disorders[,] . . . memory problems, and cognitive impairment."[68]

1. Initial Discovery of CTE in American Football Players

In September 2002, shortly after arriving at the Allegheny County coroner's office, Dr. Bennet Omalu received his daily assignment: Dr. Omalu was to perform an autopsy on former NFL star, Mike Webster, who passed away at the premature age of fifty.[69] Webster's death was believed to have been the result of a heart attack.[70] That was until Dr. Omalu began examining

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65. *See, e.g.*, Stern et al., *supra* note 13, at S460; Michael Saulle & Brian D. Greenwald, *Chronic Traumatic Encephalopathy: A Review*, 2012 REHABILITATION RES. & PRAC. (SPECIAL ISSUE), at 7.

66. *See, e.g.*, Stern et al., *supra* note 13, at S465; Michelle L. Modery, *Injury Time-Out: Justifying Workers' Compensation Awards to Retired Athletes with Concussion-Caused Dementia*, 84 TEMP. L. REV. 247, 263 (2011); Daniel J. Kain, *"It's Just a Concussion:" The National Football League's Denial of a Causal Link Between Multiple Concussions and Later-Life Cognitive Decline*, 40 RUTGERS L.J. 697, 698 (2009).

67. Dryden, *supra* note 40.

68. CHRISTOPHER NOWINSKI & JESSE VENTURA, HEAD GAMES: FOOTBALL'S CONCUSSION CRISIS FROM THE NFL TO YOUTH LEAGUES 64 (2006). *See also*, *e.g.*, Ken Belson, *Study Bolsters Link Between Routine Hits and Brain Disease*, N.Y. TIMES (Dec. 3, 2012), http://www.nytimes.com/2012/12/03/sports/study-bolsters-link-between-routine-hits-to-head-and-long-term-brain-disease.html?_r=0.

69. *See* Jeanne Marie Laskas, *Game Brain*, GQ (Oct. 2009), http://www.gq.com/sports/profiles/200909/nfl-players-brain-dementia-study-memory-concussions?currentPage=1. For fifteen seasons, NFL Hall of Famer Mike Webster was a center for the Pittsburgh Steelers. *See id.*

70. *See id.* (explaining that after opening Webster's chest and ribs, Dr. Omalu removed his heart; after examining it, Dr. Omalu determined that everything he found was that of which was to be expected of someone who was thought to have died from a heart attack).

Mike Webster's brain.[71] After initially removing Webster's brain from his skull, Dr. Omalu just sat there, staring at it, wondering how such a huge athletic specimen could wind up becoming so crazy in the head.[72] All that Dr. Omalu could think about was football and brain trauma, much like the type of brain trauma that had long been linked to boxers, dementia pugilistica.[73] "Omalu figured if chronic bashing of the head could destroy a boxer's brain, couldn't it also destroy a football player's brain? Could that be what made Mike Webster crazy?"[74]

At first glance, Dr. Omalu described Webster's brain as utterly normal, consisting of regular folds of gray matter; it had not turned to mush, it had no apparent contusions, and it had not shrunk in size, which was a typical indicator of Alzheimer's.[75] Dr. Omalu then looked at the CT and MRI scans, and everything appeared normal.[76] However, due to Webster's eccentric behavior towards the end of his life, Dr. Omalu figured that "[t]here had to be an answer. People don't go crazy for no reason."[77]

After months of in-depth, microscopic examinations, Dr. Omalu discovered the following:

> Brown and red splotches. All over the place. Large accumulations of tau proteins. Tau was kind of like sludge, clogging up the works, killing cells in regions responsible for mood, emotions, and executive functioning. This was why Mike Webster was crazy. . . . This was a disease, or a form of it, that no one had ever seen before.[78]

Dr. Omalu called the disease CTE.[79] There was finally "scientific evidence that the kind of repeated blows to the head sustained in football could cause severe, debilitating brain damage."[80]

In 2005, Dr. Omalu found his second case of CTE, after he thoroughly examined the brain of Terry Long, a former NFL guard, who died at the age of

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71. *See id.*

72. *See id.* (describing some of the outrageous things that Webster did after he retired from the NFL: urinating in his own oven; applying Super Glue to his rotting teeth; and zapping himself with his Taser, either to ease his back pain or to knock himself unconscious to get some sleep).

73. *See id.* "The leap in logic was hardly extreme. . . . 'Punch-drunk syndrome,' they called it in boxers. The clinical picture was somewhat like Mike Webster's: severe dementia—delusion, paranoia, explosive behavior, loss of memory—caused by repeated blows to the head." *Id.*

74. *Id.*

75. *See id.*

76. *See id.*

77. *Id.*

78. *Id.*

79. *See id.*

80. *Id.* Dr. Omalu thought NFL doctors would use his findings to attempt to eliminate the problem; however, their reaction was just the opposite. *See id.* They claimed that Dr. Omalu misrepresented his work and that he was flawed and misunderstood. *See id.*

forty-five, after he drank antifreeze.[81] Dr. Omalu utilized the same testing technique on Long that he used on Webster and he reached a similar conclusion.[82] Dr. Omalu explained that Terry Long's brain did not look the way that a forty-five-year-old person's brain should look, rather it "look[ed] more like a 90-year-old brain with advanced Alzheimer's."[83]

2. University of North Carolina, Chapel Hill, Study

In 2005, Dr. Kevin M. Guskiewicz and his colleagues at the University of North Carolina, Chapel Hill, published a study based on their ongoing investigation of the link between head injuries and long-term cognitive degeneration in a group of retired professional football players.[84] The researchers examined the former players by utilizing two different self-report questionnaires.[85] "The general health questionnaire was first sent to all living members of the National Football League Retired Player's Association (n = 3683) through the Center for the Study of Retired Athletes."[86] Of the 3,683 questionnaires that the researchers mailed out, they received responses from 2,552 former players.[87]

Dr. Guskiewicz and his research team found that over sixty percent of the respondents denoted that they sustained at least one concussion while playing professionally, and twenty-four percent indicated that they actually sustained three or more.[88] When asked to assess the long-term effects of these injuries, "[o]f the retirees who sustained at least one concussion, 266 (17.6%) reported that they perceived the injury to have had a permanent effect on their thinking and memory skills as they have gotten older."[89] According to Dr. Guskiewicz and his staff, compared to the rest of the general male population, the prevalence of Alzheimer's disease was actually greater among those who participated in the study; in fact, the study indicated that retired NFL players face a thirty-seven percent higher risk of developing this disease than similarly

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81. *See id.* Terry Long played offensive lineman for the Pittsburgh Steelers for eight years. *See* Stephen Roberson, *Local Doctor Studies Long-Lasting Effects of Concussions in NFL*, RECORDNET.COM (Mar. 2, 2008, 12:03 AM), http://www.recordnet.com/apps/pbcs.dll/article?AID=/20080302/A_SPORTS/803020327.

82. *See* Laskas, *supra* note 69.

83. *Id.*

84. *See* Kevin M. Guskiewicz et al., *Association Between Recurrent Concussion and Late-Life Cognitive Impairment in Retired Professional Football Players*, 57 NEUROSURGERY 719, 720 (2005).

85. *See id.* (noting that all of the retired professional football players who participated in the study played for at least two seasons).

86. *Id.* The questionnaire asked about different "neurological conditions that the retired player experienced during and after his football career. It included questions about the number of concussions sustained during their professional football career (concussion history) and the prevalence of diagnosed medical conditions such as depression, Parkinson's disease, [and Alzheimer's disease]." *Id.*

87. *See id.* at 721 ("The age of the respondents averaged 53.8 (±13.4) years, with an average professional football playing career of 6.6 (±3.6) years.").

88. *See id.*

89. *Id.*

aged American men.[90] While the clinical samples that they studied were relatively small, the researchers explained that their findings suggest that repeated concussions, brought on by recurrent blows to the brain, substantially increase the likelihood that NFL players will experience gradual cognitive decline, long-term memory impairment, and Alzheimer's.[91]

3. University of Michigan Study

In 2008, "the [NFL] and its Player Care Foundation sought the expertise of several distinguished researchers at the University of Michigan to conduct a scientifically rigorous survey of retired players."[92] In light of growing national concern surrounding brain injuries in football players, the NFL determined that it needed to learn more about the health and well-being of its former players.[93] Researchers conducted the study through a series of telephone interviews with a stratified random sample of 1,063 NFL retirees.[94] While the researchers asked the survey participants questions across a range of different topics, a large portion of the survey was specifically focused on assessing the current mental health of each of these former players.[95]

Dementia and other memory-related diseases are typically more difficult to diagnose in surveys because diminished cognitive functions tend to directly affect the participant's ability to respond to questions; thus, if a player was unable to answer interview questions by himself, the researcher would obtain information about the retiree by asking a proxy reporter of the player.[96] The researchers found that, of NFL retirees between the ages of thirty and forty-nine, the number of participants who responded affirmatively that they had been medically diagnosed with Alzheimer's or a similar type of memory-related disease was nineteen times higher than the rate in the general male population.[97] Of retirees aged fifty years and above, the number of affirmative responses was five times the national average.[98] This study's "findings fall into step with [the] several recent independent studies regarding [NFL] players and the effects of

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90. *See id.*

91. *Id.* at 722.

92. David R. Weir et al., *Study of Retired Professional Football Players*, U. MICH. INST. FOR SOC. RES. (Sept. 10, 2009), http://www.ns.umich.edu/Releases/2009/Sep09/FinalReport.pdf; *see also* Alan Schwarz, *Dementia Risk Seen in Players in N.F.L. Study*, N.Y. TIMES (Sept. 29, 2009), http://www.nytimes.com/2009/09/30/sports/football/30dementia.html?pagewanted=all&_r=0 ("The [NFL] has long denied the existence of reliable data about cognitive decline among its players. These numbers would become the league's first public affirmation of any connection.").

93. *See* Weir et al., *supra* note 92.

94. *See id.* Researchers asked the survey participants questions across a range of different topics; a large portion of the survey was specifically focused on assessing the current mental health of each of the former players. *See id.*

95. *See id.*

96. *See id.*

97. *See id.*

98. *See id.*

their occupational head injuries."[99] The findings only reinforce what other researchers and experts have previously found—a connection between playing professional football and the heightened prevalence of long-term cognitive decline.[100]

4. Centers for Disease Control and Prevention Study

Just hours before the opening game of the 2012 season, the first-ever government study hit the NFL with a new set of sobering statistics, which only further contributed to the body of evidence linking football-related head injuries to the development of neurological problems later in life.[101] In the study, CDC researchers analyzed the death certificates of 3,439 former NFL players, comparing the information with standardized mortality data of the general U.S. population.[102]

After completing their investigation, the team of experts found that professional football players are three times more likely to die from a neurodegenerative disease than the rest of the general U.S. population.[103] When they considered specific types of neurodegenerative diseases, they determined that NFL players were at the greatest risk of death from Alzheimer's; the players were dying from Alzheimer's at a rate that was four times greater than that of the general public.[104] The researchers also analyzed neurodegenerative mortality based on each player's position, and they determined that speed position players—wide receivers, quarterbacks, and running backs—were three times more likely to die from neurodegenerative diseases than non-speed position players.[105] According to Everett Lehman, a co-author of the study, the study's results "are consistent with recent studies suggesting an increased risk of neurodegenerative disease among football players."[106]

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99. Schwarz, *supra* note 92.

100. *See, e.g.*, *id.*

101. *See, e.g.*, Janice Lloyd & Gary Mihoces, *Ex-NFL Players More Likely to Die of Alzheimer's*, USA TODAY (Sept. 5, 2012, 5:45 PM), http://usatoday30.usatoday.com/sports/football/nfl/story/2012-09-05/medical-research-30-million-NIH/57600616/1; Nadia Kounang, *Football Players More Likely to Develop Neurodegenerative Disease, Study Finds*, CNN (Sept. 6, 2012, 12:35 PM EDT), http://www.cnn.com/2012/09/05/health/nfl-neurodegenerative-disease.

102. *See, e.g.*, Everett J. Lehman et al., *Neurodegenerative Causes of Death Among Retired National Football League Players*, 79 NEUROLOGY 1, 2 (2012) ("[T]he cohort includes 3,439 NFL players identified by a pension fund database of vested players with at least 5 credited playing seasons between 1959 and 1988.").

103. *See id.*

104. *See id.*

105. *See* Kounang, *supra* note 101.

106. Lloyd & Mihoces, *supra* note 101.

5. Boston University Study

Since its inception, Boston University's Center for the Study of Traumatic Encephalopathy (CSTE) has collected, dissected, and researched the brain tissue of deceased athletes who experienced mild traumatic brain injuries repetitively throughout their careers.[107] Shortly after the latest NFL tragedy, the murder-suicide of linebacker Jovan Belcher, CSTE researchers published a study they conducted; the publication is considered the largest case series study of CTE to date.[108] In this study, researchers extensively examined and evaluated the brains of eighty-five deceased individuals, including thirty-five former professional football players, five former professional hockey players, and seven former professional boxers.[109]

Of the thirty-five professional football players' brains that were examined, *only one* of the brains showed no signs of CTE.[110] In other words, a staggering ninety-seven percent of former NFL players had some degree of brain trauma.[111] Of the five professional hockey players, four showed signs of CTE.[112] Of the seven professional boxers, all seven suffered from advanced stages of CTE.[113] Researchers also determined that for each of the former football players, "the stage of [CTE] correlated with increased duration of football play, survival after football[,] and age at death."[114] According to CSTE researchers, this study clearly indicates that repetitive brain trauma can result in both severe and devastating long-term consequences.[115]

6. UCLA Pilot Study

In January 2013, UCLA researchers identified signs of CTE in the brains of five living NFL players; previously, researchers could only discover CTE

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107. *See* Art Jahnke, *Looking for Trouble*, BOSTONIA, Fall 2012, at 61–62, *available at* http://www.bu.edu/bostonia/campaign12/head-trauma/head-trauma.pdf. "The CSTE was created in 2008 as a collaborative venture between Boston University School of Medicine and Sports Legacy Institute." *About*, B.U. CENTER FOR THE STUDY OF TRAUMATIC ENCEPHALOPATHY, http://www.bu.edu/cste/about (last visited Feb. 3, 2014).

108. *See* Sydney Lupkin, *CTE, a Degenerative Brain Disease, Found in 34 Pro Football Players*, ABCNEWS (Dec. 3, 2012), http://abcnews.go.com/Health/cte-degenerative-brain-disease-found-34-pro-football/story?id=17869457#.UNOq1aWHfww.

109. *See* Ann C. McKee et al., *The Spectrum of Disease in Chronic Traumatic Encephalopathy*, 136 BRAIN 43, 49–51 (2013) (explaining that the researchers examined eighty-five brains from CSTE's brain bank; the brains were those of deceased military veterans, former athletes, and other individuals who had experienced repeated mild-traumatic brain injuries).

110. *See id.* at 59 (noting that the individual who did not show signs of CTE was just twenty-six years old).

111. *See id.*

112. *See id.* (noting that the individual who did not show signs of CTE was just twenty years old).

113. *See id.* at 49–51.

114. *Id.* at 44.

115. *See id.*

after death.[116] The researchers used a brain-imaging device to scan each player's brain, and in all five brain scans, the images showed positive results for tau protein, which is the abnormal protein that causes CTE.[117] According to the researchers, in each of the players' brains, the tau accumulated in the portion of the brain that controls memory and regulates emotions.[118] Although the findings from this study are preliminary, they "could open up new areas for CTE research—and provide additional fuel for the controversy surrounding it."[119]

C. A Cause for Concern

Even though research is still in its infancy, the past decade of studies, by some of our country's foremost experts, has substantially augmented the nationwide "concern about collisions and subsequent brain injuries in sports—and the dire effects that may show up only many years later."[120] Through continued study and investigation, researchers hope to learn more about the nuances of some of these diseases and strive to address many of the unanswered questions.[121] Despite the ambiguities, it is indisputable that the risks and the long-term effects of sports-related head injuries are real, and unfortunately, there is no indication that these risks will ever be eliminated.[122] While this problem has grabbed the attention of athletes, sports officials, and others around the country, it has yet to raise the eyebrows of estate planning professionals.[123]

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116. *See, e.g.*, Steve Fainaru & Mark Fainaru-Wada, *CTE Found in Living Ex-NFL Players*, ESPN (Jan. 22, 2013, 4:19 PM ET), http://espn.go.com/espn/otl/story/_/id/8867972/ucla-study-finds-signs-cte-living-former-nfl-players-first-time.

117. *See id.* (noting that the brain-imaging tool scanned the following players' brains: "Fred McNeill, a 59-year-old former Vikings linebacker; Wayne Clark, a 64-year-old former backup quarterback; and three other unidentified players: a 73-year-old former guard; a 50-year-old former defensive lineman; and a 45-year-old former center."). Going into the study, Wayne Clark explained that it never crossed his mind that his brain scan would show signs of CTE because he was exposed to just a limited amount of contact during his five-year NFL career. *See id.* After researchers explained to him that his brain showed signs of CTE, Clark reacted with interest; he explained that he truly did not think he had anything going on other than those issues that are typically associated with aging. *See id.*

118. *See id.* (explaining that the tau protein concentration formed "a pattern consistent with the distribution of tau in CTE brains that [had] been studied following autopsy.").

119. *Id.*

120. Anne Eisenberg, *Early Detection for Brain Injuries*, N.Y. TIMES (Aug. 26, 2012), http://www.nytimes.com/2012/08/26/business/sensors-for-brain-injuries-may-help-future-athletes.html?_r=0.

121. *See generally* Stern et al., *supra* note 13, at S466 (noting the need for further research).

122. *See, e.g.*, Daniel H. Daneshvar et al., *The Epidemiology of Sport-Related Concussion*, 30 CLINICS IN SPORTS MED. 14 (2011) (emphasizing that concussive and subconcussive brain injuries may never entirely disappear from sports); Shpigel, *supra* note 36; CTV NEWS, *supra* note 57; *see also* Dave Siebert, *Details Behind Junior Seau's Diagnosis of Chronic Traumatic Encephalopathy (CTE)*, BLEACHER REP. (Jan. 10, 2013, 11:15 PM EST), http://playerpop.com/mention/46540/details-behind-junior-seaus-diagnosis-of-chronic-traumatic-encephalopathy-cte.

123. *See* Peter King, *Head Trauma in Football: A Special Report*, MMQB (Oct. 22, 2013), http://mmqb.si.com/2013/10/22/nfl-concussions-head-trauma-special-report/3; *see also* Interview with Gerry W. Beyer, Governor Preston E. Smith Regents Professor of Law, Tex. Tech Univ. Sch. of Law, in Lubbock,

V. SPORTS-RELATED HEAD INJURIES EXTEND BEYOND THE ATHLETIC ARENA: ESTATE PLANNING CONSIDERATIONS

Traditionally, society has associated neurodegenerative diseases with older individuals because the vast majority of these diseases affect people who are approaching the later stages of their lives.[124] However, studies make it abundantly clear that even seemingly minor sports-related head injuries can set in motion a cascade of irreversible, neurodegenerative processes much earlier than expected.[125] On one end of the spectrum, there are twenty and forty-year-olds who are taking their own lives, and on the opposite end, there are seventy and eighty-year-olds who are operating without any issues.[126] Thus, neurodegenerative diseases present a unique and complex challenge; there is no way of truly knowing if, and when, an athlete will develop some type of neurodegenerative disease.[127] Because many of these diseases can progressively cripple an athlete's cognitive abilities, this issue mandates the immediate and undivided attention of estate planning professionals.[128]

Generally, estate planning professionals take different actions depending on what they anticipate their client's future will be and what the normal progression of life is.[129] When you are dealing with a client who has endured numerous years of concussive and subconcussive blows to the head, that client will not have a normal progression.[130] Accordingly, it is imperative for estate planners to recognize this issue, to understand the host of implications it can have on the entire estate planning process, and to adjust their planning strategies to address this issue before their client's "cognitive deterioration reaches a level where [planning] options begin to be foreclosed."[131]

Tex. (Jan. 15, 2013) [hereinafter Beyer Interview] (noting that currently, estate planning professionals do not pay attention to this issue).

124. *See, e.g.*, AKHLAQ A. FAROOQUI, NEUROCHEMICAL ASPECTS OF NEUROTRAUMATIC AND NEURODEGENERATIVE DISEASES 393 (2010).

125. *See id.*; *see also* Stern et al., *supra* note 13, at S466; NOWINSKI & VENTURA, *supra* note 68, at 64.

126. *See* discussion *supra* Part III; s*ee also* Beyer Interview, *supra* note 123 (explaining that the findings from the past decade of studies represent an enormous change because now, there is concrete evidence indicating that younger individuals suffer from the types of problems that have ordinarily been associated with the older population).

127. *See generally* Khoi D. Than, *Brain Diseases*, *in* 1 ENCYCLOPEDIA OF GLOBAL HEALTH 292, 292–94 (Yawei Zhang ed. 2008) (explaining that there is so much variability among individuals in how neurodegenerative diseases progress); *see also* Serge Przedborski, *Neurodegeneration*, *in* ch. 17 NEUROIMMUNE PHARMACOLOGY 229, 229–34 (Tsuneya Ikezu & Howard E. Gendelman eds., 2008) (discussing how these diseases manifest differently in each individual).

128. *See* discussion *supra* Part III (explaining some of the different types of neurodegenerative diseases and explaining how they can impair an individual's cognitive ability and motor functioning).

129. *See* Beyer Interview, *supra* note 123.

130. *Id.* (indicating that normally you would not address this type of issue with a twenty or thirty-year-old client because you would not associate impaired neurodegenerative processes with an individual who is that age; however, because studies and statistics show that this is possible, it is certainly worth planning for something in which you normally would not).

131. SHENKMAN, *supra* note 16; *see also* Beyer Interview, *supra* note 123 (explaining that this is an extremely important topic for the estate planning community and emphasizing that it needs to be addressed).

VI. FAIL TO PLAN OR PLAN TO FAIL?: WHAT ESTATE PLANNING PRACTITIONERS SHOULD KNOW ABOUT PLANNING FOR THE POSSIBILITY OF A PREMATURE DEMISE

Currently, estate planners do not address this problem—proof being that estate planning guides and forms never ask any questions pertaining to this particular issue.[132] Without questions that specifically address this issue, there is no way to bring this type of information to light; thus, estate planners will never know if they need to provide protections for a client in preparing an estate plan.[133] To ascertain whether a client is at risk of suffering from long-term cognitive decline, a practitioner must ask questions and use the responses to fully understand a client's objectives and to plan accordingly.[134]

A. You Will Never Know, Unless You Ask: Questions Practitioners Should Include in Their Estate Planning Strategies

Whether an estate planning professional collects information about clients through an estate planning questionnaire or gathers the information during a face-to-face consultation, there are certain questions that must be asked before even thinking about preparing an estate plan.[135] Often times, "[a] client may not reveal certain important information merely because the attorney did not ask; the client may not realize the material's significance."[136] Potential problems can be avoided if practitioners take the time to incorporate various questions, such as the following, into the information-gathering stage of the estate planning process:

- Have you ever participated, or are you currently engaged, in a collision or contact sport? (Check all that apply and indicate the number of years you engaged in this activity and the level at which you played)
    - Football?
    - Ice Hockey?

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132. *See, e.g.*, HENRY J. LISCHER JR. ET AL., 16 WEST'S LEGAL FORMS: ESTATE PLANNING § 1.5 (4th ed. 2012); 7 HERBERT S. KENDRICK, TEXAS TRANSACTION GUIDE: LEGAL FORMS § 40.200-211 (Matthew Bender 2012); DONALD J. MALOUF ET AL., 11 WEST'S TEXAS FORMS: ESTATE PLANNING § 1.5 (3d ed. 2012); 12 TEXAS FORMS LEGAL AND BUSINESS § 24:104 (Jason Pariseau ed. 2012); 2 EDWARD F. KOREN, ESTATE TAX AND PERSONAL FINANCIAL PLANNING § 15:11 (2012) (providing a general estate planning questionnaire for practitioners around the country to utilize in the initial stages of estate planning).

133. *See supra* notes 124–32 and accompanying text.

134. *See* discussion *infra* Part VI.A–B.

135. *See, e.g.*, Holly J. Gilman & Tina R. Green, *The Client Interview: Estate Planning*, ST. B. TEX., ESTATE PLANNING AND PROBATE 101 COURSE (June 7, 2011), http://www.texasbarcle.com/Materials/Events/9327/138058.pdf (discussing the two most common methods that practitioners use to compile information about their client before drafting an estate plan).

136. Gerry W. Beyer, *Avoiding the Estate Planning "Blue Screen of Death"—Common Non-Tax Errors and How to Prevent Them*, 1 EST. PLAN. & COMMUNITY PROP. L.J. 61, 79–80 (2008) [hereinafter Beyer, *Blue Screen*].

  - Boxing?
  - Soccer?
  - Basketball?
  - Rugby?
  - Lacrosse?
  - Martial Arts?
  - Water Polo?
  - Rodeo?
  - Wrestling?[137]
- Please list any and all other sports you have participated in or you are currently participating in.[138]
- Have you ever suffered a head injury while participating in any of the above-mentioned sports?
- How many head injuries have you suffered while participating in any of the above-mentioned sports?
- Have you ever been unconscious because of a sports-related head injury?
- Have you ever had confusion because of a sports-related head injury?
- Have you ever suffered headaches because of a sports-related head injury?[139]

Failing to ask these questions, or similar questions, not only reduces the chances of uncovering valuable information for planning a client's estate, but it also opens the door to future claims against a client's estate.[140]

B. Red Flags: Why Practitioners Must Be Mindful of Affirmative Responses

If a client provides an affirmative response to any of the foregoing questions, or those alike, a practitioner needs to inform the client that he is at an enhanced risk of developing a neurodegenerative disease because he endured

137. *See generally* Rice, *supra* note 21, at 841 (providing a more comprehensive breakdown of the categorization of each particular sport). The reason this list is longer than the list of collision and contact sports discussed in Part III is because the list in Part III solely focuses on the sports with the most recent evidence establishing the link between head injuries and long-term neurological decline. *See* discussion *supra* Part III.

138. This comment specifically focuses on collision- and contact-sport athletes because evidence indicates that individuals who participate in these types of sports face a greater risk of head trauma. *See* discussion *supra* Part III. While this particular question addresses sports outside of the scope of this comment, it is still important for practitioners to inquire about participation in other types of sports because an athlete can suffer a head injury in a sport that may not technically be classified as either a collision sport or contact sport. *See* MOSER, *supra* note 21, at 24–25 (explaining that head injuries can also occur in limited-contact sports, such as baseball, cycling, softball, and volleyball and can sometimes even occur in noncontact sports, such as powerlifting, dance, and bodybuilding).

139. This list of questions is not exhaustive, but it is a good place for practitioners to begin.

140. *See* Beyer, *Blue Screen*, *supra* note 136. If a client does not have a plan in place to protect against the potential for progressive mental decline, it increases the chances of the following types of claims: lack of capacity; undue influence; fraud; inheritance theft; and caregiver theft. *See id.*

recurring, sports-related head impacts over the course of his career.[141] Not only should practitioners advise clients of this risk, but practitioners must also be heedful of any apparent signs of neurological problems.[142] Because there is not a conclusive set of indicators to explain if a client will suffer from a form of mental impairment, a practitioner should understand that it is "often difficult to determine whether [a client] may lack capacity or is just eccentric."[143]

If practitioners do not detect any abnormal client conduct or any behavior that warrants immediate concern, practitioners must then provide clients with information about the various symptoms connected with the different neurodegenerative diseases, as well as advise clients of the importance of being watchful for these signs.[144] While clients must pay attention to any changes in their own behavior or conduct, the client's family members, friends, and colleagues can also play integral roles in detecting a client's decline in cognitive functioning.[145] However, it is important to remember that, often times, when an individual is around someone on a regular basis, changes in behavior and mental functioning may be less noticeable.[146] Thus, estate planners may want to encourage their clients to visit a neurologist annually to determine if they exhibit any changes over longer periods of time.[147]

Once estate planners complete the above-mentioned steps, estate planners must offer clients a list of adequate estate planning protections and inform them of the benefits of each planning strategy.[148] For example, practitioners should explain how early planning "ensures the athlete that unnecessary burdens are not placed on his or her family should a catastrophic event occur. It provides the athlete with the security of knowing that his or her immediate and extended

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141. *See supra* Part VI.A; *see also* discussion *supra* Part III. It is crucial for a practitioner to understand that initially explaining this risk to a client will likely be very upsetting because "none of us finds it easy to face the prospect of incapacity." Harriet H. Onello, *Estate Planning for the Aging or Incapacitated Client in Massachusetts*, ST. B. MASS.—MASS. B. ASS'N CONTINUING LEGAL ED. (2012).

142. *See The Challenge of the Neurodegenerative Diseases*, *supra* note 6.

143. Patrick J. Pacheco & Sarah Patel Pacheco, *10 Common (Mostly Non-Tax) Estate Planning Mistakes and Traps for the Unwary*, ST. B. TEX., ESTATE PLANNING AND PROBATE 101 COURSE (June 25, 2012), http://www.texasbarcle.com/Materials/Events/11154/147470.pdf (providing an in-depth explanation of an attorney's assessment of a client's mental state). *See also* discussion *supra* Part III (providing different symptoms of certain neurodegenerative diseases).

144. *See* Beyer Interview, *supra* note 123. One way an attorney can relay this information to a client is through a handout, brochure, or pamphlet that provides a compilation of the symptoms associated with the different neurodegenerative diseases. *Id.* While estate planners can utilize the information in this article to educate their clients about these different diseases, the literature that estate planners give to their clients should be reviewed by a licensed medical professional. *Id.*

145. *Id.* (explaining that practitioners should provide their clients with multiple handouts, brochures, or pamphlets and encourage them to distribute the literature to their families, friends, and colleagues, in order to increase the number of individuals who are evaluating the client for initial signs of an issue).

146. *Id.*

147. *Id.* Because attorneys are not licensed medical professionals, they must be very careful not to cross the line by offering a client medical advice or giving a client suggestions pertaining to medical professionals. *See* Pacheco & Pacheco, *supra* note 143.

148. *See* Onello, *supra* note 141 (noting that there are various "options and strategies that may be put in place while a client is competent, in order to provide financial and personal protection in the event that he or she should become incapacitated").

family will be provided for in a manner consistent with the athlete's wishes."[149] While there are multiple planning techniques that estate planners can use to protect different individuals, a revocable trust with a trust protector is an effective method of protecting professional athletes from the risk of long-term cognitive decline.[150]

1. Revocable Trust with a Trust Protector

The most comprehensive advice that an estate planning practitioner can give a professional athlete is to have the client set up a revocable trust and appoint a trust protector; a trust protector not only guarantees that the trustee acts in accordance with the settlor's wishes, but a trust protector also fulfills the oversight function for the various aspects of the trust.[151] Because trust protectors in domestic trusts are a relatively new development in American trust law, only about half of the states currently allow trust protectors.[152] Thus, before advising a client to appoint a trust protector, practitioners need to consult the applicable state laws governing trusts to determine whether a particular state allows a settlor to appoint a trust protector.[153]

In Texas, for example, a settlor may expressly grant "a trustee or other person a power to direct the modification or termination of the trust."[154] Similarly, the Uniform Trust Code provides that "a trust may confer upon a trustee or other person a power to direct the modification or termination of the trust."[155] When looking at methods of protecting professional athletes from long-term cognitive decline, the language of these two statutes makes clear why utilizing trust protectors for professional athletes during the estate planning process is particularly favorable.[156] Specifically, the statutes allow a third-party to modify the trust; in effect, if a client appoints a trust protector, that appointment would confer such power of modification.[157]

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149. Joseph D. Wright, *Skyrocketing Dollars and the Tax Reform Act of 1997: Estate Planning for the Professional Athlete in a New Millennium*, 6 SPORTS LAW. J. 27, 28–29 (1999).

150. *See infra* Part VI.B.1.

151. *See* Richard C. Ausness, *The Role of Trust Protectors in American Trust Law*, 45 REAL PROP. TR. & EST. L.J. 319, 321 (2010); *see also* Alexander A. Bove, Jr. et al., *Trust Protectors in Estate Planning: Benefits and Risks*, STRAFFORD (June 7, 2012), http://media.straffordpub.com/products/trust-protectors-in-estate-planning-benefits-and-risks-2012-06-07/presentation.pdf.

152. *See* Ausness, *supra* note 151, at 324–25; *see also* Jayne Sykora, *Trust Protectors*, EPILAWG (Dec. 4, 2012), http://epilawg.com/2012/12/trust-protectors.

153. *See* UNIF. TRUST CODE § 808 (West 2000) (indicating that subsections (b)–(d) ratify the use of a trust protector). The following states have adopted the Uniform Trust Code: Alabama, Arizona, Arkansas, District of Columbia, Florida, Kansas, Maine, Michigan, Missouri, Nebraska, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Utah, Vermont, Virginia, West Virginia, and Wyoming. *See* UNIF. TRUST CODE § 101; *see also* TEX. PROP. CODE ANN. § 114.003 (West 2007) (permitting a settlor to appoint a trust protector).

154. TEX. PROP. CODE ANN. § 114.003(a).

155. UNIF. TRUST CODE § 808(c).

156. *See id.*; *see also* TEX. PROP. CODE ANN. § 114.003(a).

157. *See* UNIF. TRUST CODE § 808(c); TEX. PROP. CODE ANN. § 114.003(a).

While a client can essentially appoint any third party, practitioners should advise clients to appoint an individual who is a licensed medical professional or a medical expert.[158] Appointing a medical expert or licensed physician is most beneficial for the following reasons: they know what questions to ask a client to perform a proper medical evaluation, and they know what types of inquiries are most pertinent for the client's family members, friends, and colleagues.[159] In the trust instrument, the client should designate the medical expert as the trust protector and also require the trust protector to medically evaluate the client's cognitive capabilities once every year.[160] Using medical expertise, the trust protector can accurately assess the client's mental functioning and, if in question, immediately declare the trust irrevocable.[161]

Because an irrevocable trust restricts a client from making changes indefinitely, it is important for practitioners to insert specific language into the trust instrument that allows a client to undo the trust protector's declaration.[162] Specifically, a practitioner may insert language into the trust instrument that the trust will remain irrevocable until a court of competent jurisdiction determines that the client has full capacity.[163]

VII. CONCLUSION

Unfortunately, despite the growing number of studies connecting head injuries to collision and contact sports to certain neurodegenerative diseases, guidance for estate planners to address this particular issue remains virtually nonexistent.[164] Because professional athletes are clearly susceptible to the early onset of neurodegenerative diseases, every estate planning professional must adjust their planning strategies accordingly.[165] While this article is by no means an exclusive solution to planning for this potential problem, my hope is that this article brings awareness to the estate planning community about the related issues and provides guidance to practitioners, allowing them to address this problem in a direct and succinct manner.

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158. *See* Beyer Interview, *supra* note 123 (explaining that medical experts and physicians who know the different disease symptoms and who understand how to specifically evaluate the client are most effective for professional athletes).

159. *See id.*

160. *See id.* (noting that granting the trust protector this power is truly beneficial to the professional athlete client).

161. *See id.* While an irrevocable trust would solve the problem—by providing the professional athlete with the ultimate protection—it is the most restrictive. *See* Wright, *supra* note 149, at 35. The critical disadvantage of these trusts is that "the athlete must give up any direct interest in the property transferred to the trust and cannot take the property back at a later time if the trust no longer meets his or her objectives." *Id.*

162. *See* Beyer Interview, *supra* note 123

163. *See id.* (explaining that such triggering language grants the client the ability to go to court and make the trust protector's decision—the decision to declare the trust irrevocable—ineffective).

164. *See* discussion *supra* Parts III–IV; *see also*, *e.g.*, Gavett et al., *supra* note 22.

165. *See* discussion *supra* Parts III–IV.

As proposed in this article, there are certain questions that practitioners can incorporate into the forms they utilize during the information-gathering stage of the initial client interview.[166] If a client provides an affirmative response to any of these questions, practitioners should be mindful that any such response warrants urgent attention.[167] Practitioners should not only advise their clients of the prospective peril that lies ahead, but practitioners should also inform their clients of the benefits of estate planning protections, as well as provide them with some of the safeguards that are available.[168]

While some professional athletes may be fortunate enough to dodge the bullet after they spin the chamber, others, like my grandfather, are not as lucky.[169] Although there is no way of knowing with any absolute certainty when, or even if, an athlete will suffer from some type of neurodegenerative disease, the harsh reality is that collision- and contact-sport athletes face a risk of head injury every time they compete.[170] This risk, coupled with the fact that there is currently no indication that head injuries will ever be fully removed from the sports environment, necessitates that estate planners immediately address this issue with their clients, no matter what stage of the game.[171]

166. *See supra* Part VI.A.
167. *See supra* Part III.B; *see also supra* Part VI.
168. *See supra* Part III.B; *see also supra* Part VI.
169. *See supra* Part I.
170. *See* sources cited *supra* note 127; *see also* discussion *supra* Part III.
171. *See* sources cited *supra* note 122.