

# **TRAUMATIC BRAIN INJURY DEFENSE, The Cutting Edge 2018 Version - DEFENDING TBI CASES -- A LIFETIME OF EXPERIENCE**

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## Timed Agenda

### TBI Defense - The Cutting Edge 2018: Lessons From a Lifetime of Expert Experience

Co- Presenters: Jeffrey A. Brown, MD, JD, David Mahalick, PhD and William DeVito, Esq.

William DeVito, Esq.

A. Introduction (5 minutes):

1. Why talk about brain injury cases
2. Increasing financial stakes in brain injury claims (dollar values)
3. New cases and science
4. People Recover - the classic case of Phineas Gage
5. The famous case of HM

Jeffrey A. Brown, M.D., J.D. – A Lifetime of Expert Experience

B. Fifty years of lessons from old neuroscience and psychometrics (15 minutes):

1. Localization theory and limitations
2. Brain/body circuitry and the “mind/body” false distinctions
3. Uses and limitations of neuropsychological tests
4. Uses and limitations of imaging studies
5. Malingering versus misperception
6. “Primary” and “Secondary” gain

C. Emerging Frontiers of Neuroscience (15 minutes):

1. Brain injury biomarkers: uses and limitations
2. The critical importance of early intervention and the downside of being “a penny late and a dollar short”
3. Medication interactions and nonspecific presentations
4. Uses and limitations of diffusion tensor imaging specifically
5. The potential return of the QEEG
6. Transcranial magnetic stimulation: the hot new intervention with its uses and limitations
7. Uses and limitations of functional brain imaging
8. The neurobiology and neuroradiology of false positive imaging results and the increasing recognition of “brain damage” associated with attention deficit disorder and other formerly defined as being pure “psychiatric” syndromes

D. Hard Lessons Learned Being an Expert in Court (15 minutes):

1. Bad outcomes by defense counsel and why they happened
2. Bad outcomes by me and why they happened
3. Good outcomes by defense counsel and why they happened
4. Good outcomes by me and why they happened
5. The best and worst moments being a brain injury expert
6. The horrific catastrophe resulting from lack of coordination between defense counsel and those paying plaintiff's medical and surgical bills
7. The increasingly indispensable importance of having experts examine plaintiffs simultaneously and speaking with one another

David Mahalick, Ph.D

E. The Lifetime View of a Neuropsychologist (30 minutes):

1. Types of Brain Injuries
2. What to look for in Medical Records
3. Identifying TBI
4. Clinical Testing by a neuro-psychologist
5. Framing the degree of alleged damage
6. Co-occurring psychiatric disorders
7. Treatment

William N. DeVito, Esq.

F. Translating Experience with Neuroscience into Winning Legal Strategies (30 minutes):

1. Using discovery to find out what baseline you started with – what brain were you dealing with before the accident
2. Discovery
3. New Cases
4. Old cases (favorites)
4. Using sensitivity and specificity arguments to win the case

G. Q&A Discussion (10 minutes): Open Discussion and Questions

**Chapter 11. Preface: Avoiding Predictable Case Blunders****§11:13.11 New Myth: Misperceiving history means malingering**

It is a well known medical and neurobehavioral axiom that “history” – “his or her story” is “80% of the diagnosis.”

Consequently, it was drummed into and still is drummed into virtually every first year medical student in every medical school in the country that two of the most important actions one must take – whether it is in the emergency room or in private practice – is to get the answers to the questions:

1. Is the patient a reliable and accurate factual historian?
2. If they are, what does it mean if the history given changes over time?

An individual suffering consequences of traumatic brain injury and issues of whether or not to take a victim's history of fact as literal truth on one hand as well as how to deal with that history subsequently changing are two of the greatest clinical and legal challenges involved – challenges which unfortunately both sides of the case as well as their experts all too often ignore.

At its greatest extreme, when a person has suffered traumatic brain injury but a defense exam or at trial or deposition fails to disclose those the defense

side will claim they are material and significant omissions of fact, done in a way as to deliberately mislead the court, cases – at least in Florida now – run the risk of being dismissed because of arguments that such not recalling important facts constitutes “sentient” and systematic “fraud on the court.”

Such findings sound “the death knell of the lawsuit” as originally stated in Aoude v. Mobil Oil Corp.<sup>1</sup>, citing with approval an earlier 1983 case, Damiani v. Rhode Island Hospital.<sup>2</sup>

See the discussion of “fraud on the court” in *Neuropsychiatric Defenses by Plaintiffs to claims of such discussed in Dotson and Brown, Emotional Injuries: Law and Practice, 2014 Cumulative Supplement* (Eagan, MN: Thomson Reuters) §20:43 at 31358-31368).<sup>3</sup>

It cannot be too strongly emphasized that individuals who truly suffer traumatic brain injury as part-and-parcel of their condition in many cases had deficits in perception, information processing, memory encoding and ability to report memory problems that if a person were not suffering from brain injury or other conditions affecting these functions they at first glance might seem to give credence to “fraud on the court” claims.

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<sup>1</sup> Aoude v. Mobil Oil Corp., 892f.2d115 (1<sup>st</sup> cir. 1989), citing with approval.

<sup>2</sup> Damiani v. Rhode Island Hospital, 704fd12, 15-16 (1<sup>st</sup> cir. 1983).

<sup>3</sup>Dotson and Brown, *Emotional Injuries: Law and Practice, 2004 Cumulative Supplement* (Eagan, MN: Thomson Reuters) §20:43 at 1358-31368.

However, and as previously noted by one of the editors<sup>4</sup>, *"This point cannot be emphasized too strongly – attempts to deprive litigants of their rights to have 'their day in court'"* (emphasis added).

At the same time, it has been the experience of virtually every physician the editors have known that patients – who are not brain injured as well as some who are – do not always disclose all the facts that they are aware of, especially when they are in litigation and doing so in their opinion may hurt their case.

A good – if embarrassing – example of this occurred when one of the editors (JB) was just starting practice. He worked as a plaintiff expert on a case in which there had been an indisputable rupture of a cable holding up an elevator, with an equal indisputable series of injuries that the plaintiff suffered, including a mild concussion/"mild" traumatic brain injury.

However, when one of the editors examined this individual he literally "swore up and down" that he "never, ever" in his life had had any similar injuries; "never, ever" in his life ever had been in litigation before the current litigation; and "never, ever" in his life ever needed the kind of opioid pain medication that he was now taking.

The problem occurred when the case went to trial. After testifying to all of the above, and after the lunch break, the defense attorney, while broadcasting

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<sup>4</sup> Dotson and Brown, *Emotional Injuries: Law and Practice*, 2004 Cumulative Supplement (Eagan, MN: Thomson Reuters) §20:43 at 1368.

a big smile on her face, came up by the witness stand and asked me the following nine questions:

1. "Dr. Brown, isn't it true that Ms. X told you he never had had any injuries like this before at any time in his life?" (Answer: "Yes").
2. "You said that in your report, didn't you?" (Answer: "Yes").
3. "Isn't it true that this person said he was never in a lawsuit before this one?" (Answer: "Yes").
4. "You said that in your report, didn't you?" (Answer: "Yes").
5. "He said to you that he never took any opioid analgesic for any back pain or neck pain any time in his life, didn't he?" (Answer: "Yes").
6. "Yet, please look at this deposition transcript. It was taken from this man one week before you saw him. Please read to the jury. Would you believe that he said that he had had all of these injuries from this first accident?" (Answer: "Please read on").
7. "Would you believe that he was taking high doses of opioid analgesics from that accident?" (Answer: "Please read on").
8. "Would you believe that another psychiatrist had said that he was totally disabled from life as a result of this first accident?"
9. "Given the fact that he had these serious injuries and testified at a deposition only a week before you saw him, could you with

reasonable medical probability attribute these denials to what you diagnosed as a mild traumatic brain injury that had occurred six months before this deposition was taken?" (Answer: "No").

At this point, I could only look at the defense attorney, the referring plaintiff attorney and his client and say, "At this point, counselor, I am more likely to believe anything you would say" (!).

What happened was that the plaintiff attorney made an attempt to settle the case, which the defense attorney refused. Although he was awarded medical expenses, the New York State Insurance Fund had a lien on those, so the plaintiff and the referring attorney got nothing.

To this day, the plaintiff attorney, with whom I still speak and for whom I have done other cases, insists that his own client lied to him and that a different attorney was representing him on the other matter.

Then as we were leaving I asked the plaintiff himself to explain why he had denied to me awareness of the prior deposition and accident, he did not say it was because of his brain injury but simply smiled and smirked and said, "Oh, I really didn't think you needed to know that. If you knew it, it would have made the case with you harder to prove!"

In addition to the two extremes of "fraud on the court" claims by defense counsel which frankly are almost never warranted in cases of true traumatic brain injury on one hand and the malingering misrepresentations of the case just



described on the other, there is a huge grey zone/ambiguity which all too often is ignored by attorneys and experts on both sides.

This area goes under the general label of misperception which, depending on the clinical facts, sometimes are the direct result of a brain injury and sometimes instead reflect frankly dishonest behavior on the part of patient litigants.

## Chapter 11.        **Avoiding Predictable Case Blunders**

### §11:13.12        Myth 3: Specificity Doesn't Matter

The need for plaintiff and defense counsel to be as up-to-date as possible on both the limitations – and dangers of ignoring – test data specificity issues in particular was highlighted in the July 25, 2013 issue of *The New York Times*.

The article, aptly titled, “High-Tech, High-Risk Forensics,”<sup>5</sup> focused on one of, if not, the most famous pieces of forensic data that, along with fingerprinting, in recent years has barely, if ever, seriously been challenged in court regarding both admissibility and probative value: DNA.

The article describes how in a robbery and murder case, the forensics team found DNA on the victim’s fingernails that “belonged to an unknown person, presumably one of the assailants. The sample was put into a DNA database and turned up a ‘hit’ – a local man by name of Lucas Anderson.”

“Bingo. Mr. Anderson was arrested and charged with murder.”

However, as the article’s author noted, “There was one small problem: the 26-year-old Mr. Anderson couldn’t have been the culprit. During the night in question, he was at the Santa Clara Valley Medical Center, suffering from severe intoxication.”

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<sup>5</sup> Obasogie, High-Tech, High-Risk Forensics, *The New York Times* A-27 (July 25,2013).

“Yet he spent more than five months in jail with a possible death sentence hanging over his head. Once presented with Mr. Anderson’s hospital records, prosecutors struggled to figure out how an innocent man’s DNA could have ended up on the murder victim.”

The likely answer found was that the paramedics who had taken Mr. Anderson to the hospital were the very same ones who had responded to the crime scene a few hours later, with the result that Mr. Anderson’s DNA “must have been accidentally transferred to the body of the victim by way of the paramedics’ clothing or equipment.”

The point of the article focused on “the certainty with which prosecutors charged Mr. Anderson with murder” which “highlights the very real injustices that can occur when we place too much faith in DNA forensic technologies.”<sup>6</sup>

The article goes on to talk not only about the issue of “contamination” but even a not deemed impossible likelihood that two DNA profiles can match by coincidence.

Moreover – and here the issue with the use and misuse of the newer imaging studies carefully must be assessed – was the fact that “there were also problems with the way DNA evidence is *interpreted and presented* to juries” (emphasis added).<sup>7</sup>

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<sup>6</sup> Obasogie, High-Tech, High-Risk Forensics, *The New York Times* (July 25,2013) at A-27.

<sup>7</sup> Obasogie, High-Tech, High-Risk Forensics, *The New York Times* (July 25,2013) at A-27.

For example, the author cited a criminal case in which jurors were – incorrectly – “told that there was only a 1.1 m [million] chance that this DNA match was pure coincidence” with the result that the man involved is serving a life sentence.

However, the chance of an erroneous and misinterpreted coincidental match was based on an erroneous control population (the general population’s DNA instead of, as the author of the article argued only profiles in the DNA database should have been used).

If the latter had been done (assuming that the real culprit’s profile was not in the database) “the estimate would have changed to one in three....”

The authors caution about DNA forensics as equally relevant for imaging studies used to “prove” the presence or the arguable absence of true traumatic brain injury: these data are “most useful” when “it corroborates other evidence pointing to a suspect” – but not used by itself in a clinical vacuum.

As the article concludes, “the next Lucis Anderson could be you. Better hope your alibi is as well documented as his.”

§11:13.13            Myths: Self-Deception: the 800 pound gorilla in the room

When it is virtually indisputable – indeed in one editor’s opinion – such a universal and well-known fact of life that it should be subject to judicial notice – that every single plaintiff in a personal injury case contains a hope to be compensated for the injuries they believe they have has the attorney who represents them on a contingency basis clearly hopes that a compensation award or verdict will occur.

A corollary of the above is that a plaintiff in a personal injury case has a motive/incentive to do everything possible that increases the likelihood of their recovery and the likelihood of what to the plaintiff is a fair award or verdict.

However, it does not follow from any of those statements either that plaintiffs of necessity will be driven by the incentive to “win” such that they will deliberately or otherwise misreport important facts of the case.

Similarly, the presence of the above does not necessarily mean either that any statements that plaintiffs make in any personal injury cases, let alone those involving traumatic brain injury, are for “secondary gain” (external) and litigation-associated reasons and necessarily hide important pre-accident history and/or exaggerate post-accident symptoms and claims.

What nonetheless is true at least in one editor's and clinical colleagues' experience that, when facts are distorted and minimized or exaggerated (as independently verified from other materials) by litigants in traumatic brain injury cases, such factual distortions/minimizing/exaggerating more often than not is not the result of conscious deceptive behavior but of misperception and/or self-deception.

The concept of memory misperception and its correlate self-deception do not have their origins in diagnosis or treatment of traumatic brain injury or for that matter in the civil litigation process.

Rather, misperception and self-deception are behaviors known for centuries as well as during the last fifty years and popularized in a song.

One can trace back these concepts at least as far back as the life of the famous Greek orator Demosthenes (384-322 B.C.), whose quote has been repeated through the ages: "Nothing is so easy as to deceive one's self; for what we wish, we readily believe"; "there is a great deal of wishful thinking in such cases; it is easiest thing of all to deceive one's self"; "nothing is easier than self-deceit. For what each man wishes, that he also believes to be true."<sup>8</sup>

The awareness of conscious self-deception and misperception are not limited to the United States.

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<sup>8</sup> *First and Third Olynthiacs.*

On the contrary one of, if not the most famous cinematic portrayals of same occurred in the Japanese movie by the renowned director Kurosawa Akira, "*Rashomon*" in 1950, by the Daiei Motion Picture Company, 1950 winner of the Academy Award for best foreign language film in 1951.<sup>9</sup>

Here, a bandit reportedly raped and murdered a woman and her husband in the woods. A priest and woodcutter were summoned to testify at the murder trial as to the defendant and the wife.

Similarly, the bandit/rapist and the victim samurai wife's testimony was so different that a psychic had to be brought in to allow the murdered man himself to give his own testimony. He told a totally different story as did the woodcutter witness.

Closer to home – but bearing the same messages about misperception and self-deception – is the well-known 1957 film, *Twelve Angry Men*.

Once again, the key part of this story relates to jurors changing their views regarding guilt – and one another – is the initial juror vote being one vote short for a vote for execution to a unanimous vote of "not guilty."<sup>10</sup>

One of the most well-known popular song expressing these same views regarding misperception and/or self-deception were literally dramatically

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<sup>9</sup> See Encyclopedia Britannica, [http://www.Brittanica.com/ebchecked/topic/491719/Twelve Angry Men](http://www.Brittanica.com/ebchecked/topic/491719/Twelve%20Angry%20Men).

<sup>10</sup> See Encyclopedia Britannica, <http://www.Brittanica.com/ebchecked/topic/491719/Rashomon>.

portrayed in the 1958 film *Gigi*.<sup>11</sup> In this song are the words “Yes, I remember it well.” This was written by Alan J. Lerner, and include the following verse: “We met at nine, we met at eight, I was on time: no you were late, ah, yes I remember it well.”

“We dined with friends, we dined alone, a tenor sang, a baritone, ah yes, I remember it well.”

“The dazzling April moon, there was none that night....that carriage ride, you walked me home, you lost a glove, ah ha, it was a comb, ah, yes, I remember it well....”

“You wore a gown of gold, I was all in blue. Am I getting old? Oh, no, not you.... Ah, yes, I remember it well.”

A more sophisticated – and neurological theory providing physiological explanation of a neurological theory that partly explains altered perception, especially regarding pain, was developed in the early 1960's by Drs. Ronald Melzack and Patrick Wall.

Their “gate control theory of pain” provides a physiological basis for understanding pain as well as pain encountering spinal cord “nerve gas” that open or close depending on many things – including instructions coming down from the brain. When gates open, pain messages “get through” more easily

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<sup>11</sup> *Gigi*, 1958. See, e.g. Turner Classic Movies.



with more pain but when gates close pain messages are kept from reaching the brain and may not even be experienced.<sup>12</sup>

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<sup>12</sup> Melzack and Wall, 150 (3699) *Science* 971-979 (1965).

## Chapter 12. Approaching the Case: A Neuropsychiatric Perspective:

### §12:4.11 Understanding the uses and limitations of DSM-5

The fifth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, DSM-5*, finally has been published. It reportedly “brings innovations to the coding, classification, and diagnosis of mental disorders that have far-reaching effects across many disciplines.”<sup>13</sup>

Note that caveats about its use once again appear which hold implicit warnings about the criteria being taken too literally when used by attorneys and their experts: “The symptoms contained in the respective diagnostic criteria sets do not constitute comprehensive definitions of underlying disorders, which encompass cognitive, emotional, behavioral and physiologically processes that are far more complex than can be described in these brief summaries....

“It is not sufficient to simply check off the symptoms in the diagnostic criteria to make a mental disorder diagnosis....it requires clinical training to recognize when the combination of predisposing can be precipitating, perpetuating, and protective factors has resulted in the psychological condition in which physical signs and symptoms exceed normal ranges....”

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<sup>13</sup> American Psychiatric Association, *Desk Reference to the Diagnostic Criteria from DSM-5* (Washington, DC: viii American Psychiatric Publishing, 2013).

"The diagnosis for mental disorders should have clinical utility: it should help clinicians to determine prognosis, treatment plans, and potential treatment outcomes for their patients. However, the diagnoses for mental disorders is not equivalent to a need for treatment....

"This definition of mental disorder was developed for *clinical, public health, and research purposes. Additional information is usually required beyond that contained in the DSM-5 diagnostic criteria in order to make legal judgments on such as criminal responsibility, eligibility for disability compensation, and competency*" (emphasis added).<sup>14</sup>

The current edition in fact goes well beyond the caveats that had appeared in prior editions, with the manual now providing a detailed and specific "Cautionary Statement for Forensic Use of *DSM-5*."

It explicitly recognizes that in addition to its being used to help clinicians it "also is used as a reference for the courts and attorneys in assessing the forensic consequences of mental disorders. As a result, it is important to note that the definition of mental disorders included in *DSM-5* was to develop and meet the needs of *clinicians, public health professionals, and research investigators rather than all of the technical needs of the courts and legal professionals.*

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<sup>14</sup> American Psychiatric Association, *Desk Reference to the Diagnostic Criteria from DSM-5* (Washington, DC: viii American Psychiatric Publishing, 2013) at 3-6.

“It is also important to note that DSM-5 does not provide treatment guidelines for any given disorder.

*“When used appropriately, diagnoses and diagnostic information can assist legal decision makers in their determinations,” including serving “as a check on ungrounded speculation about mental disorders and about the functioning of a particular individual” – “however, the use of DSM-5 should be informed by an awareness of the risks and limitations that have been used in forensic settings.”<sup>15</sup>*

*“When DSM-5 categories, criteria, and textual descriptions are employed for forensic purposes, there is a risk that that diagnostic information will be misunderstood. These things arise because of the imperfect fit between the questions and ultimate concern to the law and the information contained in the clinical diagnosis” (emphasis added).<sup>16</sup>*

◆**PRACTICE NOTE:** *DSM-5 does all it can to drive the point home further that attorneys are neither training to be nor to function as clinicians, let alone to “second guess” clinicians and/or try to equate deposition questions with questions asked during clinical examinations, this section concludes by the clear statement that*

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<sup>15</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Washington, DC: viii American Psychiatric Publishing, 2013) at 13.

<sup>16</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Washington, DC: viii American Psychiatric Publishing, 2013) at 13.

*“use of DSM-5 to assess for the presence of mental disorder by non-clinical, non-medical or otherwise insufficiently trained individuals is not advised.*

*“Non-clinical decision makers should also be cautioned that a diagnosis does not carry any necessary implications regarding the etiology or causes of the individual's mental disorder or the individual's degree of control over behaviors that may be associated with the disorder” (emphases added).<sup>17</sup>*

The American Psychiatric Association intended to direct its warnings and caveats about the manual being used for forensic purposes of is directed at the attorney who intends to use the DSM-5 as a “cookbook” to establish either the presence of a psychiatric disorder or, conversely, argue that it is flatly incorrect to claim that “individuals whose symptoms do not meet full criteria for mental disorder” necessarily then do not “demonstrate a clear need for treatment or care.”

“The fact that some individuals do not show all symptoms indicative of a diagnosis should not be used to justify limiting their

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<sup>17</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Washington, DC: viii American Psychiatric Publishing, 2013) at p. 14.

access to appropriate care<sup>18</sup> -- a statement clearly directed at insurers that might by implication defense counsel would attempt to claim that meeting all DSM-5 criteria for a disorder is a necessary prerequisite determining entitlement for care reimbursement.

Note also the clear warning that appears directed at any attorney or any other person using the manual “to assess for the mental disorder” when they are “nonclinical, nonmedical or otherwise insufficiently trained individuals...*nonclinical decision makers should also be cautioned that a diagnosis does not carry any necessary implications* regarding “the etiology for causes of the individuals mental disorder or the individuals’ degree of control over behaviors that may be associated with the disorder” (emphasis added).<sup>19</sup>

One of the articles that has been published specifically assessing “the DSM-5 and the Law” appeared in the June, 2013 issue of *The New York State Bar Association Journal*.<sup>20</sup>

The author, a psychologist who is on the Board of Directors of the Medical Legal Society of British Columbia, states that although the manual provides “the

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<sup>18</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Washington, DC: viii American Psychiatric Publishing, 2013) at 5.

<sup>19</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Washington, DC: viii American Psychiatric Publishing, 2013) at 14.

<sup>20</sup> Cochrane, The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology, 85(5) New York State Bar Association Journal 20-35 (2013).

framework for most psychological assessments and for all forms of psychotherapy” it actually is a “meld of science, theory and opinion” based not only on “research principles” but on “subjective realities.”

Dr. Cochrane goes on to state that by using a “contextual approach” attorneys can both “understand” – and legitimately question – “the research behind the various diagnostic symptom criteria rather than just looking at the symptoms lists themselves.”<sup>21</sup>

Dr. Cochrane rightly cautions – in a fashion that simply goes way beyond DSM-5 but also applies to the use of behavioral science in court generally – that the “unavoidable situation” of psychology often involving “the application of hard science principles to soft science phenomena....creates fertile ground for biological oversimplification and the attributes in the factual information to that which is really a psychological metaphor.”<sup>22</sup>

Yet “much of this meaning attribution and misinformation goes unchallenged because most people, including attorneys, witnesses, judges and jury members, do not have the information necessary to easily recognize and

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<sup>21</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) New York State Bar Association Journal (2013) at 20.

<sup>22</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) New York State Bar Association Journal (2013) at 20.

effectively challenge the aspects of law-related psychology that fall into the category of 'what we know isn't so.'"<sup>23</sup>

Dr. Cochrane goes on rightly to caution that "correlation is not causation" but regarding depression specifically there are "multiple variables, including the uniqueness of the individuals are involved in the causation of depression."<sup>24</sup>

He also points out that "*a key variable that is rarely included in psychology research is the self-efficacy of the individuals being studied. Research design for treatment effectiveness is based on the unspoken premise that each person in the study has the same ability to utilize the cognitive, behavioral and emotional tools provided in the treatment model*" (emphasis added).<sup>25</sup>

*He also adds his voice to those questioning the reliability and validity of self-reports – and implicitly although he does not state this, plaintiff self-reports of injury, symptoms, and response to treatment.*

What Dr. Gordon does emphasize is that "*self-reports, which are often used in outcome research [and, of course, the editors note, by plaintiff attorneys in litigation], are the least reliable measures*" (emphasis added).<sup>26</sup>

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<sup>23</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) New York State Bar Association Journal (2013) at 21.

<sup>24</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) New York State Bar Association Journal (2013) at 22.

<sup>25</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) New York State Bar Association Journal (2013) at 22.

<sup>26</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) New York State Bar Association Journal (2013) at 23.



He then goes on to point out that a significant change between *DSM-5* and its predecessor was that ten different personality disorders are now listed where as the previous edition listed six.

He notes that “existing case law involving Personality Disorders is based on the *DSM-IV* model. Therefore, until a new body of case law has been established, opinion evidence and often, conflicting opinion evidence, will be the norm.”<sup>27</sup>

He also points out – and here the issue of substance abuse/dependence has profound legal consequences, the editor’s note – that “the *DSM-5* does not distinguish, as did the *DSM-IV* between concepts of abuse and dependence....The *DSM-5* committee concluded that current research supports the decision to combine abuse and dependence into a single disorder with a grading scale of severity.”<sup>28</sup>

He then goes on specifically to caution against the uses of “the disease model of addiction” which in turn are based “on the premise that addiction is a disease, and that this disease is such that the addicted individual [necessarily] is unable [voluntarily] to break his or her addiction” and consequently “cannot held be responsible for the negative consequences arising from their powerlessness in the face of their addiction disease.... [Yet] *it is important to*

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<sup>27</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) *New York State Bar Association Journal* (2013) at 23.

<sup>28</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) *New York State Bar Association Journal* (2013) at 26.

*remember that the disease model is a theoretical and, in some circles, and opinion model, rather than a research-validated model"* (emphasis added).<sup>29</sup>

He also notes that the definition of posttraumatic stress disorder to some extent has been broadened regarding "the circumstances wherein a person may suffer identifiable PTSD symptoms."<sup>30</sup>

He then gave a detailed analysis of the DSM-5 criterion A for posttraumatic stress disorder, which he notes included multiple subjective components involving "the perceptions" of the "person directly involved."<sup>31</sup>

He notes that the criteria focus on a person perceiving a threat – but notes that "when a person perceives, he or she does so in terms of the *anticipated outcome rather than in terms of the actual outcome. It can be difficult for a court to reliably determine in hindsight, whether an individual's perception that he or she faced a serious threat was a misperception of the circumstances, was influenced by pre-existing situations or a pre-existing condition or was a purposeful attempt to receive"* (emphasis added).<sup>32</sup>

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<sup>29</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) New York State Bar Association Journal (2013) at 28.

<sup>30</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) New York State Bar Association Journal (2013) at 28.

<sup>31</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science In Psychology*, 85(5) New York State Bar Association Journal (2013) at 28.

<sup>32</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science in Psychology*, 85(5) New York State Bar Association Journal (2013) at 28.

He then in his continuing assessment of posttraumatic disorder – which occurs in more of the article than his discussing any other condition<sup>33</sup> -- notes both that “an accurate determination of whether a client suffers from PTSD cannot be made on the basis of the event alone. People react differently to potentially traumatizing events” and “in fact, many individuals who are exposed to trauma do not develop PTSD.”<sup>34</sup>

Finally, he emphasizes as a final point that “no one can tell ahead of time whether your PTSD clients will recover quickly, eventually or not at all. Therefore, when seeking damages, consider the extent of assistance that your clients made need rather than accepting an arbitrary number.”<sup>35</sup>

He concludes his article by discussing the somatoform disorders and malingering.

He then asserts that *“nobody, expert or novice, in spite of confidence in his or her detection skills, performs significantly better than chance when it comes to determining if a person is telling the truth.... Human beings fill in gaps of uncertainty with attributed meaning and do so with surprising confidence”* (emphasis added).<sup>36</sup>

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<sup>33</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science in Psychology*, 85(5) New York State Bar Association Journal (2013) at 28-33.

<sup>34</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science in Psychology*, 85(5) New York State Bar Association Journal (2013) at 29.

<sup>35</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science in Psychology*, 85(5) New York State Bar Association Journal (2013) at 31.

<sup>36</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science in Psychology*, 85(5) New York State Bar Association Journal (2013) at 34.

Dr. Cochrane then talks about “alleged malingering” but unfortunately does not explain much about a type of “direct and verifiable evidence of malingering” would in his view be clinically credible, said that unless such is “brought to light,” “you stand and fight on behalf of your client. This is a *subjective ground but its subjective nature* does not mean that your client is faking his or her symptoms”<sup>37</sup> (emphasis added).

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<sup>37</sup> Cochrane, *The DSM-5 And The Law: When Hard Science Meets Soft Science in Psychology*, 85(5) New York State Bar Association Journal (2013) at 35.

## §12:14.12 DSM-5 and Malingering

Note specifically that malingering still is present as a diagnosis, coded under “Other Circumstances of Personal History.”<sup>38</sup>

Note, however, that “malingering” as such in the *DSM-5* does *not* appear in the index of this volume although the description that does appear is, criteria-wise, the same that appears in *DSM-IV-TR*.<sup>39</sup>

There are some differences between the two diagnostic manuals regarding the description of “Malingering,” however, especially in regards to the distinction between “Malingering” and “Factitious Disorder.”

Note specifically that:

1. In both systems malingering is deemed to be produced by “an external incentive, whereas “Factitious Disorder external incentives are absent,” in *DSM-IV* the next statement is that: evidence of an intrapsychic need to maintain the sick role suggests Factitious Disorder, *DSM-5* goes on at the end to state that “definite evidence of feigning (such as clear evidence that loss of function is present

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<sup>38</sup> American Psychiatric Association, *Desk Reference to the Diagnostic Criteria from DSM-5* (Washington, DC: viii American Psychiatric Publishing, 2013) at 373-374.

<sup>39</sup> Compare American Psychiatric Association, *Desk Reference to the Diagnostic Criteria from DSM-5* (Washington, DC: viii American Psychiatric Publishing, 2013) at 373-374 with American Psychiatric Association, *Desk Reference to the Diagnostic Criteria from DSM-5* (Arlington, VA: American Psychiatric Association, 2013) at 302 and 309-310.

during the examination but not at home) would suggest a diagnosis “Factitious Disorder” if the individual’s apparent aim is to assume the sick role, while malingering if it is to obtain an incentive, such as money.”<sup>40</sup>

2. Left out of *DSM-5* was the statement in *DSM-IV-TR* that “in malingering (in contrast to Conversion Disorder) symptom relief is not often obtained by suggestion or hypnosis.”<sup>41</sup>

Unfortunately, in the editors’ view, however, *DSM-5* no more than *DSM-IV-TR* even considers the possibility – let alone likelihood – that there are many combined conscious as well as unconscious incentives to any individual involved in litigation to “misremember” past history that weakens the plaintiff attorney’s theory of the case as well as to present an retroactively exaggerated description of post-trauma symptoms and limitations.

In other words, it is the editors’ experience that both sets of incentives are present. From a clinical standpoint, there often in litigant’s presentation is a combination of both “primary” (internal) as well as “secondary (external) combinations of psychological and financial incentives to present such a picture.

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<sup>40</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from *DSM-5* (Arlington, VA: American Psychiatric Association, 2013) at 374.

<sup>41</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from *DSM-5* (Arlington, VA: American Psychiatric Association, 2013) at 310.

Nor does the new diagnostic manual even consider the likelihood that it is simply human nature for those who are interested in a financially fair outcome of litigation (including payment of accident-caused medical expenses, lost wages, pain and suffering, etc.) to so want the dramatic picture of injuries to be presented to the jury that all of the above, quite in good faith and with all sincerity will present a misperceived – *as opposed to fraudulent and deliberately misrepresented* – version of facts.

The significance of all this? Simply that it is the editors' consistent experience that 90% to 95% of these cases get settled prior to being tried to a verdict. Consequently, accepting the reality of such "mixed" psychological behaviors should make even "hardnosed" defense counsel avoid falling into the trap of "polarizing" plaintiffs as malingerers whose claims simply cannot have any financial value.

Similarly, equally "hardnosed" plaintiff counsel should look at their own behaviors when they chose insulting defense experts and manipulating them into adopting extreme "polarized" positions and thereby fail their clients who need to understand and accept reasonable settlements.

Furthermore, by both sides attempting to see the legitimacy of the others' legal and expert positions will more likely be much more effective in creating an atmosphere leading to fairer and more rapid settlements in new cases in the future.

◆**PRACTICE NOTE:** The overwhelming likelihood that the vast majority of mild traumatic brain injury cases have been and will continue to be settled, it is simply foolish for either side to attempt “to polarize” issues and/or experts.



§12:4.13 DSM-5 and "Neurocognitive Disorders": new DSM05 approaches and new limitations

This new *DSM-5 Diagnostic Manual* has replaced its most immediate predecessor, *DSM-IV-TR*.<sup>47</sup> The uses – and limitations – the *DSM-5* are discussed in the 2014 Cumulative Supplement to *Emotional Injuries: Law and Practice* and will not be repeated verbatim here, but rather summarized.<sup>48</sup>

In general, while it is true that "superficially *DSM-5* appears to be merely a clarification and extension of *DSM-IV-TR*, this manual in fact has within it some radical departures from *DSM-IV-TR*, departures which likely will have a dramatic impact on the entire area of emotional injury and neuropsychiatric litigation."<sup>49</sup>

One of the, if the not perhaps the most dramatic departure in the approach of *DSM-5* has been the complete abandonment of the multiaxial format that had been at the core of *DSM-IV-TR* with there having been "virtually nothing written in detail explaining why *DSM-5* abandoned *DSM-IV-TR* 'multiaxial system,'" in which each Axis at least according to *DSM-IV-TR* "refers to a

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<sup>47</sup> See, e.g., American Psychiatric Association, Desk Reference to the Diagnostic Criteria for DSM-IV-TR (Washington, D.C.: American Psychiatric Association, 2000).

<sup>48</sup> See, Dotson and Brown, *Emotional Injuries: Law and Practice*, 2014 Cumulative Supplement (Eagan, MN: Thomson Reuters) §19:15.30 (DSM-5), "A Radical – And Potentially Chaos Causing-Transformation? at 1017-1025 in 19:15.70, with the DSM-IV-TR and DSM-5 writers in ternate: Cautionary Statements at 1025-1030.

<sup>49</sup> See Dotson and Brown, *Emotional Injuries: Law and Practice*, 2004 Cumulative Supplement (Eagan, MN: Thomson Reuters) §19:19 at 1017.

different domain of information “that may help the clinician plan treatment and predict outcome” (emphasis added).<sup>50</sup>

In the article appearing in *Emotional Injuries* the editors there review all of the multiple difficulties involving the attempt of *DSM-5* to “medicalize” psychiatry, the problems associated with the complexity of the rating scales given, the exclusion of relational and family issues and the contributions of non-psychiatric disciplines and the complexity of the diagnostic criteria.

For example, in *DSM-IV-TR* posttraumatic stress disorder is described in approximately two pages of text whereas double that amount was required in *DSM-5*.<sup>51</sup>

Although *DSM-5* did attempt to clarify and elaborate distinctions amongst and between cognitive disorders and those associated with traumatic brain injury, comparison of the two desk references for these two diagnostic manual also reveals that *DSM-5* has created in the editors’ view at least as many problems that had been attempted to solve.

Note for example that in *DSM-IV-TR* there are a multitude of cognitive disorders including “Amnestic Disorders,” “Delirium,” “Dementia,” “Age-Related Cognitive Decline” and “Cognitive Disorder Not Otherwise Specified” including

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<sup>50</sup>American Psychiatric Association, Desk Reference to the Diagnostic Criteria from *DSM-IV-TR* (Washington, D.C.: American Psychiatric Association, 2000) at 37.

<sup>51</sup> Compare American Psychiatric Association, Desk Reference to *DSM-IV-TR* (Washington, D.C.: American Psychiatric Association, 2000) at 218-220 with American Psychiatric Association, Desk Reference of the Diagnostic Criteria for *DSM-5* (Arlington, VA: American Psychiatric Association, 2013) at 143-149.

dementia of the Alzheimer's type, dementia "Due To Multiple Ideologies," "Dementia Due to a Multitude of Specific Medical Conditions," "Vascular Dementia" and "Substance-Abuse Persistent Dementia" and others.<sup>52</sup>

Traumatic brain injury generally is included under cognitive disorders not otherwise specified with "Mild Neurocognitive Disorder" and "Post-Concussional Disorder" being mentioned along with "suggested *research criteria*" (emphasis added).<sup>53</sup>

What *DSM-5* does is a much larger section on "neurocognitive disorders" (thirty-five pages long) that includes specific sections on "major neurocognitive disorder,"<sup>54</sup> "major or mild frontotemporal neurocognitive disorder,"<sup>55</sup> "major or mild neurocognitive disorder due to Alzheimer's disease,"<sup>56</sup> "major or mild neurocognitive disorder due to another medical condition,"<sup>57</sup> "major or mild cognitive neurocognitive disorder due to HIV infection,"<sup>58</sup> "major or mild neurocognitive disorder due to Huntington's disease,"<sup>59</sup> "major or mild

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<sup>52</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-IV-TR (Washington, D.C.: American Psychiatric Association, 2000) at 83-87, 91-95.

<sup>53</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-IV-TR (Washington, D.C.: American Psychiatric Association, 2000) at 98 and in Appendix B.

<sup>54</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 299-300, 304.

<sup>55</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 302, 306, 308.

<sup>56</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 302, 305-306.

<sup>57</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 304 and 318-319.

<sup>58</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 303 and 315-316.

<sup>59</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 303 and 317-318.

neurocognitive disorder with Lewi body issues,"<sup>60</sup> "major or mild neurocognitive disorder due to multiple etiologies,"<sup>61</sup> "major or mild neurocognitive disorder due to Parkinson's Disease,"<sup>62</sup> "major or mild neurocognitive disorder due to prion disease,"<sup>63</sup> "major or mild substance/medication-induced neurocognitive disorder,"<sup>64</sup> "major or mild vascular neurocognitive disorder,"<sup>65</sup> "mild neurocognitive disorder,"<sup>66</sup> with a specific discussion of "neurocognitive domains,"<sup>67</sup> "recording procedures" for cognitive disorder,<sup>68</sup> and "unspecific neurocognitive disorder."<sup>69</sup>

Furthermore, is a significant and substantial section on "neurodevelopmental disorders"<sup>70</sup> – which of course often are associated with cognitive deficits.

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<sup>60</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 302, 308-309.

<sup>61</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 304 and 319-320.

<sup>62</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 303 and 316-317.

<sup>63</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 303 and 316; see also the discussion (later in this supplement @ 12:4.40.

<sup>64</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 303 and 311-315.

<sup>65</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 302 and 309-310.

<sup>66</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 300-304.

<sup>67</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 285 and 286-291.

<sup>68</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 301-303.

<sup>69</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 304 and 320.

<sup>70</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 17-44.

These include “attention-deficit/hyperactivity disorder,”<sup>71</sup> “autism spectrum disorder,”<sup>72</sup> “communication disorders,”<sup>73</sup> “intellectual disabilities,”<sup>74</sup> “unspecified learning disorder,”<sup>75</sup> “other specified neurodevelopmental disorder,”<sup>76</sup> and “unspecific neurodevelopmental disorder.”<sup>77</sup>

Where does traumatic brain injury fit into all of this? Generally, under the title for the diagnoses of “traumatic brain injury, major or mild neurocognitive disorder due to traumatic brain injury,” warranting only three pages in the text.<sup>78</sup>

Note on one hand that the *DSM-5* diagnosis of “Major or Mild Neurocognitive Disorder Due to Traumatic Brain Injury” can be met by any of four different criteria for “Major and Mild Neurocognitive Disorder” – along with there being “evidence of a traumatic brain injury” – that is, an impact of the head or other mechanisms of rapid movement or displacement of the brain within the skull.

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<sup>71</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 31-35.

<sup>72</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 27 and 31.

<sup>73</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 24-27.

<sup>74</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 17-23.

<sup>75</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 36-39.

<sup>76</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 43.

<sup>77</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 44.

<sup>78</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 302 and 310-311.

The four criteria, any one of which would meet these criteria include not just “loss of consciousness” but also “posttraumatic amnesia” (not here specifically defined regarding length), “disorientation and confusion” (again not specifically defined by length of time or degree necessary), and “neurological signs” which here given as an examples of “neuroimaging demonstrating injury; a new onset of seizures; a marked worsening of the preexisting seizure disorder; visual field cut; anosmia; hemiparesis.”<sup>79</sup>

Furthermore, it was noted that “the neurocognitive disorder presents immediately after the occurrence of the traumatic injury or immediately after recovery of consciousness and persists past the post-injury period.”<sup>80</sup>

Note that there is no recognition here of even the possibility of there not being any immediate presentation of these symptoms or signs after a delay that goes on after – again undefined – “acute post-injury period.”<sup>81</sup>

Note further that there is another problem posed by these criteria for plaintiff attorneys under the requirements for diagnosis of “major neurocognitive disorder” -- that “*the cognitive deficits are not better explained by another mental disorder*” (e.g., *major depressive disorder, schizophrenia*) – and that the diagnosis of “major cognitive disorder” is not limited to that resulting from

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<sup>79</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 310.

<sup>80</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 310-311.

<sup>81</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 311.

traumatic brain injury but that it also can be described as resulting from twelve other possibilities – including the medical condition and “unspecified” (emphasis added).<sup>82</sup>

Specifically, in addition to traumatic brain injury, this diagnosis can be given for those who will suffer from:

1. “Alzheimer’s disease.”
2. “Frontotemporal lobar degeneration.”
3. “Lewy body disease.”
4. “Vascular disease.”
5. “Traumatic brain injury.”
6. “Substance/medication use.”
7. “HIV infection.”
8. “Prion disease.”
9. “Parkinson’s disease.”
10. “Huntington’s disease.”
11. “Another medical condition.”
12. “Multiple etiologies.”
13. “Unspecified.”<sup>83</sup>

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<sup>82</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 311.

<sup>83</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 299-300.

The clinical and legal challenge then is to what extent is one required either as a physician or plaintiff attorney to have the burden of disproving the likely or even possible existence of other causes of the found cognitive impairment before even being able to make the clinical – let alone legal – argument and “diagnosis” that the patient-litigant’s presentation is uniquely or even largely the result of traumatic brain injury versus of the other causes of the neurocognitive disorder described in the new diagnostic manual?

One of the more daunting challenges that the plaintiff attorney community has not apparently yet completely come to grips with is the high likelihood that nonphysician neuropsychologists and others will be deemed by courts as frankly incompetent to be able to talk about “causes” of cognitive impairment or even the bases of their own psychometric conclusions since as nonphysicians they are not capable of distinguishing diagnostically among the multiplicity of potential “causes” of cognitive impairment that clearly are medical in nature and listed in such detail in *DSM-5*....

Another difference – and problem for anyone attempting to use *DSM-5* as *DSM-IV-TR* has been accused as being a “cookbook” of diagnoses used by attorneys not qualified to discuss the limitations of these criteria apparent in an even larger section of *DSM-5* than had appeared in *DSM-IV-TR*.

Specifically, whereas *DSM-IV-TR* basically had only one page of a “cautionary statement” instead of acknowledging that the classification



represents only a “evolving knowledge in our field” and “does not imply that” any of the conditions listed meet “legal or other non-medical criteria for what constitutes a medical disease or mental disability” – and that the characterizations “may not be wholly relevant to legal judgments.”<sup>84</sup>

In *DSM-5* there is an explicit – not in the preface either but in the text – a specific – and 50% longer – “Cautionary Statement for forensic use of *DSM-5*.”<sup>85</sup>

As noted in the *Emotional Injuries: Law and Practice Cumulative Supplement*, *DSM-5* does explicitly recognize that although the *DSM-5 Diagnostic Criteria and Text* are “primarily designed to assist clinicians in conducting *clinical* assessments, case formulation, treatment planning” (emphasis added), they authors of *DSM-5* did recognize that the manual “is also used as a reference for the courts and attorneys in assessing the forensic consequences of mental disorders. As a result, *it is important to note that the definition of mental disorder in DSM-5 was developed to meet the needs of clinicians, public health professionals, research investigators, rather than all of the technical needs of the courts and legal professionals*” (emphasis added).<sup>86</sup>

To drive home the point about the need to avoid *unjustified use of this manual as a “cookbook”* on individual cases – let alone as one that can be

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<sup>84</sup> American Psychiatric Association, *Desk Reference to the Diagnostic Criteria for DSM-IV-TR* (Washington, D.C.: American Psychiatric Association, 2000) at xi-xii.

<sup>85</sup> American Psychiatric Association, *Desk Reference to the Diagnostic Criteria for DSM-IV-TR* (Washington, D.C.: American Psychiatric Association, 2000) at 13-14.

<sup>86</sup> American Psychiatric Association, *Desk Reference to the Diagnostic Criteria from DSM-5* (Arlington, VA: American Psychiatric Association, 2013) at 13.

used by attorneys to cross-examine expert witnesses – it was stated that the writers of the manual intended at most that the manual “may facilitate” the understanding by “legal decision makers” of the “relevant characteristics of mental disorders” – but nonetheless “*serves as a check on ungrounded speculation about mental disorders and about functioning of a particular individual*” (emphasis added).<sup>87</sup>

Moreover, the editors further state that diagnostic information about “longitudinal course may” – not must or falls into the realm of “reasonable medical probability, let alone certainty” – “improve legal decision making when the legal issue concerns an individual’s mental functioning at a past or future point in time.”<sup>88</sup>

These cautions and caveats for non-sufficient and the editors go on to drive home the point once again that “the use of *DSM-5* should be informed by an awareness of the *risks and limitations of its use in forensic settings*. *When DSM-5 categories, criteria, and textual descriptions are employed for forensic purposes, there is a risk that diagnostic information will be misused and misunderstood. These dangers arise because of the imperfect fit between the*

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<sup>87</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 13.

<sup>88</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from DSM-5 (Arlington, VA: American Psychiatric Association, 2013) at 13.

questions of ultimate concern to the law and the information contained in a clinical diagnosis” (emphasis added).<sup>89</sup>

Then, if the reading attorneys have still not yet gotten the point, the editors go on to once again hammer home the specific point that “*it is precisely because impairments, abilities, and disabilities vary widely within each diagnostic category that the assignment of a particular diagnosis does not imply a specific level of impairment or disability*” (emphasis added).<sup>90</sup>

Note then that attempts made by plaintiff experts – or life care planners – or economists – or vocational rehabilitation specialists – to assign “a specific level of impairment or disability” that is in any substantial way contingent upon the assignment of a “particular diagnosis” to a specific individual frankly appeared to be invited by the manual writers to invoke *Daubert* and try to preclude admissibility of such testimony....

Finally, if this is not enough, the authors of *DSM-5* specifically state that the “use of *DSM-5* to assess for the presence of a mental disorder by non-clinical, non-medical or otherwise insufficiently trained individual individuals” – Attorneys? Life care planners? Psychologists? Social workers? – is not advised. “*Non-clinical decision makers should also be cautioned that a diagnosis does not carry any necessary implications regarding the etiology or causes of the*

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<sup>89</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from *DSM-5* (Arlington, VA: American Psychiatric Association, 2013) at 13.

<sup>90</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from *DSM-5* (Arlington, VA: American Psychiatric Association, 2013) at 14.

*individual's mental disorder*" or the individual's degree of control over behaviors that may be associated with the disorder" (emphasis added).<sup>91</sup>

◆**PRACTICE NOTE:** Comments like the above clearly – in cases of traumatic brain injury even when criteria for cognitive disorders are met – must along with their experts right from the beginning of the case -- take into account this warning about the use of any *DSM-5* diagnosis as **not** carrying any "necessary implications regarding the etiology or causes of the individual's mental disorder, the individual's degree of control over behaviors that may be associated with the disorder."

Taken as a whole then, and comparing *DSM-5* with its predecessor, it is at least one of the editors' opinion that this manual frankly overall makes the process of proving "causation" with the help of expert testimony, establishing permanency and disability, and even establishing the validity of a late onset cognitive disorder that does have its origins in traumatic brain injury will be far more difficult under *DSM-5* than it has been in the past under *DSM-IV* and *DSM-IV-TR*.

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<sup>91</sup> American Psychiatric Association, Desk Reference to the Diagnostic Criteria from *DSM-5* (Arlington, VA: American Psychiatric Association, 2013) at 14.

Consequently, plaintiff attorneys will be well advised to literally invest in a far more complete “triaging” process and neurodiagnostic screening involving multiple disciplines including neurology, neuropsychology, neuroimaging – and neuropsychiatry – than this examiner has seen employed during nearly forty years of consulting with plaintiff attorneys.

Defense counsel similarly when faced with settlements demands at any early stage in the case usefully would consider the importance of being willing to pay for treatments that result in resilience and recovery as payment for treatments that have been established as likely accelerating recovery and returning plaintiff litigants who present as disabled to the workforce by making vocational rehabilitation arrangements a mandatory part of any settlement discussion.

§12:4.14 The other 800 pound gorilla in the room that DSM-5 also leaves out: the “unused” brain

As comprehensive as *DSM-5* is, there is one critically important clinical as well as forensic issue that *DSM-5* ignores: what a recent journalist writing in the August 3, 2014 *New York Times* described “*Three Myths About the Brain.*”<sup>92</sup>

This explains what probably is one of the most important – yet consistently ignored by plaintiff and defense attorneys alike – the “popular myth” that “we use only a small portion – 10 percent is the figure most often cited – of our brain. An early incarnation of the idea can be found in the work of two different 19<sup>th</sup> century French neurophysiologists, Pierre Flourens and Brown, Sequard. The latter at 1876 “wrote of the powers of the human brain ‘that very few people develop very much, perhaps nobody quite fully....

“The newly released movie, ‘Lucy’ about a woman who has acquires super human abilities by tapping the full potential of her brain, is only the latest and most prominent expression of this idea.”<sup>93</sup>

The writer goes on to state that “myths about the brain typically arise in this fashion: An intriguing experimental result generates a speculative

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<sup>92</sup> Hickok, *Three Myths About the Brain*, *The New York Times*, 9 (August 3, 2014).

<sup>93</sup> Hickok, *Three Myths About the Brain*, *The New York Times*, (August 3, 2014) at 9.

interpretation that a small part of the lobe is sufficient (that is later over extended or distorted) will use only 10% of our brain, the character ultimately infiltrates pop culture and takes on a life of its own, quite independent from the facts which spawned it."<sup>94</sup>

He then discusses two other myths, including "the idea that the left and right hemispheres of the brain are fundamentally different" although the writers claims that "the fact is that the two sides of the brain are more similar to each other than they are different, and both sides participate in most tasks, especially complex ones like acts of creativity and peaks of logic."<sup>95</sup>

He then goes on to describe a "new myth" which is "the myth of mirror neurons, or the idea that a certain class of brain cells discovered in the Macaque monkey is the key to understanding the human mind...it has been claimed that humans have their own mirror system (most likely true), which not only allows us to understand actions but also underlies a wide range of our mental skills – language, imitation, empathy – as well as disorders, such as autism in which the systems is said to be dysfunctional."<sup>96</sup>

Yet "the motor neuron claim has escaped the lab and is starting to find its way into popular culture.... But as with older myths, this speculation of course

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<sup>94</sup> Hickok, Three Myths About the Brain, The New York Times, (August 3, 2014) at 9.

<sup>95</sup> Hickok, Three Myths About the Brain, The New York Times, (August 3, 2014) at 9.

<sup>96</sup> Hickok, Three Myths About the Brain, The New York Times, (August 3, 2014) at 9.

has connection to the data. We now recognize that physical movements themselves uniquely determine our understanding of them.”<sup>97</sup>

The significance of all of the above? Far more than the editors have seen attorneys on either side acknowledge.

The “10% myth” holds great potential pitfalls for plaintiff attorneys as well as great temptations to over-simplify and misuse it by defense counsel.

Simply put, assuming the brain has one hundred billion neurons, and we use – only! – ten billion neurons – how many neurons need to be killed or even damaged before any kind of true *functionally limiting and clinically significant permanent damage results?* A hundred thousand neurons? A million neurons? A billion neurons? The reality is that no one really knows.

The legal significance of this? Quite simply that even establishing beyond all doubt that some brain cells have been damaged as a result of a traumatic injury, with the areas of damage being documented quite clearly by all available clinical and research tools (MRI, CAT scans, diffusion tensor imaging, PET scans, neuropsychological tests), the critical legal question remains basically – so what? If it takes killing off more than a billion neurocells to link these findings with actual “real world, real time” functional disabilities, the credibility of all of these data call into question *if they are used by plaintiff attorneys to try to establish causal connections between the presence of these data abnormalities*

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<sup>97</sup> Hickok, Three Myths About the Brain, The New York Times, (August 3, 2014) at 9.



*on one hand, specific "causation" from traumatic brain injury on the other, and permanency and disability as well?*

At the same time, if we do have 90% of our brain neurons – 90 billion brain neurons as well as corresponding synapses – what is the purpose of that reserve pool of neurons?

Since one must speculate here since there is no real scientific proof one way or the other, the editors rely on a variation of assumed common sense – that these neurons are in the brain for a purpose, and that a likely purpose at least as a hypothesis is to provide a pool of resilience – not just an area for future brain or evolution.

In other words, if 90% of the brain's neurons are being held in reserve at the present time to be recruited for brain resilience, there will be profound implications for both sides of any brain injury case:

1. From the defense perspective, if and when it is scientifically demonstrated – even more than presently – that these brain cells can be recruited by dedifferentiation, by providing areas of functional reserve, etc. – and plaintiff claims that "hard" findings on neuroimaging necessarily predict permanency can be totally discounted by jurors.

Even, for example, the proving of various encephalomalacia – brain softening or "holes in the brain" – itself may not necessarily

establish permanent brain functional damage if other areas of the brain can be shown to take on the functions of these damaged areas much like after a heart attack although parts of the heart tissue are destroyed “collateral circulation” around the damaged areas occurs that becomes actually the scientific basis of the cardiac rehabilitation.

2. So too why could not successful cognitive retraining be explained as in part a function of recruiting of undamaged cells to take on functions of permanently destroyed ones?

At the same time, as – the editors believe – scientific links involving the functioning of the “silent majority” of the 90% of brain tissue in functional resilience likely would impose important financial as well as legal duties on insurers to pay for and plan for paying for as extensive a period of treatment that would maximize the recruitment of such currently claimed inactive brain cells into the rehabilitation process.

3. To put this in different terms, defense as well as plaintiff life care planners would need to plan for the costs and length of time that neurorehabilitation and cognitive remediation techniques and treatments are used – based on forthcoming experimental data

and clinical experience that describes the conditions under which brain resilience can and should be maximized.

This also has advocatability to the second “myth” described in the *New York Times* article: The claim that the “right and left sides of the brain” are “fundamentally different. If they are not, why then could not each side of the brain as a whole be trained to take on functions of the other side if there is damage?

If research demonstrates this then another corollary that defense counsel must be aware of and plaintiff counsel must explore is whether or not there is demonstrably substantial damage to the corpus callosum – the part of the brain that links the two hemispheres.

Finally, to the extent that “mirror neurons” are demonstrated to be present and functionally important to human beings, these too would at least in principle provide another pool of potential resilient neurons that could lead to the need to pay for clinical treatments that maximize the improvement of such neurons into the rehabilitation process.

◆**PRACTICE NOTE:** Wise plaintiff and defense counsel will, even from the very start of cases, bear in mind the likelihood that their cases will be settled. One of the keys to such settlement would be the increasing recognition on both sides about the need to define – and “sell” to plaintiff litigants as well as to insurance adjustors – the

concept that even established brain injuries do not necessarily result in global permanent functional impairment – as well as the corresponding concept that treatment to prevent global permanent impairment must be incorporated into the therapeutic and life care plans made by the experts and attorneys on both sides to reach some type of mutual understandings on these complex issues for settlement purposes.

§12:4.40 New neuroscientific tools that should be used as early as possible when choosing clients: diffusion tensor imaging

Mr. Bruce Stern in the prior edition of this Supplement wrote a clear, thorough and comprehensive review of the recent series and “The role of diffusion tensor imaging and diagnosing and treating brain injuries – admissibility under *Daubert*.”<sup>98</sup>

He noted that DTI “can” be used “to map out the white matter portion of the brain” because in a mild case “water can move a significant distance in the brain over various types of tissue components, doctors can track their movements to determine the layout of certain parts of the brain with better accuracy than a standard MRI. The movement of the molecules is anisotropic – that is, it is not the same in all directions.”<sup>99</sup>

This type of anisotropism occurs when “the presence of obstacles limit molecular movement in some directions” – with Mr. Stern carefully using the qualifying phrase “such as” in “the white matter and the brain.”

Mr. Stern goes on carefully to use the word “can” before proceeding in his discussion of the implications of DTI: because DTI can “detect” this type of anisotropism it “can” be “used to help diagnose persistent post [concessional]

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<sup>98</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 76.

<sup>99</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 76.

syndrome (PCS),” a syndrome which indeed does as he put it “plagues many TBI victims.” He then notes that it “can” result “in behavioral, cognitive and somatic problems” plaguing as many as “15% PCS victims” according to the literature.<sup>100</sup>

He notes that “researchers” do “believe” that persistent post-concussional syndrome “may” be “predominantly caused by diffuse axonal injury” within the white matter of the brain – highlighting the potential importance of “studying” diffuse axonal injury – a process which “may” lead to “breakthroughs” in research involving mild traumatic brain injury. Overall then brain DTI is considered “a promising tool” to study the diffuse axonal injury.<sup>101</sup>

Indeed, review of the recent neurological and neuroradiological literature is filled with examples of studies that underscore the real potential clinical as well as research – and implicitly future legal – uses of diffusion tensor imaging in providing data *consistent with* traumatic brain injury.

Typical of such research was an article that was prepared on-line and then republished in the *Journal of Neurology* by J.Y. Wang and Associates.<sup>102</sup>

The study demonstrated that within two days after a traumatic brain injury, DTI “damage” to the white matter were deemed to be present in multiple

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<sup>100</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 76.

<sup>101</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 76.

<sup>102</sup> Wang, et. al., *Longitudinal Changes of Structural Connectivity and Traumatic Axonal Injury*, 27 *Neurology*, 818-826 (2011); with information deemed “current” as of March 4, 2003. See also Kline and Bigler, *White Matter in Traumatic Brain Injury: Dys- or Disconnection?* 27 *Neurology* at 810.

areas including the “corpus callosum, cingulum, cerebral peduncular, in the inferior part of the occipital lobe, and elsewhere.

A recent article published on-line on February 11, 2014, by Sharp and colleagues, specifically investigated connections between two different networks “the salient network and the default mode network” of important information processing. They “highlight” how such structural damage – and note the vilification here – “might” interact with inflammatory and neurodegenerative processes involved in, amongst other things, Alzheimer’s Disease and chronic traumatic encephalopathy.<sup>103</sup>

In another on-line article and published in *Science Daily* on 7/16/14 by the American Academy of Neurology confirmed the basic principle that “even” mild traumatic injury “may” cause “brain damage and thinking and memory problems,” again focusing on white matter. Test scores and verbal letter fluency, a test of thinking and memory skills, were 25% lower than in healthy people. This was strongly related to the measures of white matter damage.

Note at the same time that “one year after the injury, the scores on thinking and memory tests were the same *for the people with brain injuries and no injuries*, but there were *still areas of brain damage in people with injuries*” (emphasis added).

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<sup>103</sup> Sharp, et al, Network Dysfunction After Traumatic Brain Injury, published on-line in X. Nature Reviews, Neurology 156-166 (2014).

Note that the study author, Andrew Blamire, Ph.D., of New Castle University in the United Kingdom did conclude that *"these results show that thinking skills were recovering over time....the areas of brain damage were not as widespread across the brain as previously, but focused concern areas of the brain"* (emphasis added) – which in turn *"could indicate that the brain was compensating for the injuries"* (emphasis added).<sup>104</sup>

At the same time and once again demonstrating the limits of white matter studies including diffusion tensor imaging in demonstrating, let alone proving, "causation" between the imaging findings and the presence of traumatic brain injury as the reason was another study published on February 12, 2014 that demonstrated individuals who were not noted to be brain damaged but rather sufferers of bipolar I disorder who had psychotic features had, compared with controls *"significant reductions of meaned fractional anisotropy values along the body of the splenium of the corpus and left cingulum, and the interior part of the left arcuate fasciculus....patients with psychotic features had a lower mean generalized fractional anisotropy value than along the outer body of the corpus callosum"* (emphasis added).<sup>105</sup>

◆**PRACTICE NOTE:** Note that all of these studies once again showed that, while diffusion tensor imaging clearly can in many cases be a

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<sup>104</sup> Sarrazin, et. al., A Multicentered Tractography Study of Deep White Matter Tracts in Bipolar I Disorder: Psychotic Features and Interhemispheric Disconnectivity," 71 JAMA Psychiatry 388-391 (2014).

<sup>105</sup> Sarrazin, et. al., A Multicentered Tractography Study of Deep White Matter Tracts in Bipolar I Disorder: Psychotic Features and Interhemispheric Disconnectivity," 71 JAMA Psychiatry (2014) at 388.,



sensitive indicator that can detect the presence of mild traumatic brain injury, it is neither specific for doing so nor justified in being used either to prove specific “causation” on one hand or “permanency” of brain injury on the other.

Partly as a result of this current state of the art, researchers are trying to focus more specifically on the presence of there being parts of the brain that would not demonstrate damage but for traumatic brain injury being a likely cause.

One such area is that of cerebral microbleeds (CMBs).

One recent study published on-line on 7/11/14 from radiologists from radiologists in China discussed “diffuse axonal injury after traumatic cerebral microbleeds: evaluation of imaging techniques.”<sup>106</sup>

However, once again it was noted that even the presence of these and associated hemosiderin were *not specific* for traumatic brain injury because these lesions also are indeed “primarily seen in cerebral amyloid angiopathy and hypertensive vasculopathy.”

One of, if not the most comprehensive (in 2012) transcripts describing the current state of the art of “Advanced Neuroimaging and Traumatic Brain Injury” appeared in the September, 2012 issue of *Seminars in Neurology*.<sup>107</sup>

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<sup>106</sup> Jiu, et. al., (12) [nrronline.org/article](http://nrronline.org/article), 1222-1230 (2014).

While praising the fact that “the growing body of evidence that FA [fractional anisotropy, the foundation of DTI findings] relied that biologically valid and functionally relevant assessment of white matter integrity” is such that indeed “suggests” that “clinical implementation of DTI is rapidly approaching,” even having been used by the United States military in Afghanistan to detect traumatic axonal injury “in military personnel exposed to blast-related head trauma” but nonetheless were a number of barriers to the full acceptance of DTI findings with problems being “broadly characterized as pertaining to aquisitional data post-processing.”<sup>108</sup>

Specifically, the authors note the following problems that *in its current state* diffusion tensor imaging being able to be used as a reliable instrument, even regarding clinical diagnosis (let alone as a standalone technique being able to be used in making any statements about “causation”):

1. “From a data acquisition standpoint, an important methodological issue is that of reproducibility of a quantitative anisotropy and diffusivity values. Both hardware (i.e., the MRI scanner) and software (i.e. the pulse sequence) may affect the characterization of the diffusion tensor.

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<sup>107</sup> Edlownwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14.

<sup>108</sup> Edlownwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 6.

“With regard to hardware, the degree to which a particular type of MRI scanner alters quantitative diffusion measurements, even using the same magnetic field strength and the same DTI sequence has yet to be determined.

“Potential effects of the scanner on the diffusion measurements include inconsistent shimming, gradient miscalibration, and gradient non-linearity, each of which may lead to signal attenuation and/or inconsistent measures.”<sup>109</sup>

2. “As a result of this concern for scanner-related differences in DTI measurements of anisotropy, some investigators have argued that anisotropy measurements from TBI patients should be normalized to anisotropy measurements acquired on controls using the same MRI scanner.

“Clearly, the need to normalize data on each scanner would represent a major barrier to widespread clinical utilization of DTI scalar metrics, and therefore, the effect of scanner type and magnetic field strength on DTI quantitative measurements is currently an active area of research.

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<sup>109</sup> Edlowwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 8-9.

“Even if standardized hardware and software are ultimately used in DTI analyses, white matter anisotropy may still vary with gender and age, and therefore normalization according to these demographic characteristics may be necessary.

“Thus, the utility of DTI scalar metrics in prognosticating outcomes on an individual patient basis is still up for debate. Of the various scalar metric, FA currently appears most useful for diagnosis, prognosis, and exploring mechanisms of brain injury and recovery.”<sup>110</sup>

3. “Another important consideration in the data acquisition stage of DTI is the number of directional diffusion gradients that are used to measure FA.

Although DTI data can be acquired with as few as 6 diffusion-encoding directions, Jones demonstrated that at least 20 directional measurements may be needed to generate accurate, reproducible measures of FA.”<sup>111</sup>

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<sup>110</sup> Edlowwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 7.

<sup>111</sup> Edlowwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 8-9.

4. "Adding further complexity to the question 'what is the right DTI sequence to use clinically' are the results of recent studies showing that even more diffusion directions (i.e. >30) may be needed to produce reliable diffusion tensor tractography results."<sup>112</sup>
5. "Patient motion during a DTI scan can significant alter FA measurements, which argues for minimizing the time of data acquisition whenever possible. Reduction of DTI data acquisition time is currently an active area of investigation that will be important to facilitating clinical implementation."
6. "Methodological considerations during the statistical analysis stage of evaluating DTI metrics have an equally substantial impact on the validity of the data. The mean FA within a white matter bundle can be measured using a variety of methods, including manual tracing of a region of interest (ROI), automated segmentation of an ROI and voxel-based analysis.

"Manual ROI placement has been used frequently in DTI studies of patients with TBI and in patients with severe TBI this approach may be more feasible than template-based

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<sup>112</sup> Edlowwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 8-9.

approached, because acute tissue shifts and chronic atrophy may preclude automatic segmentation of white matter tracts.

“However, manual tracing of white matter ROIs can be time consuming and requires neuroanatomic expertise, which limits the feasibility of this approach in clinical practice.”<sup>113</sup>

7. “Both manual and automated segmentation of white matter ROIs are susceptible to a variety of errors, including volume-averaging of FA in voxels that contain both white matter and nearby non-white matter structure.”
8. “Voxel-based analysis may be performed more rapidly and provides the benefit of increased sampling (i.e., whole-brain voxel-basis analysis), but this technique is susceptible to false positive findings and therefore requires correction for multiple comparisons.”  
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9. When a three dimensional variation of diffusion tensor imaging is used, diffusion tensor tractography which does provide three-dimensional analyses in the human brain of living beings, here the

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<sup>113</sup> Edlownwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 8-9.

<sup>114</sup> Edlownwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 8-9.

authors caution that “regardless of which ROI methodology or tractography algorithm is being used, it is important to emphasize that tractography is an inferential technique in which white matter tracts are reconstructed on the basis of water diffusion measurements. The number of axons that corresponds to a single fiber tract remains unknown..... All tractography results the editors predict with caution given the inherent limitations of the technique.”<sup>115</sup>

The authors conclude that “despite *preliminary* evidence that diffusion tensor tractography may be used to detect TAI (Tract Axonal Injury) and predict outcomes in patients with TBI, major obstacles and challenges to clinical implementation remain.”<sup>116</sup>

1. “The results of any tractography analysis depend significantly upon the data acquisition and post-processing parameters, and therefore tractography results must always be interpreted in the context of the analytic techniques that are being utilized.”

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<sup>115</sup> Edlowwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 8-9.

<sup>116</sup> Edlowwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 9.

2. "Several of those mythological factors have been discussed above in the section on DTI, but there are additional considerations that are unique to diffusion tensor tractography."
3. "The potential confounding effect of extracellular edema on DTI measurements of FA and diffusion tensor tractography measurements of white matter connectivity can be more broadly be considered in the context of current debates about the optimal timing of data acquisition. If DTI scalar metrics and diffusion tensor tractography are to be integrated into clinical practice, clinicians will need to consider how the dynamic pathophysiological changes associated with TAI will affect data interpretation."
  - a. "In the acute stage of TAI, white matter FA changes are variable with studies showing both increases and decreases in FA. These endogenous FA changes in the acute stage of TAI may be attributable to the differential effects on intracellular and extracellular edema on FA."
  - b. "In the former, FA may increase, since more water molecules are trapped in the intracellular compartment where diffusion preferentially occurs along the axis of the axon."
  - c. "In the latter, FA may decrease since more water molecules are located in the extracellular compartment, where diffusion



is more isotropic (non-directional). Given that complete axonal transection and incompletely, non-disruptive axonal injury do not have clear distinguishable profiles of intracellular and extracellular edema, the heterogeneous FA responses observed in the acute stage of TAI can make outcome prediction difficult.”

- d. “In other words, since the pathophysiological and radiologic profiles of complete (irreversible) and incomplete (reversible) TAI in the human brain are incompletely understood, the fate of any region of white matter affected by TAI is difficult to determine in the acute period. Moreover, individual patients may contain multiple TAI lesions with variable increases and decreases in FA, further complicating the assessment of individual lesions.”

The authors conclude that chronic rather than acute or sub acute traumatic axonal injury that “appears to have a more predictable effect on FA, with studies consistently showing that a decline in FA correlates with poor neurocognitive test performance for GOSE [Glasgow Outcome Scale-Extended] scores.”<sup>117</sup>

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<sup>117</sup> Edlow et al., *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author

Consequently, the authors conclude that it is “possible” that diffusion tensor imaging and diffusion tensor tractography “will provide more clinically relevant and readily interpretable data in the sub-acute than in the acute period.”<sup>118</sup>

In any event, the authors concluded that ultimately clinicians [and attorneys surely, the editors note] will need to balance their competing goals of obtaining advanced imaging data early enough to guide diagnosis, prognosis, and therapeutic decision-making and acquiring the data late enough that the confounding effects of acute edema are minimized.”<sup>119</sup>

Finally, the authors talk about a variety of new cutting edge techniques including High Angular Resolution Diffusion Imaging (HARDI) tractography, one variation of which “provides perhaps the greatest potential for clinicians to obtain biologically valid, quantitative metrics of white matter connectivity in patients with TBI.”

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Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 10.

<sup>118</sup> Edlowwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 10.

<sup>119</sup> Edlowwu, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 10.

However, even these techniques were carefully noted to be having applications still “in its infancy” with “substantial work remaining before the approaches are validated for clinical use.”<sup>120</sup>

Mr. Stern in doing his review of the scientific literature does note that diffusion tensor imaging can have positive findings in many conditions in addition to traumatic brain injury. He notes that “examples include multiple sclerosis, leukoencephalopathy, Wallerian degeneration,” Alzheimer's Disease, subcortical infarcts, and a type of arteriopathy.<sup>121</sup>

The technique also “could be used to assess pain maturation in children, newborns, or premature babies.” DTI data also has “been recorded in left frontal regions in schizophrenic patients and in left temporal-parietal regions in dyslexic adults, in “brain tumor grading, trauma, hypertensive hydrocephalus, AIDS, eclampsia, leukoaraiosis, migraine and the spinal cord in animals and humans.”<sup>122</sup>

He notes that doctors “may” be able to make “detection” of mild traumatic brain injury also “more accurate and efficient to the expanded use of DTI,” with him citing medical literature supporting this view<sup>123</sup> including

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<sup>120</sup> Edlow, *Advanced Neuroimaging in Traumatic Brain Injury*, 32 (4) *Seminars in Neurology* 374-400 (2012); <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC37794691-35> (8/5/2014), part of NIH Public Access Author Manuscript available in PMC format on 1/29/14 (PMC I.D.: pmc3779469, NIH, MSID: NIHMSO5421); online version at 10-12.

<sup>121</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 77.

<sup>122</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 77.

<sup>123</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 77-78.

specifically recently in regard to fractional anisotropy reductions in the corpus callosum.

At the same time, note that he carefully uses the words "hypothesized" and the qualifications when he talked about *potential* links between DTI findings and the likelihood "that the microstructure brain damage in MTBI patients can" be detected with diffusion tensor imaging. Note that he characterized in the conclusions of one of the researchers that found the evidence was "strong" the conclusion was that DTI "can" detect "micro structural damage in the white matter of MTBI patients" with his highlighting it's "potential" use in clinical settings.<sup>124</sup>

He also goes on to cite the data indicating that on one hand "there was a great variability in DTI" but that on the other the data "nonetheless" were "striking in that they all suggest" that "radiological evidence supports more unsettled brain injuries than MTBI."<sup>125</sup>

Finally, he cites a 2013 article on the use of DTI in studying traumatic brain injury as presenting "evidence" for the "association" between "elevated axial diffusivity, and the processing speed and executive function in the TBI group providing a snapshot of white matter track recovery and its relationship with neuropsychological variables in chronic TBI."<sup>126</sup>

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<sup>124</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 79-80.

<sup>125</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 84.

<sup>126</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12:30 @ 86.

The clinical conclusion one reasonably can draw from all of the above?

1. That diffusion tensor imaging is indeed a promising *research* tool;
2. That diffusions tensor imaging *can* be a positive finding for mild traumatic brain injury, including specifically the “callosum” as well elsewhere;
3. That DTI studies have “*potential use for this in clinical settings – and as a consequence in ultimately forensic setting*”;
4. That DTI findings are not *specific to traumatic brain injury but can be positive in a host of other conditions; and*
5. That notwithstanding the above, and as discussed later in this supplement regarding prion disease the ultimate goal of medicine is to take into account and use all data that had potential usefulness, it is completely reasonable from a clinical basis for evaluating clinicians to benefit from the use of diffusion tensor imaging to see if the DTI findings do or do not “match up” with the other clinical and radiological findings uncovered during the assessment of mild traumatic brain injury.<sup>127</sup>

◆**PRACTICE NOTE:** Note then that although the finding of abnormal diffusion tensor imaging has *not*, even from a clinical let alone legal “stand alone” method of proving a clinical, let alone legal, unique

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<sup>127</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 86.

1:1 causal connection between abnormal DTI white matter findings and the previous presence of a mild traumatic brain injury, the data nonetheless are extremely useful to a clinician in determining whether or not the diffusion tensor imaging findings add to or subtract from the reasonable medical probability/likelihood that a true clinical “causal connection” exists between the DTI data and the likelihood of a previous mild traumatic brain injury having been the specific cause of the patient’s current clinical condition.

In this regard, the editors suggest that it would be extremely helpful for plaintiff attorneys in particular to use DTI as *part of their case screening and selection assessments*. A negative diffusion tensor imaging study would be highly consistent with a lack of white matter injury and thus, as physicians should use diffusion tensor imaging to increase or reduce their assessment of the clinical likelihood of a “causal connection” between the findings and the existence of mild traumatic brain injury, so should attorneys use DTI findings to increase or decrease their willingness to take on a mild traumatic brain injury case in the first place.

Positive DTI findings on the other hand should be used to increase the competence and aggressiveness with which plaintiff attorneys pursue a potential mild traumatic brain injury case.

Finally, whether or not an attorney takes on a client presenting with mild traumatic brain injury symptoms and/or claims in part should be determined by the plaintiff attorney's initial "triaging" assessment about what likely will happen if defense counsel contest the admissibility of the diffusion tensor imaging data and/or if admissible, its credibility.

These issues in the context of another risk of using DTI data that frankly this editor (JB) has not yet seen being given the concern it warrants by plaintiff attorneys in particular: the "Trojan horse" phenomena of defense attorneys being perfectly content not to fight diffusion tensor imaging on the admissibility front but rather to get plaintiff attorneys into making exaggerated claims so that DTI specificity and/or to establish "causal connections" between the findings and the cause of those findings specifically being useful in "proving" connections between the data and mild traumatic brain injury.

The likelihood that defense counsel adopt this "Trojan horse" approach in the editors' view is increased by the likelihood that illegal barriers to admissibility of diffusion tensor imaging data increasingly will fall.

As Mr. Stern rightly pointed out in the previous edition discussing "lowered diffusion tensor imaging and diagnosing and treating brain injuries – admissibility

under *Daubert*<sup>128</sup> although diffusion tensor imaging uses “a relatively fledging technology” and “there is as yet little legal precedent in the United States” regarding the admissibility of DTI, nonetheless “there have been several cases in which courts had admitted testimony into evidence in which DTI was *one of the methods* that an expert utilized to determine whether a person was suffering from a traumatic brain injury” (italics added).<sup>129</sup>

Mr. Stern goes on to cite a variety of cases in Mexico, Colorado, Florida and elsewhere in which the *Daubert* challenges to the admissibility of DTI were defeated.<sup>130</sup>

At the same time, the determination that, as noted by Mr. Stern, Board-certified radiologists testify “that DTI studies are definitely accepted by practicing radiologists and are depended upon by physicians who order them to assist in diagnosing and treating traumatic brain injury” also contain the statement that diffusion tensor imaging, if it's available, is helpful in *many indications, including, but not limited to, acute and chronic neurological deficits, headache, mental status change suspicious of non-accident trauma*” as well as “post-traumatic conditions,” *amongst others* (emphasis added).<sup>131</sup>

It is important to note that Mr. Stern gave a complete description of a Colorado case in which diffusion tensor imaging was found to be admissible

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<sup>128</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 87.

<sup>129</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 88.

<sup>130</sup> See Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 89-90.

<sup>131</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 89-90.



that involve the court expressing "serious concerns about the appropriateness of diagnosing mild traumatic brain injury as the cause of the abnormality based solely upon the presence of abnormalities of revealed by the technology. It was undisputed that some, if not all, of the abnormalities revealed by the testing could result from many causes" (emphasis added).<sup>132</sup>

"Thus, the court found that it was the intention of the plaintiff to elicit from Dr. Orrison an opinion that the presence of these abnormalities, *without more, is diagnostic in mild traumatic brain injury, defendants would be permitted to review their motion and in all likelihood his opinion would be disallowed.*

"The court found that the technology had not yet been proven to be of sufficient value as to reasonably exclude other reasonable probable causes" (emphasis added).<sup>133</sup>

At the same time, as Mr. Stern explained, "the court understood that Dr. Orrison's opinion was based *not only on his reading of the diagnostic testing, but coupled with the plaintiff's history. The court noted that this is a common issue that arises in tort cases and that it would be left to the attorneys to address any limitations on cross-examination*" (emphasis added).<sup>134</sup>

Mr. Stern then quite accurately summarized all the available legal implications of the above by concluding that "while DTI cannot solely be the

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<sup>132</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 93.

<sup>133</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 92-93.

<sup>134</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 93.

grounds for making a diagnosis of traumatic brain injury, DTI abnormalities, *along with the clinical exam, history and review of medical records* creates a sound basis for the diagnosis” (emphasis added).<sup>135</sup>

The only caveat the other editor of this volume (JAB) has Mr. Stern’s summary statement was the words “provides” as opposed to “often will problem – but does not necessarily always provide” a “sound basis for the diagnosis.”<sup>136</sup>

This editor also has independently reviewed the neuropsychiatric as well as legal literature related to diffusion tensor imaging, with the neuropsychiatric aspect of such being addressed in the June, 2014 Cumulative Supplement to a book he co-authored with Mark Dotson, *Emotional Injuries: Law and Practice* (Thomson West, 2014) in §19:19 “the use and misuse of newer diagnostic tools.”

Here it is noted that, related to the uses of tests now and in the future in court, that “data on specificity and sensitivity of this technique typically have not been included in the articles reviewed, leaving open the question as to whether this technique – like many other neuroradiological techniques that have preceded it – though *sensitive measures of brain injury* are ‘probative of the *specific*’ cause of the abnormalities found” (emphasis added).<sup>137</sup>

“Indeed, a recent study using diffusion tensor imaging was not done on individuals with traumatic brain injury but rather on children with attention-

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<sup>135</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 93.

<sup>136</sup> Stern and Brown, *Litigating Brain Injuries 2013-2014 Supplement*, §6:12.40 @ 93.

<sup>137</sup> Dotson and Brown, *Emotional Injuries: Law and Practice, 2004 Cumulative Supplement* (Eagan, MN: Thomson Reuters) §19:19 at 1048-1049.

deficit/hyperactivity disorder. These studies revealed that, not only are the frontal lobes and cerebellum smaller in patients having this condition, frequently there are also 'abnormalities in the fiber pathways in the frontal cortex, basal ganglia, brain stem and cerebellum' in ADHD children."<sup>138</sup>

Another issue that this examiner has up-to-date never seen addressed either by plaintiff or defense attorneys dealing with diffusion tensor imaging relates to the possibility if not likelihood that, *over time DTI findings consistent with axonal injuries can spontaneously resolve or even disappear.*

To put this in another way, an issue seemingly almost universally ignored by both plaintiff and defense attorneys so far relates to the possibility or even likelihood that, with proper medication, cognitive rehabilitation and other treatment, the white matter abnormalities that all too often are documented *only* right after a traumatic brain injury and never followed up upon by anyone in fact can resolve with proper treatment as a result of *neuroplasticity and treatment effectiveness.*

Note for example recent research done by Manzar Ashtari, Ph.D. that found that the axonal injury/pathway abnormalities in fact have been "less pronounced in children" who have been treated with stimulant medications, compared with those who had not received such treatment. Dr. Ashtari in fact

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<sup>138</sup> Dotson and Brown, *Emotional Injuries: Law and Practice*, 2004 Cumulative Supplement (Eagan, MN: Thomson Reuters) §19:19 at 1048-1049.

has made a comment – so far ignored by all attorneys and in all court decisions this examiner has reviewed that the results of his studies indeed “*suggest that perhaps the medication is doing something to normalize the brain abnormalities such as remyelinating the axons*” (emphasis added).<sup>139</sup>

Dr. Ashtari also had noted that not just his but “other studies into the effects of medication showed that the white matter of the brain increases to close to normal in medicated children.”<sup>140</sup>

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<sup>139</sup> See Dotson and Brown, *Emotional Injuries: Law and Practice, 2004 Cumulative Supplement* (Eagan, MN: Thomson Reuters) §19:19 at 1049.

<sup>140</sup> See Dotson and Brown, *Emotional Injuries: Law and Practice, 2004 Cumulative Supplement* (Eagan, MN: Thomson Reuters) §19:19 at 1049.

**Chapter 13. Pre-Trial Preparations**

§13:75 The uses and misuses of video depositions and video testimony

In many states plaintiff counsel have the right to have defense neuropsychiatric and other neurobehavioral examinations videotaped. At the same time, the editors know of no state which permits clinical assessment by "treating testifiers" similarly to be subject to videotaping.

Conversely, it is the editor's experience that defense counsel, perhaps because of the above limitations on videotaping plaintiff expert examinations, increasingly and aggressively are videotaping plaintiff depositions.

Finally, although live in-court testimony is generally viewed in the editor's experience as much better than video deposition testimony, in some cases judicial and/or attorney unwillingness/refusal to reserve (and in the case of the attorneys) paying in advance for trial time that may not be used necessitates *de bene esse* video depositions be used instead of live testimony.

One of the most recent and thorough explorations of at least part of the video deposition issue and the use of same at trial, and one written from the

plaintiff attorney's perspective appeared in the July 15, 2013 issue of the *New York Law Journal*.<sup>141</sup>

The authors make the important point that "information that we both see and hear is processed and retained better than that which we hear alone. Studies have repeatedly shown that people recall sixty-five percent of the information that they have seen and heard after three days, when compared to 10 percent of information that they have only heard."<sup>142</sup>

The authors note that both the federal rules of single procedures [FRCP30(3)3] and New York State's CPLR (§3113(b)) do permit videotaped depositions without any showing of "special circumstances" – "provided appropriate notice is given and the procedure rules are followed."<sup>143</sup>

The question at the outset therefore is "not whether you can take a video deposition, but whether the video deposition is appropriate for the specific case" – and of course "the question is always whether the video will help or hurt your case."<sup>144</sup>

The authors make the point that when a same deposition is presented in video form as opposed to in transcript form to jurors (e.g., when a witness is outside the court's subpoena power or otherwise unavailable) "that same

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<sup>141</sup> Rubinowitz , et al, *The Use Of Video Depositions At Trial*, 3, 38 *The New York Law Journal* (July 15, 2013).

<sup>142</sup> Rubinowitz , et al, *The Use Of Video Depositions At Trial*, 3, 38 *The New York Law Journal* (July 17, 2013) at 3 citing Mosmann, *Communicating With The 21<sup>st</sup> Century Juror*, 10 *Vori Dire* No. 3 (2003).

<sup>143</sup> Rubinowitz , et al, *The Use Of Video Depositions At Trial*, *The New York Law Journal* (July 15, 2013) at 3.

<sup>144</sup> Rubinowitz , et al, *The Use Of Video Depositions At Trial*, *The New York Law Journal* (July 17, 2013) at 3.

deposition when presented as a video to the jurors will unquestionably hold their attention for a greater period of time and served to enhance the presentation of proof."<sup>145</sup>

Furthermore, the authors rightly point out the "behavioral" advantages of a video deposition, particularly when "you know, prior to taking the deposition, that your adversary [or the adversary's expert] will likely be overly aggressive, annoying or obstreperous in defending the deposition. Knowing that these tactics will be preserved on tape will cause the defending attorney to modify or curtail such behavior."<sup>146</sup>

Moreover, "rude and nasty conduct will unquestionably work to the attorney's disadvantage."<sup>147</sup>

Another advantage of a videotape is that here there was a clear record of how long it takes witnesses to answer questions. Thus, "the witness who thinks long and hard before each answer might come off as one who is less than candid."<sup>148</sup>

Clearly, "the non-verbal response by a witness who pauses for too long a period of time between the questions and the answers runs the risk of being

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<sup>145</sup> Rubinowitz , et al, *The Use Of Video Depositions At Trial*, *The New York Law Journal* (July 17, 2013) at 3.

<sup>146</sup> Rubinowitz , et al, *The Use Of Video Depositions At Trial*, *The New York Law Journal* (July 17, 2013) at 3.

<sup>147</sup> Rubinowitz , et al, *The Use Of Video Depositions At Trial*, *The New York Law Journal* (July 17, 2013) at 3.

<sup>148</sup> Rubinowitz , et al, *The Use Of Video Depositions At Trial*, *The New York Law Journal* (July 17, 2013) at 3.

viewed as dishonest"<sup>149</sup> - a risk of course that is assumed whenever any expert for either side or any witness for either side is videotaped.

Although not discussed in the article, the editors note that one of the potent uses of video depositions in brain injury cases is that they clearly reveal to the jury to what extent the plaintiff in particular is objectively demonstrating the kinds of signs of traumatic brain injury that their own treating physicians testify they have – or if these are demonstrably absent.

♦**PRACTICE NOTE:** In cases during which plaintiffs and their attorneys are asserting that the brain injury caused difficulties in information processing, confusion, short-term memory problems, etc. their video deposition testimony would strongly provide jurors with behavioral evidence of the above.

Conversely, plaintiff lack of confusion or – worse for the plaintiff – had been instances in which the plaintiff made statements during defense depositions during which the plaintiff reminds the defense attorneys that he/she had been asked the very same question twenty minutes before.

Even worse than this – when the plaintiff's facial expressions had been captured on the videotape – with the plaintiff clearly demonstrating anger at the defense attorney when they had been

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<sup>149</sup> Rubinowitz, et al, *The Use Of Video Depositions At Trial*, *The New York Law Journal* (July 17, 2013) at 3.



asked questions to which the plaintiff responds, "What does that question have to do with my case?"

In other words, either way, "truth wins" and the likelihood of that truth being demonstrable to the jury is much greater when there is video deposition testimony that will be used at trial.

## Chapter 14. At Trial: Cutting Edge Science on Key Clinical Conditions

§14:7.23.1 Co-Causality: explaining catastrophic emotional responses to only mild traumatic brain injury: posttraumatic stress disorder

One of the most common clinical scenarios in many motor vehicle accidents involves an automobile accident victim suffering a catastrophic combination of orthopedic, pain, psychiatric stress, and brain injury-related conditions.

♦**PRACTICE NOTE:** Even when the technical degree of brain injury is “mild” – with defense attorneys particularly in the past having in the editor’s experience been involved in cases in which initial CAT studies are negative for brain bleeding, there is a period of loss or alteration of consciousness of no more than a few minutes, there is a period of arguable posttraumatic amnesia of less than twenty-four hours, etc. – the issue of *interactions amongst all of the patients’ clinical conditions invariably gets minimized by defense experts.*

Plaintiff experts on the other hand in this editor’s experience all too often leave out all of the “pertinent negatives” that cast doubt on the severity of the initial brain injury and/or magnify the interactions involved without citing the

data easily available in the emergency room, paramedic, and medical records describing the patient's Glasgow Coma Scale, neurological status, etc..

What experts on both sides all too often fail to address is the presence or absence of yet another and increasingly recognized clinically complicating factor for many victims of trauma: effects of being in intensive care.

A July 23, 2013 article from *The New York Times* provides one of the best reviews of this problem, one easily understandable by a juror.<sup>150</sup>

The article describes a patient who had been “sedated, intubated, and strapped down” in a Texas hospital” – and while there, she was “[w]racked” by paranoid hallucinations and delusions.

These included her claiming she saw helicopters outside of her window “evacuating patients from an impending tornado, leaving her behind. Nurses plotted to toss her into rough lake waters. She hallucinated and escaped from the I.C.U. – she ducked into a food freezer, herself surrounded by body parts.”<sup>151</sup>

The patient despite her recovering physically “for several years” was “tormented” by her stay in the Intensive Care Unit.

Moreover, in addition to difficulty sleeping, she had the kinds of symptoms that one associates with traumatic brain injury – even though she was not seen for that but rather for consequences of “abdominal infections and surgeries”: she had difficulty sleeping and “*short-term memory loss*” (emphasis added).

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<sup>150</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* D1, D5 (July 23, 2013).

<sup>151</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D1.

Moreover, she had symptoms consistent with posttraumatic stress disorder. These included her refusing “to go into an ocean or a lake,” being “terrified to fly or even travel alone” being unable to talk about it because she was afraid that “either people think you are crazy or you scare them,” and having nightmares.<sup>152</sup>

All of this occurred despite the fact that the patient herself was a registered nurse!

The article went on to state that each year up to 35% of the five million patients who stay in an intensive care unit in the United States “may have symptoms of PTSD for as long as two years after the experience, particularly if they had had a prolonged stay due to a critical illness with severe infection or respiratory failure.

“These persistent symptoms include intrusive thoughts, avoidant behaviors, mood swings, emotional numbness and reckless behavior.”<sup>153</sup>

An important point for both plaintiff and defense attorneys is the fact that *the nature of the PTSD symptoms did not necessarily correlate with the nature of the initial injuries, which brought the person to the hospital.*

As the author wrote, unlike other PTSD symptoms that are victims of combat, sexual assault, natural disasters, etc. of course “endure flashbacks” –

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<sup>152</sup> Hoffman, Nightmares After the ICU, The New York Times (July 23, 2013) at D1.

<sup>153</sup> Hoffman, Nightmares After the ICU, The New York Times (July 23, 2013) at D1.

“but there’s are grounded in episodes that cannot often be corroborated. What is unsettling for post-I.C.U. patients is that no one can verify their seemingly real horrors; one patient described a food cart in the I.C.U. selling strips of filleted flesh... I.C.U. patients have vivid memories of events that objectively didn’t occur” (emphasis added).<sup>154</sup>

In other words, the validity and reality of posttraumatic stress disorder being caused by the traumatic incident is not *necessarily* invalidated but rather in some cases actually strengthened for example by patients recalling “being raped and tortured as opposed to what really happened,” with the author giving an example of the true “cause” of the PTSD symptoms being “painful procedures like the insertion of catheters and IV lines.”<sup>155</sup>

◆**PRACTICE NOTE:** The fact that a patient has posttraumatic stress disorder symptoms that are not specifically related to and *objectively* corroborated by what their actual injuries are does *not* rule out the validity or reality of the accident/injury at issue in the lawsuit being highly legally as well as clinically relevant as nonetheless “causing” the patient’s chronic distress and difficulties.

“Certain treatments in the I.C.U. may be grim, but they are essential” with intubation being used as an example. Yet “the feeling of near-suffocation and

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<sup>154</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

<sup>155</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

the inability to speak can be nightmarish. Such invasive features may raise the odds that a patient develops PTSD.”<sup>156</sup>

Furthermore, the longer the I.C.U. stay, the greater the likelihood of subsequent and I.C.U.-caused posttraumatic stress disorder symptoms.

*Moreover, there were data that indicate – in classic “eggshell” fashion – that those who come to the I.C.U. with a prior history of “depression or other emotional difficulties” (emphasis added) may be at more risk for the appearance of this disorder, as they age:*

Although “elderly patients generally recover more slowly” from these problems, it in fact is the younger patients who “may be more likely to develop symptoms of PTSD. Experts suspect that young patients, further from that natural mortality, are even more shaken by the possibility of unanticipated deaths” – with of course the complicating factor being that gunshots and car crashes “tend to happen to younger people” as well.<sup>157</sup>

Although sedation to manage pain and to keep patients from fighting ventilators is a “crucial” part of I.C.U. care, these same sedatives at the same time in many cases “contribute to the patient’s delirium and intense hallucinations, which can return, unbidden for years.”<sup>158</sup>

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<sup>156</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

<sup>157</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

<sup>158</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

One example was a rather dramatic one cited in a British medical journal by a British physician, who herself had been intubated after having a reaction to asthma medication. She had hallucinated that there was “blood seeping through holes and cracks in my skin, forming a puddle of red around me” which ultimately in her case reportedly led to her having PTSD.

She could not work for hospitals for months and even now and although practicing medicine she said “I still cannot bear a shower curtain to be drawn as it reminds me of closed hospital curtains and hidden death.”<sup>159</sup>

Moreover, many medications that have been used to even treat anxiety and pain, with Valium and Ativan in the first group and opioids in the second, in fact may intensify hallucinations and thus instead of reducing or avoiding PTSD symptoms actually in many cases worsened them as well as create amnesia.

Indeed, regarding the latter issue, it had been thought that “if a patient was heavily sedated and saw doctors, the resulting amnesia about the ordeal would be worthwhile” – a school of thought that has been basically reversed in many cases over the past ten years.<sup>160</sup>

The article also highlights the need for rapid psychiatric/psychological consultation and treatment – the lack of such in the editor’s view likely would lead to liability exposure for those working in the I.C.U. who focus on the physical exclusively at the exclusion of the psychological on one hand and ultimately on

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<sup>159</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

<sup>160</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

insurance companies who refuse to authorize payment for aggressive diagnostic assessment and treatment of pain and anxiety.

◆**PRACTICE NOTE:** There also is likely to be increasing legal obligations placed on patient plaintiffs and their families as they become more aware of these issues since it is becoming clear that “many patients return home mentally shaken, with physical and cognitive weaknesses”<sup>161</sup> – *with the patients and their families clearly needing to assume responsibility for spotting some of these difficulties and seeking appropriate follow-up care.*

Indeed, already in “Britain, Germany, and some Scandinavian countries, nurses in many critical care units keep a diary of the care they provide to a patient” – with contributions from the family, which they give to the patient upon discharge.”<sup>162</sup>

The author goes on to specifically that “if you give relatives things to do – applying lip balm and hand lotion to the patient, keeping their joints limber – it keeps their minds active and decreases a fear response and helplessness”<sup>163</sup> – again implying that the likely imposition of a duty to “mitigate” on the families of patient litigants as well as ultimately on the patients themselves.

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<sup>161</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

<sup>162</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

<sup>163</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.



Yet “whether patients or family members develop PTSD symptoms or the full disorder, persuading them to seek treatment poses unique challenges.” One of the reasons give as an example was a woman who “though she knows she needs help” was “too anxious to go back to the community hospital, which she associates with so much anguish.

“Such avoidant behavior...is among the most debilitating of PTSD symptoms,” making it “hard for individuals who need help to take the necessary steps to get it.”<sup>164</sup>

◆**PRACTICE NOTE:** The editors predict that under those conditions wouldn't it be reasonable to expect that the attorney representing such an individual, particularly those who deem themselves experts in trauma and/or traumatic brain injury and/or in representing PTSD symptoms to have the legal duty to see to it that their patients get the follow-up they need?

Indeed, why wouldn't the attorney under these conditions ultimately be held negligent for failing to push clients to follow-up in the same fashion that an attorney representing a brain injured individual who fails to see if they need a legal guardian and otherwise are competent to participate in the prosecution of their

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<sup>164</sup> Hoffman, *Nightmares After the ICU*, *The New York Times* (July 23, 2013) at D5.

claim also would be finding themselves subject to malpractice exposure?

The entire issue of the nature of an attorney's obligation to see to it that their clients have proper follow-up medical treatment, like the insurance company's obligation to see to it that prompt effective intervention is paid for, likely will become new frontiers of future litigation.

Both plaintiff attorneys and insurance companies likely will be finding themselves literally on the defensive when patients and patient families ultimately end up suing them for the disastrous consequences of lack of common sense guidance to treatment resources and/or refusal to pay for early treatment of any traumatic condition which can interfere with a patient litigants' ability to make clear judgments regarding need for future care by themselves.

## §14:7.33 Hearing loss and dementia

Recent studies would suggest that there is a correlation/co-morbidity between hearing loss and dementia. Recent research in this area was summarized in the February 12, 2013 issue of *The New York Times*.<sup>165</sup>

The article, “First Hearing Loss, Then Dementia” indicates that when individuals who have a “mild,” “moderate” and “severe” hearing loss are compared with those with normal hearing, those with moderate hearing loss a 2-fold increased risk of developing dementia over the eighteen year study cited, those with moderate hearing loss had a 3-fold increased risk of developing dementia and those with hearing loss had a “5-fold increased risk of developing dementia.”<sup>166</sup>

In other words, “the worst the hearing loss, the greater the risk of developing dementia. The correlation remains true even with age, diabetes and hypertension – other conditions associated with dementia – were ruled out.”<sup>167</sup>

Even in the absence of traumatic brain injury – a factor noteworthy for not being addressed in the study – there were multiple “causal” explanations for this

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<sup>165</sup> Bouton, First Hearing Loss, The Dementia, *The New York Times* D1, D7 (February 12, 2013).

<sup>166</sup> Bouton, First Hearing Loss, The Dementia, *The New York Times* D1, D7 (February 12, 2013).

<sup>167</sup> Bouton, First Hearing Loss, The Dementia, *The New York Times* (February 12, 2013) at D7.

association: “the first is social isolation, which may come with hearing loss, a known risk factor for dementia. Another possibility is cognitive load, and a third is some pathological process that causes *both* hearing loss and dementia.”<sup>168</sup>

Moreover the authors of the 2011 research cited in a more recent study that had started in 1997-1998 found that those having hearing loss had a “30 to 40 percent faster rate of loss of thinking and memory abilities” over that six year study when compared with people with normal hearing. “Again, the worse the hearing loss, the worse the rate of cognitive decline.”<sup>169</sup>

Yet, both studies also found “somewhat surprisingly” that hearing aids did not significantly lower the risk for cognitive impairment – something that one frankly would expect to find if there were a true “causal” connection between the loss of hearing and the subsequent development of dementia.<sup>170</sup>

Yet – as, the editor’s note, in many other issues related to self-reported history, the “self-reporting of hearing-aids is unreliable,” with the author of the two research papers, Dr. Lin at John’s Hopkins Medical School, now understandably planning to research specifically on “the way hearing aids: for how long, how frequently, how well they have been fitted, what kind of

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<sup>168</sup> Bouton, First Hearing Loss, *The Dementia*, *The New York Times* (February 12, 2013) at D7.

<sup>169</sup> Bouton, First Hearing Loss, *The Dementia*, *The New York Times* (February 12, 2013) at D7.

<sup>170</sup> Bouton, First Hearing Loss, *The Dementia*, *The New York Times* (February 12, 2013) at D7.

counseling the user received, and what other technologies they use to supplement hearing-aid use.”<sup>171</sup>

The authors then explored the research indicating the possibility of a “common pathological process” noting that a neurologist, Dr. John Gallaher and his colleagues at Cardiff University suggested the “possibility of a genetic or environmental factor that could be causing both hearing loss and dementia – and perhaps not in that order.

“A phenomenon called *reverse causation*, a degenerative pathology that at least in early dementia might prove to be a cause of hearing loss” (emphasis added).<sup>172</sup>

Further complicating all of the above was the increasing importance of accepting the reality of subjective perception, even misperception, as nonetheless being a “real” cause of functional pathology even in the absence of objective measures.

The writer here cites the work of the Director of the Social Neuroscience Laboratory at the University of Chicago, whose “multidisciplinary studies on isolation has shown that *perceived* isolation or loneliness is a ‘more important predictor of a variety of adverse health outcomes than is objective social isolation.’”<sup>173</sup>

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<sup>171</sup> Bouton, First Hearing Loss, *The Dementia*, *The New York Times* (February 12, 2013) at D7.

<sup>172</sup> Bouton, First Hearing Loss, *The Dementia*, *The New York Times* (February 12, 2013) at D7.

<sup>173</sup> Bouton, First Hearing Loss, *The Dementia*, *The New York Times* (February 12, 2013) at D7.

◆**PRACTICE NOTE:** Articles and research increasingly have pointed to the importance of attorneys on both sides understanding:

1. The “real” functional significance of misperception and subjective complaints even when objective data do not substantiate them as explaining “real life, real time” functional impairment.
  2. Even in the absence of traumatic brain injury, dementia is noted to be partly caused by aging, diabetes, and high blood pressure – all conditions then whose presence or absence when there also is traumatic brain injury need to be considered – again pointing to the importance of a multifactorial “risk factor” approach by both attorneys and experts dealing with traumatic brain injury cases.
  3. The presence of absence of hearing loss and brain trauma both being the result of a particular event clearly is important to identify, especially when there is actual evidence for the subsequent development of cognitive decline. Again, as with medications, the concept of escalating interactions amongst all the factors causing the current state of functional
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impairment need to be considered and analyzed by experts on "both sides" of a traumatic brain injury case.

## Chapter 15. The Coming Era of Biomarkers For Traumatic Brain Injury

§15:15.21 More on uses and limitations of biomarkers in diagnosing traumatic brain injury and other conditions

The increasing diagnostic use of biomarkers for a host of conditions, not just for heart disease and traumatic brain injury is accelerating.

However, discussed throughout this book, one must temper enthusiasm for the increasing data pointing to the *sensitivity* of these new tests with the caveats regarding the limits on the *specificity* of these tests.

Yet although more and more biomarker tests are becoming available and used to detect multiple conditions, the sensitivity research demonstrating the clinical significance of negative tests when the tested for conditions are not present has not been nearly as extensive as the specificity research.

Nonetheless, an article appearing in the July 23, 2013 *New York Times*<sup>174</sup> highlights very well a growing trend that ultimately will have great implications for those attorneys pursuing or defending against all kinds of “causation” claims that have been tied to traumatic brain injury, up to and including issues related to late onset dementias or even Alzheimer’s disease deemed to be the specific result of a brain injury occurring earlier in life, even a “mild” one.

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<sup>174</sup> Stipp, Meaningful Markers of Aging, *The New York Times* (July 23, 2013) at D3.



Moreover, not just brain injury cases but many cases that depend on life care planners and others to predict lifelong needs for treatment, lost wages, etc. historically have relied on life tables and other incidents regarded by insurance companies that themselves depend on calculations in chronological age.

One article in the 2010 study revealed “oddly” that “contrast sensitivity – measured by a test of the eye’s ability to pick out very lightly shaded images on white backgrounds, was among the most predictable of the 377 factors evaluated, as was the number of rapid step-ups on a low platform that the subjects could complete in 10 seconds.”<sup>175</sup>

More recently, with novel technologies that can detect thousands of age-associated molecular changes in cells have come to the forefront in the biomarker hunt,” including some type of “molecular aging clock” whose “speed can be measured via blood testing. The moving parts of the [molecular aging] clock consist of chemical tags on DNA molecules that control whether genes are active in cells.”<sup>176</sup>

“The researchers found that the patterns of the tags, called epigenetic markers predictably change with age.”

Indeed, in a January, 2013 study, after scientists “scrutinized around 485,000 of these tags in blood cells of 656 people aged 19 To 101” in fact a large

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<sup>175</sup> Stipp, *Meaningful Markers of Aging*, *The New York Times* (July 23, 2013) at D3.

<sup>176</sup> Stipp, *Meaningful Markers of Aging*, *The New York Times* (July 23, 2013) at D3.

number – 70,387 – of these tags in fact “were predictive of chronological age” and collectively “these tags spell out a ‘signature for age’ that is ‘largely not changed by disease or ethnic background’” according to an expert on aging at the National Institute of Aging.<sup>177</sup>

Not mentioned in the article but of course clearly likely both legally and clinically relevant data surely to be the focus of such studies will be the impact of a known traumatic event on any change in the speed of one’s biological clock, especially if there has been a pre-accident baseline created by a person having taken the kind of tests described in the article as a precondition for life or health insurance having been issued.

Then a clear “before and after” biochemical comparison would be available that could, likely would, for example, result in the acceleration of post-traumatic aging, as documented by these molecular biomarker studies, reflect admissible and highly probative evidence of the *destructive interactions* of traumatic brain injury, pain, medications and posttraumatic stress disorder unlimiting a person’s life expectancy.

One important area at the frontier of biomarker research is the ongoing hunt for “biological markers of age that reliably register how fast the aging process is unfolding.”

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<sup>177</sup> Stipp, Meaningful Markers of Aging, *The New York Times* (July 23, 2013) at D3.

The authors note that even growth markers like “wrinkles” are not specific for aging but “often have more to do with sun exposure than aging.” Moreover, “markers like age-related increases in blood pressure are similarly problematic, often by factors unrelated to aging” (emphasis added).<sup>178</sup>

Although “proposed biomarkers of aging haven’t yet convincingly cleared these hurdles” that are needed to “foretell the remaining life spans a middle-aged person more accurately than chronological age does.”

The practical point for both brain injury attorneys as well as attorneys dealing with posttraumatic stress disorder is clearly set forth in this article, both regarding implicit additional patient plaintiff duties to mitigate on one hand to obligations/duties on insurers to tie premiums and benefits to the results of such tests.

Note specifically the author's predictions about the future: “insurers might demand that customers take them [aging-rate tests] in order to set premiums for life and healthcare policies. These tests may also reveal how factors like exposure to environmental toxins and the stress of job loss accelerate ranging and by how much – *fodder for lawsuits*” (emphasis added).

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<sup>178</sup> Stipp, Meaningful Markers of Aging, The New York Times D3 (July 23, 2013).

§15:23      The coming neuropsychiatric revolution and its legal consequences:  
Prions

This year Stanley B. Prusiner, M.D., Director of the Institute for Neurodegenerative Diseases and Professor of Neurology at the University of California, San Francisco, apparently was not satisfied merely to have won the 1997 Nobel Prize in Physiology or Medicine. Instead, his groundbreaking work he continued and culminated in what the editors believe has been a groundbreaking book linking biochemistry, *Madness and Memory*.<sup>225</sup>

This book focuses on prions – infectious proteins believed first to cause a disease called Scrapie that include neurobehavioral symptoms– as well as the kinds of amyloid fibrils that coalesce into plaques of the type seen in Alzheimer’s Disease as well as a “wide array of neurodegenerative diseases.”<sup>226</sup>

Part of the Dr. Prusiner’s genius was that he then was able to link his theory to the presence of a specific protein PrP27-30 (within the amyloid plaques found in a variety of degenerative diseases) – and then pursue the “path to the gene through a unique amino acid sequence.”<sup>227</sup>

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<sup>225</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014).

<sup>226</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 108.

<sup>227</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 129.

A spongiform encephalopathy together with altered gait and convulsions (and goats).

Dr. Prusiner then went on to assess human prion diseases in those associated with progressive dementias, paralysis, myoclonus, and other symptoms. These include Creutzfeldt-Jakob Disease ("Mad Cow Disease"), late onset neurodegenerative diseases, Alzheimer's Disease and Parkinson's Disease.<sup>228</sup>

He then focused on the "frontal temporo dementias at the interface between psychiatry and neurology" that are called "tauopathies."<sup>229</sup>

He then went on – and here the eyes of the plaintiff and defense counsel should be widening – to link – with studies of posttraumatic frontal temporal dementias. He noted that "clinical symptoms can appear decades after the subject experienced a traumatic brain injury."<sup>230</sup>

He noted that, regarding combat, it is still "unknown" what the "number of soldiers suffering from posttraumatic stress disorder" have these dementias – as it still is unknown "the number of episodes a traumatic brain injury needed to induce FTD (fronto temporal dementia). It seems rightly that the number of

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<sup>228</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 236-237.

<sup>229</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 244.

<sup>230</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 245.

episodes will vary from one person to another and will also depend on the type and extent of the brain injury."<sup>231</sup>

He does not leave his analysis at this point – but then talks about the future and how “understanding the structural transitions in TAU that occur in sporadic and inherited cases of FTD would be critical in developing effective drugs and informative molecular diagnostics.”<sup>232</sup>

Not surprisingly given this man’s amazing logic and intelligence, he then goes on to the next step: speaking of occasion for “early diagnosis” in order to facilitate “identification of prions long before symptoms appear. Meaningful treatments will probably require cocktails of drugs to diminish the precursor protein, interfere with his conversion into prions, and enhance their clearance.”<sup>233</sup>

The “remarkable convergence” that forms the end of the book specifically relates to a finding with dramatic future neurobehavioral as well as forensic significance”: the presence of “the convergence of studies demonstrating the prions featured in the pathogenesis of the common

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<sup>231</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 245.

<sup>232</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 245.

<sup>233</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 250.

neurogenics of maladies,” a convergence which in turn “has created a profound change in thinking about these devastating illnesses.”<sup>234</sup>

In his “epilogue” he once again comes to a basic principle of both god medical and personal injury practice: “You have to give people some hope.”<sup>235</sup>

He even goes on to speculate about a possible link between posttraumatic stress disorder. He notes for example that studies of U.S. combatants “argue” – note don’t prove, however – “that mild concussion significantly increase the likelihood of developing posttraumatic stress disorder.”<sup>236</sup>

He then asks, “how many military personnel with posttraumatic stress disorder have a TAU prions, induced by head trauma, perforating in their brains” – but note that this amount “remains to be determined” by “brain imaging procedures that can detect TAU prions.”<sup>237</sup>

◆**PRACTICE NOTE:** It is clear that research into prions has potentially huge legal/clinical implications.

If links are found between the presence of prions on one hand and the emergence of neurodegenerative diseases with

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<sup>234</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 250.

<sup>235</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 253.

<sup>236</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 259.

<sup>237</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 259.

posttraumatic stress disorder on the other, the entire arena for arguing and proving both "causation" and huge damages in "mild" brain injury cases is enormous.

At the same time – and as at least one of the editors of this book believes – prion research, like that related to diffusion tensor imaging, now holding huge clinical and legal promise has not yet reached the point in which findings can be taken as unequivocally proving a "causal connection" between a traumatic event and the laboratory or clinical findings."<sup>238</sup>

Rather, current *most accurate and objective use of prion data that does exist, as the best clinical use of diffusion tensor imaging data that exists relates to the findings of abnormalities being consistent with if not conclusively establishing a causal connection being present between the traumatic event and any positive findings.*

Another important lesson from reading *Madness and Memory* was a clear demonstration hidden in the pages of the differences between medical/clinical/inductive and legal/deductive reasoning – as well as the legal and clinical magic of the words "consistent with" and "inconsistent with."

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<sup>238</sup> Prusiner, *Madness and Memory: The Discovery of Prions—a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at



He cited a slide sent to him by urologist Hilary Koprowski entitled “*Four Stages of Adopting a New Idea*” which was (pardon the pun) hilarious.

1. The first stage is “It’s impossible, it’s nonsense, don’t waste my time.”
2. The second is “Maybe it’s possible, but it’s not interesting. It’s clearly not important.”
3. The third is, “It’s true and I told you so. I always said it was a good idea.”
4. The fourth is, “I thought of it first.”<sup>239</sup>

◆**PRACTICE NOTE:** The reality is that good medicine and good science do require a combination of experimentation, speculation, and considering alternatives often times of seemingly speculative assumptions and theories. In this sense, good science and good medicine fundamentally differ – and often represent the reverse – of the lawyers much more than honoring precedent. Medicine instead focuses on challenging precedent if data allows to justify such a challenge.

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<sup>239</sup> Prusiner, *Madness and Memory: The Discovery of Prions—a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 188.

In this regard, a magazine written by a nonphysician science journalist that justifiably appeared to both Dr. Prusiner may well have had its affect upon him because the article appear to reflect more of a legal than a truly clinical perspective. Here the nonphysician journalist sarcastically stated that "Sure, Stanley Prusiner there's a price for his persistence, not for his prions. Nobody said the Nobel Committee was infallible. It did, after all, give Henry Kissinger the Peace Prize in 1973...." but "if it turns out the values *due* cause these diseases [Mad Cow and Creutzfeldt-Jakob] then Prusiner will have won the prize for the discovery of something spectacularly wrong."<sup>240</sup>

Ironically, Dr. Prusiner noted that a colleague later on met Mr. Tau who smiled and claimed that "My article got stamped Prusiner and Nobel Prize." Dr. Prusiner replied, "That's the definition of Chutzpah."<sup>241</sup>

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<sup>240</sup>Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 225.

<sup>241</sup> Prusiner, *Madness and Memory: The Discovery of Prions-a New Biological Principle of Disease* (New Haven: Yale University Press, 2014) at 225.

§15:24                   The coming duty to mitigate by plaintiff litigants and plaintiff counsel in all future pain and brain cases

A previous section (§14:7.23.1) explained how family involvement in the prevention and treatment of intensive care unit-caused posttraumatic stress disorder and psychiatric disorders in some areas already has become a standard part of prevention and treatment of these problems.

It is clear to the editors that we historically are in an era in which victims of trauma or even gross injustice are being expected by society to do more than seek, as advertised by many plaintiff firms, "large cash awards" for their suffering.

Indeed, it is the editor's experience that sophisticated defense counsel already are seeking out jurors – and experts – who themselves have had a host of significant physical injuries, ranging from quadriplegia to brain tumors – but yet themselves have demonstrated the determination and ability to return to work and maximize life functioning after their clinical catastrophes rather than, as defense counsel often claim, expect to "sit back and collect."

Of course sometimes defense counsel enthusiasm in seeking out experts who themselves have suffered severe physical stigmata can be so pronounced as to be absurd, potentially even to jurors.

One of the editors, for example, recalls that one day after he had gotten out of surgery after having had his own (benign) brain tumor removed three different defense attorneys visited him in the hospital. The editor naively had believed that the attorneys were showing care and concern for him and wanted to wish him a speedy recovery from his own operation.

Instead each defense attorney separately said to him words like, "You look so terrible we don't even want you to testify at trial. Instead we want you to have a *de benne esse video deposition* instead of live testimony so the jury can see how awful you look and yet you are so willing to work!"

Despite situations like the above, yet even now all too many brain injury experts on both sides fail to mention either the pressing need for extensive vocational rehabilitation or the need for brain injured and chronic pain patients and their families to assume the responsibilities of getting the victims quickly to the right physician for the right kind of help and compliant with all treatment recommendations.

Moreover, experts on both sides still all too often in the editor's view leave out any mention of vocational rehabilitation and job retraining costs. Plaintiff experts sometimes claim they do mention this for fear of "putting pressure" on patients who need to "accept" their brain injuries as being "permanent."

Defense experts in turn all too often claim they leave out this discussion because they do not want their insurer clients to have the financial liability of

paying for what could be an extensive course of vocational rehabilitation not covered by increasingly financially strapped state vocational rehabilitation agencies.

In either case, it is the editors' view that ultimately it is the patients who "win" when they both are given the resources from their insurance companies to pay for the treatment they require on one hand and on the other are prevented by their treating testifier clinicians from slipping into a state of self-perceived invalidism where they are excused from having to assume any personal responsibility for their recovery and/or being excused from actively having to use their brains in a planned return-to-work or volunteer effort.

One of the sadder and all too often failures by some plaintiff attorneys is the failure by some plaintiff attorneys and their experts is to protect plaintiffs from unnecessarily invasive surgical procedures.

These attorneys and experts, some in an attempt to "build up" damages and others having the mistaken belief that the presence of a subject complaint does not warrant operative intervention in the absence of objective preoperative testing and psychiatric screening, end up ultimately victimizing their own clients and subjecting them to sometimes catastrophic consequences of unnecessary surgeries and unnecessary medication.

On the other hand, equally damaging to those truly victimized by traumatic brain injury and chronic pain is the failure by not only some plaintiff

attorneys and plaintiff experts but some defense attorneys and defense experts to make sure that patients follow-up with treatment recommendations.

The reality is that many victims of brain injury and pain syndromes become depressed or otherwise lack the motivation or even ability to keep appointments that are given, and moreover often are too embarrassed or ashamed to admit this failure of treatment compliance to either their treating clinicians or their attorneys.

The result? Patient failure to improve because of noncompliance all too often has led to erroneous plaintiff attorney claims in some cases of demonstrated injury permanency on one hand and on the other hand inaccurate defense attorney accusations that such failure to keep scheduled appointments necessarily represents a conscious lack of cooperation or even malingering behavior.

One of the newest frontiers of the growing expectation that patients' claims of fact and even promises to seek care cannot be taken as necessarily being accurate with the corresponding implication that plaintiff attorneys, plaintiff experts, defense attorneys, and defense experts all need to help patients recover faster by following up with prescribed treatment in the field of chronic pain.

Note in this regard an article appearing in the weekend issue of the *Wall Street Journal*, "More Patients' Painkillers With Strings Attached: Doctors

Demand Urine Samples to Prove Use, Written Promises Not to Resell the Drugs; a 'Trust and Verified Situation.'"<sup>242</sup>

In one example in Arkansas, the article notes that "for decades, William Piechel trusted patients who said they were taking their pain medications as prescribed. Now, he is asking them to prove it."<sup>243</sup>

This physician is "one of a growing number of pain doctors requiring patients to submit urine samples to demonstrate they are taking pain medications such as OxyCodone as directed. Individuals also are being asked to sign written agreements promising they won't sell their drugs on the side and will seek prescription painkillers only from Dr. Piechal's clinic while under his care. If they refuse, he said he won't provide a prescription."<sup>244</sup>

Dr. Piechal said that "this is where the chronic pain treatment is headed," who called the "initial urine sample results he received last year 'shocking' because some failed tests came from individual he had treatment for more than a decade."<sup>245</sup>

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<sup>242</sup> Martin, "More Patients' Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A 'Trust And Verified Situation,'" *The Wall Street Journal* A3 (July 20-21, 2013).

<sup>243</sup> Martin, "More Patients' Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A 'Trust And Verified Situation,'" *The Wall Street Journal* (July 20-21, 2013) at A3.

<sup>244</sup> Martin, "More Patients' Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A 'Trust And Verified Situation,'" *The Wall Street Journal* (July 20-21, 2013) at A3.

<sup>245</sup> Martin, "More Patients' Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A 'Trust And Verified Situation,'" *The Wall Street Journal* (July 20-21, 2013) at A3.

“Failed tests revealed some were taking opioids he hadn’t prescribed like marijuana or methamphetamine.”<sup>246</sup>

“Behind the new rules is a growing concern among physicians that they will be held responsible for painkiller-over dose-related deaths and accidents. For years, efforts to stymie the epidemic of abuse had been led by law enforcement and targeted shady operators called ‘pill mills’ that supply the black market for OxyCodone and Hydrocodone.”<sup>247</sup>

“Last year, the American Society of Interventional Pain Physicians, a professional group with 4,000 members, adopted guidelines that urine tests ‘must be implemented’ from the initial visit to see whether patients are already abusing drugs – or are likely to.”<sup>248</sup>

“At least three other pain physician groups, including the American Pain Society, have endorsed such testing for high-risk patients in recent years. And at least 10 states – including Kentucky and Washington, long hotbeds of abuse – recommend some level of urine-test monitoring.”<sup>249</sup>

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<sup>246</sup> Martin, “More Patients’ Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A ‘Trust And Verified Situation,’” *The Wall Street Journal* (July 20-21, 2013) at A3.

<sup>247</sup> Martin, “More Patients’ Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A ‘Trust And Verified Situation,’” *The Wall Street Journal* (July 20-21, 2013) at A3.

<sup>248</sup> Martin, “More Patients’ Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A ‘Trust And Verified Situation,’” *The Wall Street Journal* (July 20-21, 2013) at A3.

<sup>249</sup> Martin, “More Patients’ Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A ‘Trust And Verified Situation,’” *The Wall Street Journal* (July 20-21, 2013) at A3.



"Urine tests can give us a lot of information to understand if somebody is taking the medications properly – or if they're diverting them," said Hans Hansen, SIPP president and a practicing pain doctor in Conover, N.C. The efforts have their skeptics."<sup>250</sup>

Although clearly such approaches regarding not necessarily taking patients at their word as well as not trusting efforts in complying have clear implications for those individuals being treated for many conditions beyond chronic pain – notably including traumatic brain injury.

◆**PRACTICE NOTE:** The legal implications of the above literature are huge. Defense attorneys and their experts likely will use same as they likely will point out that any plaintiff expert who takes every plaintiff patient claim of fact as being necessarily true is demonstrating clinical ignorance.

Plaintiff attorneys in turn will likely take defense experts to task when they challenge the accuracy of patient history when available records actually corroborate this history.

An example of the above would be when, for example, alcohol and blood testing records are readily available in the hospital after an accident that clearly demonstrate that an

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<sup>250</sup> Martin, "More Patients' Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A 'Trust And Verified Situation,'" *The Wall Street Journal* (July 20-21, 2013) at A3.

accident victim was not demonstrating opioids in urine screenings or elevated blood alcohol levels.

Finally, complicating all of this is the fact that at the present time “some insurers don’t cover the urine test costs at all.”<sup>251</sup>

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<sup>251</sup> Martin, “More Patients’ Painkillers With Strings Attached: Doctors Demand Urine Samples To Prove Use, Written Promises Not To Resell The Drugs; A ‘Trust And Verified Situation’” *The Wall Street Journal* (July 20-21, 2013) at A3.

§15:25      Testing the limits of expert knowledge: awareness of “cutting edge” clinical research or not

Clearly, it is not reasonable to expect that every traumatic brain injury expert physically and intellectually can master the cascading crescendo of new research findings.

Thus, trying to humiliate an expert on cross-examination who does not know a particular piece of research or even in well-known newspapers and journals is unrealistic.

Further, if the jury deems an expert to be unfairly harassed by this attempt to portray the expert as being ignorant of something important, such an attempt to discredit the expert by attacking the expert's knowledge could well backfire and lead the jury to perceive the cross-examining attorney as being too aggressive, insensitive, harassing, or just plain ignorant of the reality of there being practical limits to how much a clinical expert can be expected to be kept up-to-date.

At the same time, if testifying experts do not acknowledge that there are some limits to their knowledge but instead attempt to portray themselves as knowing “everything about everything,” confronting them with their lack of clinical knowledge would, in the editors' opinions, keep jurors from being

influenced too much by opinions that are not backed up with the most recent available clinical data.

Arrogant experts on either side for example should have their arrogance questioned when they claim to “know everything about everything” involving traumatic brain injury by being questions about their knowledge of “optogenetics.”<sup>252</sup>

These experts should know, for example, that this technique – which involves “blending gene therapy, neuroengineering and fiberoptics” in fact “hasn’t been tried yet in people.” At the same time, they also should know that when this technique was used in laboratory animals such use actually resulted in the instant modification of animal behavior, suppressing memories and laying their “biological underpinnings of psychiatric disorders.”<sup>253</sup>

Moreover, the essential core of the technique – “eliminating neurons primed with light-sensitive proteins” by using selective wave lengths of laser light already “is transforming basic brain research.”<sup>254</sup>

Some of the results of this research – again which can be used to cross-examine “know it all” experts on either side of the case have been noted to include the following:

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<sup>252</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal D1, D3 (January 22, 2013).

<sup>253</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D1.

<sup>254</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D1.

1. With the laser light on, "mice freeze in fear. Light off: they scamper freely."<sup>255</sup>

Researchers at both Stanford University and MIT had generated these studies by activating "light-sensitive neurons in the brain's hippocampus involved in the memory of fright."<sup>256</sup>

2. With the laser light on, "addicted mice lose their taste for cocaine" but with the light off "they avidly seek the drug." Here the targeted neurons done by researchers at the Medical University of South Carolina and the University of Iowa had "targeted neurons in a part of the cortex – the brain's outer layer associated with seeking of reward."<sup>257</sup>
3. Furthermore – and importantly given the issues related to seizures in those suffering traumatic brain injury and the allegations of "permanency" of seizures when there had been seizures in traumatic brain injury as well as claims of lack of necessary permanency of those seizures, was the finding that with the laser light on "epileptic seizures stopped" and with the light off the seizures resumed.<sup>258</sup>

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<sup>255</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D1.

<sup>256</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D1, D3.

<sup>257</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D3.

<sup>258</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D1, D3.

4. Even in “psychiatric” disorders such as depression, there were direct behavioral responses to the shining of the laser light in parts of the brain: with the light on “depressed mice became more socially active and more eager for sugar” whereas with the light off “listlessness and indifference to sweets returned.”<sup>259</sup>

Here, Stanford and MIT scientists had targeted “the dopamine neurons, which make a chemical thought to elevate mood in a reward circuit located in the midbrain.”<sup>260</sup>

Moreover, since “most of the cells of the brain don’t respond to light” when the entire brain was bathed in light “in millisecond pulses” and affected only the brain cells made sensitive to light according to a Stanford researcher, “the effect achieved is instantaneous.”<sup>261</sup>

Note that one of the reasons why studies like these have, according to a Harvard Medical School researcher who uses this technique to study primate brains has “revolutionized research” already was the ability to shine a specific wave length to “perturb a specific type. That’s the beauty.”<sup>262</sup>

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<sup>259</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D1, D3.

<sup>260</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D1, D3.

<sup>261</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D1, D3.

<sup>262</sup> Hotz, Scientists Cast Light Onto Roots of Illness Deep in Brain, The Wall Street Journal (January 22, 2013) at D1, D3.

## Nature and Scope of Neuropsychiatric, Behavioral Medicine, and Neurobehavioral Examinations

What follows is a description of the nature, scope and time required for neuropsychiatric/neurobehavioral evaluations.

This description is based upon my extensive training in neuropsychiatry (with my concentrating in behavioral neurology and neuropsychology as well as psychiatry and general medicine even before receiving my M.D. from Stanford and pursuing a psychiatric residency at Yale) and my nearly forty years of clinical practice, experience, teaching medical and neuropsychiatric interviewing and publishing, directing both inpatient and outpatient programs, and having an extensive clinical as well as consulting practice in the fields of neuropsychiatry, neuropsychology, behavioral medicine, behavioral neurology, and general psychiatry.

These examinations typically take up to 16 hours (sometimes even longer) when patients have suffered a traumatic brain injury and/or cognitive impairment caused by other conditions and/or chronic pain syndromes and/or emotionally traumatic experiences and/or on medication(s) prior to/at the time of/or after the traumatic event that is the subject of litigation since in those situations their responses often are slow and their ability to process and recall information impaired.

Note further that these examinations often can take even more than 16 hours in those situations when patients have had extensive and/or emotionally traumatic pre-incident histories (e.g., when physical and/or sexual abuse had been present).

Moreover, note that individuals having these types of injuries simply in many cases cannot sit through an examination that takes more than four hours at a time. In those cases, we are happy to accommodate the examinees by breaking up the examination period into as many parts as necessary to minimize examinee/patient discomfort and avoid the problem of tests being invalid because those seen simply sometimes are too uncomfortable to pay sufficient attention to questions to give accurate responses.

Finally, note that in the neurobehavioral sciences "everything counts." There are absolutely, positively no areas of inquiry that are "off limits" clinically and/or ethically. Specifically, as Freud indicated that the core of human happiness is the ability to "love and work," it is completely not only legitimate but necessary to inquire into all aspects of both; specifically including a patient's sexual history and practices, what they may have witnessed regarding parents' and/or siblings' sexual practices (including witnessed physical and sexual abuse), interviewee's knowledge of vocational rehabilitation and of the Americans with Disabilities law, and any other areas of inquiry that would lead to a more accurate differential diagnosis.

Indeed, clinical – as opposed to legal – investigation and "discovery" regarding review of most recent medical literature not only is necessary but imperative, since any ethical clinical expert would be willing up to and including at the time of trial to update or even significantly alter any opinion expressed in a report on the basis of any new facts provided or most recent literature reviewed.

Please also note in this regard that it is extremely important for this examiner to have the opportunity to personally interview any and all health providers who have rendered treatment to the examinee both before and after the traumatic incident as well as to personally interview family members and other "collaterals" who have information about the examinee's neurocognitive, neurobehavioral, ability to function at work and at home, and emotional states – with specific examples of the above – that manifested themselves before as well as after the traumatic incident.

The examination has seven parts, of which only one is the mental status examination:

**I. History of the Present Illness (2 hours or more especially in patients who have suffered traumatic brain injury and/or cognitive impairment caused by other conditions and/or chronic pain syndromes and/or emotionally traumatic experiences and/or on medication(s) prior to/at the time of/or after the traumatic event that is the subject of litigation):**

It is a well-known medical truism that "history is 80% of the diagnosis."

Consequently, it is very important to get the patient's present recall of the accident or injury, injuries suffered, treatment received, and treatment responses.

Please note that "history" includes a complete medical and behavioral medicine history that goes well beyond the traditional merely "psychiatric" history and includes at least medical, surgical and other conditions that can have behavioral presentations or consequences, neurological and brain injury related conditions that are treated with medications that have physical/medical side effects, and the differential diagnosis of conditions that can be both medical and/or surgical as well as behavioral in presentation or cause (e.g., when a patient has both anxiety and broken bones, depression and low thyroid,



heart arrhythmias and anxiety, cognitive problems as well as paralysis or eye problems in strokes, left arm pain in heart attacks, etc., etc.).

Since patients do not live life in a vacuum and causal links between the accident and the current diagnoses important, it also is essential to inquire about other life events and physical illnesses an examinee may have suffered between the date of the original incident and the present as well as regarding important life events prior to the date of injury.

It indeed is my experience that plaintiffs in personal injury litigation are particularly eager to describe in detail their injuries and treatment for same.

**II. Past Medical History (usually approximately 2 hours):**

Patients and sometimes even testifying experts do not take careful medical histories of a patient's pre-accident treatments, symptoms, treatment responses – or lack of seeking treatment for symptoms. There are numerous medical illnesses which directly and significantly impact a patient's psychiatric and neurocognitive state, ranging from diabetes to lupus to Lyme's disease to high blood pressure, amongst many others.

**III. Past Psychiatric History (15 minutes if absent to 3 hours or more if present):**

It frankly has been the exception rather than the rule that records of accident contain data about patients' pre-accident history not only of psychiatric treatment but, equally important, psychiatric symptoms that the patient chose not to have treated.

Prior examinations have revealed for example that patients have been physically or sexually abused, had significant substance abuse problems, stresses related to child custody disputes, family deaths, and other emotional stressors that they were not asked about or did not chose to volunteer to other examiners. Clearly these would impact upon a patient's current psychiatric state – especially if these issues never were addressed in treatment.

**IV. Family Medical and Psychiatric History (15 minutes if absent to 1 hour or more if present):**

There are many illness, particularly of the biochemically influenced type, that run in families. Many experts are psychologists who do not ask about/are not trained about how to ask about these conditions. Examples include Huntington's disease, bipolar (manic depressive) illness, and thyroid disease.

V. **Psychosocial History (up to 2 hours, usually more if a patient has had a traumatic brain injury):**

School performance, school failure, dropping out of school, criminal activity, work history, and relationship/marital history all need to be inquired about all need to be inquired about since any of these can result in severe stress, anxiety, depression, and/or cognitive impairment.

VI. **Mental Status and Screening Neurological and Cardiovascular Examinations (usually takes 1 hour, but can often take more time if patients have suffered a traumatic brain injury and/or cognitive impairment caused by other conditions and/or chronic pain syndromes and/or emotionally traumatic experiences and/or on medication(s) prior to/at the time of/or after the traumatic event that is the subject of the litigation):**

This is a formal assessment of mood, cognition, including short-term memory and executive functioning and intactness with reality. This examination includes standard questions which a competent neuropsychiatrist is expected to know how to ask.

Finally, depending on the specific case, certain screening neurological and general medical procedures might be necessary. These have included taking patient's blood pressure (in both arms, both sitting and standing), listening to a patient's heart (sitting and standing) with a stethoscope to assess rate and rhythm abnormalities, testing for balance and coordination, etc..

As it is a standard practice in behavioral medicine for a patient to have his or her blood pressure taken and heart listened to as well as to have certain screening neurological examinations done (including specifically checking for nystagmus and ataxia), those procedures are done as part of the overall mental status examination process.

VII. **Psychological Testing (4-6 hours, often more with traumatic brain injury patients):**

A. It is my standard practice to administer the Rey 15 Item Inventory and the TOMM as well as the Mini Mental State Examination when a neuropsychologist or neurologist has not administered one or more of these tests.

Typically these three tests take approximately less than one-half hour to administer – provided that these individuals have not suffered a traumatic brain injury and/or cognitive impairment caused by other conditions and/or chronic pain syndromes and/or emotionally traumatic experiences and/or on medication(s) prior to/at the time of/or after the traumatic event that is the subject of litigation.

- B. In addition to the above, I administer four or five standard, computer scored, psychological test instruments: the Validity Indicator Profile, the Minnesota Multiphasic Personality Inventory-2, the Millon Clinical Multiaxial Inventory-III, and the Career Assessment Inventory (the Vocational and/or Enhanced Versions).

These tests independently generate diagnostic data and formulations. I use them to help validate the accuracy of our own clinical impressions but they are not a diagnostic substitute for same. Although there is a little bit of flexibility regarding test ranges and time expected to take these tests, in general the following apply to these tests:

1. The Validity Indicator Profile, which has both vocabulary and non-verbal puzzle solving parts is valid from ages 18-69.
 

In the absence of clinically significant traumatic brain injury and/or cognitive impairment caused by other conditions and/or chronic pain syndromes and/or emotionally traumatic experiences and/or on medication(s) prior to/at the time/or after the traumatic event that is the subject of litigation this test takes about an hour to complete but up to twice that time when either or both of those conditions exist.
2. The Minnesota Multiphasic Personality Inventory is deemed valid for those taking it between the ages of 18 and up provided the person has a 5<sup>th</sup> grade reading level or greater.
  - a. Again in the absence of clinically significant traumatic brain injury and/or cognitive impairment caused by other conditions and/or chronic pain syndromes and/or emotionally traumatic experiences and/or on medication(s) prior to/at the time/or after the traumatic event that is the subject of litigation between one hour or one hour a half complete these 567 questions.
  - b. Adolescents and young adults also can take the adolescent version of this test, which is shorter (478 items) and deemed valid for those between the ages of 13-18.
3. The Millon Clinical Multiaxial Inventory-III generally is deemed valid for those taking it between the ages of 18 and up provided they have a reading level of at least 8<sup>th</sup> grade.
  - a. This 175 item true-false test generally takes examinees about forty-five minutes to complete – but again longer in individuals who have suffered from a traumatic brain injury and/or cognitive impairment

and/or chronic pain syndromes and/or emotionally traumatic experiences and/or on medication(s) prior to/at the time of/or after the traumatic event that is the subject of litigation.

- b. There is an adolescent version of this test, the Millon Adolescent Clinical Inventory, which is 160 items and is valid for those taking it between the ages of 13-19.
  - c. This test generally takes between a half hour and forty-five minutes in those not suffering from any cognitive impairment or brain injury.
  - d. Note that this test takes longer to complete in individuals who have suffered a traumatic brain injury and/or cognitive impairment caused by other conditions and/or chronic pain syndromes and/or emotionally traumatic experiences and/or on medication(s) prior to/at the time of/or after the traumatic event that is the subject of litigation).
4. There are two versions of the Career Assessment Inventory.
- a. The vocational version which consists of 305 questions is designed for those who have a high school education or less and describes interests and not abilities related to jobs, abilities, and school subjects.
  - b. The enhanced version of this test consists of 370 questions and also is divided up into whether a person would like or dislike certain activities, school subjects and careers regardless of their present ability to pursue same.
  - c. As I have found these tests to be most accurate and useful when people respond with an instant "gut" feeling, the typical examinee who does not suffer one of the complicating conditions listed above takes about fifteen minutes to perform the vocational test and about twenty minutes to perform the enhanced test.
  - d. On occasion, when a person is in college it has been useful to provide both tests and compare the answers.
  - e. Note further that it is my consistent experience that vocational rehabilitation agencies invariably have found these tests helpful in providing guidance to those seeking their services.

This information hopefully will answer any questions as well as reassure attorneys on "both sides" that the length of this examination is as long as it is to be able to give a fair assessment of examinees without them feeling rushed, with them having sufficient time

to rest if their injuries require same, to minimize fatigue, and overall to generate the most complete and accurate set of data possible in order to hopefully facilitate the fair resolution (including settlements) of the cases in which the examinees are involved.

I would be happy to provide more information including references to standard psychiatric text substantiating the necessity for all of the above.

Revised and clarified on 6/8/16.

# **Understanding Traumatic Brain Injury**

**David M. Mahalick, Ph.D., ABPN**

**Board Certified Neuropsychologist**

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## **Neuropsychology:**

- **Typically defined as being the study of brain-behavior relationships.**
- **Utilizes objective testing to quantify performance on cog.-neuro. measures.**
  - Performance is evaluated relative to applicable data in normative samples

## **Objective NP Tests**

**A Comprehensive Neuropsychological will typically take approximately 5-8hrs.**

- **Behavioral Measures**
- **Malingering/Motivation**
- **Sensorium**
- **Attention/Concentration**
- **Motor functions**
- **Language functions**
- **Memory**
  - STM, LTM
  - Verbal, Visual
- **Visuospatial processing**
- **Intellectual functions**

## Diagnostic Criteria for mTBI:

- **Positive Loss of Consciousness (LOC)**
- **If no LOC- the patient must have an alteration of Mental Status (MS).**
- **Will later discuss:**
  - **Retrograde Amnesia**
  - **Anterograde Amnesia**
  - **Post-traumatic Amnesia (PTA)**
  - **HI secondary to whiplash with neg. LOC & neg. altered MS- QUESTIONABLE**

## Features of concussion frequently observed

- **Vacant stare** (befuddled facial expression).
- **Delayed verbal and motor responses** (slow to answer questions or follow instructions).
- **Confusion and inability to focus attention** (easily distracted and unable to follow through with normal activities).
- **Disorientation** (walking in the wrong direction, unaware of time, date, and place).
- **Slurred or incoherent speech** (making disjointed or incomprehensible statements).
- **Gross observable incoordination** (stumbling, inability to walk tandem/straight line).
- **Emotions out of proportion to circumstances** (distraught, crying for no apparent reason).
- **Memory deficits** (exhibited by the patient repeatedly asking the same question that has already been answered, etc.)
- **Any period of loss of consciousness** (paralytic coma, unresponsiveness to arousal)

American Academy of Neurology Standards  
The Quality Standards Subcommittee of the American Academy of Neurology, in June 1996, adopted practice parameters for the management of concussions (Published in Neurology 1997; 48:581-585).

## Grades of Cerebral Concussion

- **Grade 1**
  - Transient confusion
  - No LOC
  - Concussion symptoms or mental status abnormalities on examination resolve in less than 15 minutes.

- Grade 2
  - Transient confusion
  - No LOC
  - Concussion symptoms or mental status abnormalities on examination last *more than 15 minutes*
- Grade 3
  - Any LOC, either brief (seconds) or prolonged (minutes).

## **Retrograde Amnesia (RA)**

- **The inability to recall events immediately preceding the injury.**
- **Usually measured in seconds, however, in more severe cases may be hours, months and sometimes years.**
- **RA is predictable and is not selective.**
- **Very important with Children.**

## **Anterograde Amnesia**

- **The period of time wherein there is no recall for events subsequent to the injury.**
- **May last seconds, hours, months, etc.**
- **When patchy recall evolves PTA comes into effect.**

## **Post-traumatic Amnesia (PTA)**

- **The patient's inability to appreciate his/her moment to moment psychological. environment in a consistent and continuous fashion.**
- **Duration of PTA is the gold standard for evaluating the severity of neurotrauma and its post-acute neurobehavioral sequelae.**
- **State of being groggy/dazed/confused**



## **Classification of Head Injury**

- **Mild**
  - (90% of all TBI's, i.e., Cerebral Concussions).
  - PTA less than 24 hours.
- **Moderate**
  - PTA 24 hours to 1 week
- **Severe**
  - PTA greater than 1 week

## **Course of Neurobehavioral Recovery**

- **Most recovery will take place within the first 12 months**
- **Significant recover continues between 12-24 months**
- **Spontaneous recovery terminates at about 3 years.**
- **Deficits should be most severe at a time most proximal to the injury.**
- **Serial (f/u) examination in real HI cases will demonstrate improvement vs. deterioration (n.b., atypical).**
- **Deterioration may result from some secondary underlying condition such as Chronic SDH, seizures, etc.**

## **Important Sources of Information for TBI Cases**

- **Medical records relating to the HI.**
- **Records relating to past and present treatment.**

- Previous neuropsychologicals.
- Premorbid records.
- Clinical Interview material.
- All objective NP test evidence.

## **Records Proximal to the Head Injury**

- Police report.
- EMT/Paramedic report (? LOC or disorientation).
- Emergency Room Record.
- Nursing notes.
- GCS.
- Progress notes.
- Consultant reports (neurology, NP, speech).
- Social Work notes.
- Discharge directives.

## **Premorbid Records**

- Academic Transcripts.
- CST Evaluations.
- Achievement Testing (SAT's, CAT's)
- Job performance.
- Family Practice Records.
- Pediatric/well-baby records.
- Testings from any previous injuries.
- Prior P.I., W.C., or Divorce proceedings.

## **Clinical Interview Material**

- Ptx's account of the accident in detail.

- **Acute complaints**
- **PMHx.**
- **Social/family Hx**
- **Educational Hx.**
- **Employment Hx.**
- **Military Hx.**
- **Hx of arrests.**
- **Current complaints.**

35 NY. J.V.R.A. 4:26, 2018 WL 2335404 (N.Y.Sup.) (Verdict and Settlement Summary)

Copyright (c) 2018 Jury Verdict Review Publications, Inc.  
Supreme Court, Thirteenth Judicial District, Richmond County, New York.

LOMAGNO vs. LOMAGNO

100026/15

DATE OF VERDICT/SETTLEMENT: January 19, 2018

TOPIC: Premises liability - Fall down - Alleged negligent failure to adequately remove ice and snow following 6-8 inch snowfall the previous day - Plaintiff, son of defendant homeowners, falls **head** first down eight exterior steps after allegedly slipping on ice - Stairway had two handrails until one removed after being struck by falling telephone pole some months earlier - No code violations - **TBI** - Liability only.

**SUMMARY:**

Result: DEFENDANT'S VERDICT

**EXPERT WITNESSES:**

Plaintiff's engineer/human factors expert: [Irving S. Ojalvo](#), ScD, PE from Stamford, CT.

Defendant's engineer expert: [Rudi Sherbansky](#), PE from New York, NY.

**ATTORNEY:**

Defendant's: [Timothy S. Carr](#) of Eustace Marquez Epstein Prezioso & Yapchanyk in New York, NY.

JUDGE: [Alan C. Marin](#)

RANGE AMOUNT: \$0

STATE: New York

COUNTY: Richmond

**INJURIES:**

Premises liability - Fall down - Alleged negligent failure to adequately remove ice and snow following 6-8 inch snowfall the previous day - Plaintiff, son of defendant homeowners, falls head first down eight exterior steps after allegedly slipping on ice - Stairway had two handrails until one removed after being struck by falling telephone pole some months earlier - No code violations - **TBI** - Liability only.

**FACTS:**

In this liability only trial, the plaintiff, who was visiting the defendant homeowner's, his son and daughter-in-law, contended that the defendants improperly removed snow and ice following a six to eight inch snowfall the previous day.

The plaintiff maintained that as he was descending an exterior stairway, he slipped on ice, reached instinctively for the second handrail that had been removed some months earlier after a telephone pole had fallen, and fell down the flight of steps. The fall caused a [traumatic brain injury](#).

The court held that there was no evidence of code violations. The plaintiff maintained that despite this factor, it was clear that principles of safety dictated a second hand rail.

The plaintiff demanded \$1,500,000. The defendant rejected a \$295,000 settlement offer, as well as a \$50,000/\$500,000 high/low agreement. The jury found that the defendant was not negligent.

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34 NY. J.V.R.A. 12:9, 2017 WL 6948273 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Eleventh Judicial District, Queens County, New York.

FORBES vs. ACKER

2104/15

DATE OF VERDICT/SETTLEMENT: September 06, 2017

TOPIC: Motor vehicle negligence - Auto/pedestrian collision - Negligent failure of driver to see plaintiff flag person at construction site - Closed **head injury** causing **TBI**, headaches and slight cognitive deficits - Tear of medial meniscus - Arthroscopic surgery - SJT.

**SUMMARY:**

Result: \$300,000 GROSS VERDICT

**ATTORNEY:**

Plaintiff's: [Gary J. Mandel](#) of Law Office of Gary J. Mandel in Far Rockaway, NY.

JUDGE: [Joseph Esposito](#)

RANGE AMOUNT: \$200,000-499,999

STATE: New York

COUNTY: Queens

**INJURIES:**

Motor vehicle negligence - Auto/pedestrian collision - Negligent failure of driver to see plaintiff flag person at construction site - Closed head injury causing **TBI**, headaches and slight cognitive deficits - Tear of medial meniscus - Arthroscopic surgery - SJT.

**FACTS:**

The plaintiff flag person at a construction site contended that the defendant driver failed to observe her, striking her. The defendant maintained that the plaintiff failed to use a portable stop sign or other object required by OSHA, and was comparatively negligent. The defendant indicated that he did not see the plaintiff because of sun glare.

The plaintiff claimed that she suffered a closed head injury and TBI that will permanently manifest in relatively frequent headaches, and a slight **cognitive deficit** involving memory and concentration. The plaintiff also asserted that she sustained a **tear of the medial meniscus** which will cause permanent pain upon standing for extended periods despite **arthroscopic surgery**. The plaintiff, who no longer works as a flag person, obtained other work at a slightly lower salary.

The defendant maintained that the **knee injuries** substantially resolved. The defendant further denied that the headaches were related to the claimed **head trauma** or that the plaintiff suffered a significant **cognitive deficit**.

The jury found the defendant 70% negligent, the plaintiff 30% negligent and rendered a gross award of \$300,000, including \$150,000 for past pain and suffering and \$150,000 for future pain and suffering. The parties had entered into a \$50,000/\$250,000 (policy) high/low agreement.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 34, Issue 12

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33 Nat. J.V.R.A. 1:11, 2017 WL 7725458 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Eleventh Judicial District, Queens County, New York.

FORBES vs. ACKER

2104/15

DATE OF VERDICT/SETTLEMENT: September 06, 2017

TOPIC: Motor vehicle negligence - Auto/pedestrian collision - Negligent failure of driver to see plaintiff flag person at construction site - Closed **head injury** causing **TBI**, headaches and slight cognitive deficits - Tear of medial meniscus - Arthroscopic surgery - SJT.

**SUMMARY:**

Result: \$300,000 GROSS VERDICT

**ATTORNEY:**

Plaintiff's: [Gary J. Mandel](#) of Law Office of Gary J. Mandel in Far Rockaway, NY.

JUDGE: [Joseph Esposito](#)

RANGE AMOUNT: \$200,000-499,999

STATE: New York

COUNTY: Queens

**INJURIES:**

Motor vehicle negligence - Auto/pedestrian collision - Negligent failure of driver to see plaintiff flag person at construction site - Closed head injury causing **TBI**, headaches and slight cognitive deficits - Tear of medial meniscus - Arthroscopic surgery - SJT.

**FACTS:**

The plaintiff flag person at a construction site contended that the defendant driver failed to observe her, striking her. The defendant maintained that the plaintiff failed to use a portable stop sign or other object required by OSHA, and was comparatively negligent. The defendant indicated that he did not see the plaintiff because of sun glare.

The plaintiff claimed that she suffered a closed head injury and TBI that will permanently manifest in relatively frequent headaches, and a slight **cognitive deficit** involving memory and concentration. The plaintiff also asserted that she sustained a **tear of the medial meniscus** which will cause permanent pain upon standing for extended periods despite **arthroscopic surgery**. The plaintiff, who no longer works as a flag person, obtained other work at a slightly lower salary.

The defendant maintained that the **knee injuries** substantially resolved. The defendant further denied that the headaches were related to the claimed **head trauma** or that the plaintiff suffered a significant **cognitive deficit**.

The jury found the defendant 70% negligent, the plaintiff 30% negligent and rendered a gross award of \$300,000, including \$150,000 for past pain and suffering and \$150,000 for future pain and suffering. The parties had entered into a \$50,000/\$250,000 (policy) high/low agreement.



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34 NY. J.V.R.A. 5:C3, 2017 WL 2687608 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Ninth Judicial District, Westchester County, New York.

SUAREZ vs. STATE OF NY ET AL

121254

DATE OF VERDICT/SETTLEMENT: January 12, 2017

TOPIC: CONSTRUCTION SITE NEGLIGENCE - GENERAL CONTRACTOR AND SUBCONTRACTOR ENGAGED IN OVERPASS REHABILITATION PROJECT ON I-287- 19-YEAR-OLD LABORER STRUCK IN **HEAD** WHEN PART OF THE PULLEY SYSTEM USED TO HOIST STEEL BEARING PLATES SNAPS - SERIOUS **TBI** - APPROXIMATE ONE MONTH COMA.

**SUMMARY:**

Result: \$20,000,000 GLOBAL RECOVERY

**EXPERT WITNESSES:**

Plaintiff's clinical neuropsychologist expert: [Karen L. Dahlman](#), Ph.D. from New York, NY.

Plaintiff's economist expert: [Thomas K. Fitzgerald](#), Ph.D. from Bronxville, NY.

Plaintiff's neurologist expert: [Glenn Salinger](#), M.D. from Helen Hayes Hospital in W. Haverstraw, NY.

Plaintiff's neurologist expert: [Michael I. Weintraub](#), M.D. from Briarcliff Manor, NY.

Plaintiff's psychiatrist expert: [Steven S. Bifulco](#), M.D. from Tampa, FL.

Plaintiff's psychiatrist expert: [Andrew Hornstein](#), M.D. from Helen Hayes Hospital in W. Haverstraw, NY.

Defendant's clinical psychologist expert: [Dustin J. Gordon](#), Ph.D. from Ridgewood, NJ.

Defendant's economist expert: [David Zaumeyer](#), Ph.D. from New York, NY.

Defendant's life care planning expert: [Jane Mattson](#), Ph.D. from Norwalk, CT.

Defendant's psychiatry expert: [Brian Greenwald](#), M.D. from JFK Hospital in Edison, NJ.

**ATTORNEY:**

Plaintiff's: [Barry R. Strutt](#) and [John W. Keegan, Jr.](#) of Keegan, Keegan and Strutt, LLP in White Plains, NY.

JUDGE: N/A

RANGE AMOUNT: \$5,000,000-999,999,999

STATE: New York

COUNTY: Westchester

**INJURIES:**

CONSTRUCTION SITE NEGLIGENCE - GENERAL CONTRACTOR AND SUBCONTRACTOR ENGAGED IN OVERPASS REHABILITATION PROJECT ON I-287- 19-YEAR-OLD LABORER STRUCK IN HEAD WHEN PART OF THE PULLEY SYSTEM USED TO HOIST STEEL BEARING PLATES SNAPS - SERIOUS **TBI** - APPROXIMATE ONE MONTH COMA.

**FACTS:**

This action involved a then 19-year-old laborer who was struck in the head by a metal piece of a make-shift pulley system that snapped and broke off during a hoisting operation. The makeshift pulley system was being used by co-workers to

hoist bearing plates up a steep slope where they were going to be installed on an Interstate highway overpass as part of a statewide bridge rehabilitation project.

The claimant-plaintiff named the state/owner as well as the general contractor and subcontractor. The action involving the state was brought in the Court of Claims to be tried before the presiding judge. The action against the general contractor and subcontractor was brought in Westchester County Supreme Court, to be tried before a jury. Counsel relates that the controlling case law holds while that petitioner-plaintiff could in theory obtain more than one damage verdict, he could only obtain one satisfaction, and that claimant-plaintiff would therefore be “forced” in the long run to “accept” the lower of the two potential verdicts, which the defendant's would satisfy.

The plaintiff's motion for Summary Judgment on liability in the Court of Claims case was granted approximately 11 months before the damage trial was scheduled, which meant the forthcoming damage verdict would be increased and calculated from the date of the liability verdict at 9 per annum. In addition, under New York's structured settlement law (a so-called 50-b verdict) the future damages portion of the entered verdict would be further increased by approximately 4% per annum, further inducing the defendants to settle before the judgment was entered and the 50-b verdict was calculated. Following this bench trial, the parties submitted written summations. (Coincidentally, on the final day of evidence in the Court of Claims damage trial, the plaintiff's motion for Summary Judgment on liability in the Supreme Court case was granted.)A global settlement was further precipitated when plaintiff's counsel moved in Westchester County Supreme Court to voluntarily dismiss that action and take the imminent damage verdict in the Court of Claims.

The claimant-plaintiff maintained in the Court of Claims damages trial that the closed head injury caused a severe TBI, and that the claimant-laborer, now 25 years old, will permanently suffer very significant concentration and memory deficits, and motor tremors on his right side. He also claimed that he will permanently require medical and nursing care, long-term rehabilitation therapy with a TBI component, as well as psychiatric and psychological therapy. The evidence reflected that the plaintiff had already required two psychiatric hospitalizations for depression. The claimant-plaintiff further contended that he will permanently be unable to work, has sustained a substantially diminished quality of life and will need constant supervision and assistance from a therapeutic aide and/or his family throughout his life expectancy of more than 50 years.

During the Court of Claims damages trial, the State, which did not deny that the claimant suffered a serious TBI and that he will be unable to work, contended that he would not require a 24- hour a day attendant until he reached the age of 60 and that an aide for eight hours per day would be sufficient.

The defendant also maintained that the cost of care would be significantly less than plaintiff's experts claimed.

The plaintiff's economic evidence reflected that future medical care costs alone ranged from approximately \$28 million to approximately \$30 million. The State's evidence ranged from approximately \$9 million to approximately \$12 million.

The parties entered into a global settlement of \$20,000,000 after written summations were submitted in the Court of Claims case, but before the actual damage verdict was rendered

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33 NY. J.V.R.A. 11:C8, 2016 WL 7410878 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Ninth Judicial District, Orange County, New York.

EDWARD vs. THE TOWN OF NEWBURGH ET AL

309-2016

DATE OF VERDICT/SETTLEMENT: August, 2016

TOPIC: MOTOR VEHICLE NEGLIGENCE - AUTO/PEDESTRIAN COLLISION - PLAINTIFF SIDEWALK PEDESTRIAN STRUCK IN FRONT OF **HEAD** BY RETRACTED SNOW PLOW THAT WAS ATTACHED TO DEFENDANT MUNICIPALITY'S TRUCK - BLINDNESS IN ONE EYE - **TBI** - CONCENTRATION AND SHORT-TERM MEMORY DEFICITS - PSYCHOLOGICAL REACTION.

**SUMMARY:**

Result: \$2,350,000 RECOVERY

**EXPERT WITNESSES:**

Plaintiff's accident reconstruction expert: [Bradford Silver](#) from Depew, NY.

Plaintiff's neurological expert: [Michael Weintraub](#), MD from Briarcliff, NY.

Plaintiff's neuropsychological expert: Adreas Small, PhD from Fishkill, NY.

Plaintiff's vocational/economic expert: [Stuart Sachnin](#), MS. MBA from Port Chester, NY.

**ATTORNEY:**

Plaintiff's: [Michael A. Fakhoury](#) of Michael A. Fakhoury, P.C. in Fishkill, NY.

JUDGE: N/A

RANGE AMOUNT: \$2,000,000-4,999,999

STATE: New York

COUNTY: Orange

**INJURIES:**

MOTOR VEHICLE NEGLIGENCE - AUTO/PEDESTRIAN COLLISION - PLAINTIFF SIDEWALK PEDESTRIAN STRUCK IN FRONT OF HEAD BY RETRACTED SNOW PLOW THAT WAS ATTACHED TO DEFENDANT MUNICIPALITY'S TRUCK - BLINDNESS IN ONE EYE - **TBI** - CONCENTRATION AND SHORT-TERM MEMORY DEFICITS - PSYCHOLOGICAL REACTION.

**FACTS:**

The plaintiff, 22 years old at the time, contended that the defendant municipal employee, who was transporting dirt from one location to a roadside project, failed to make observations as he was proceeding with the retracted plow protruding approximately 2.5 feet and struck the plaintiff, who was walking on the outer portion of the sidewalk. The plaintiff contended that as a result, he suffered a [head trauma](#) that resulted in optic nerve damage and blindness in one eye and a [TBI/brain contusion](#) and [hematoma](#) that were treated medically. The plaintiff claimed that the TBI will cause permanent difficulties with short-term memory and concentration difficulties. The plaintiff also asserted that he suffered PTSD. The defendant's contentions included the assertion that the driver was involved in road work and was entitled to qualified immunity, precluding recovery in the absence of reckless conduct. The driver apparently did not realize that an incident

had occurred and continued driving. Good Samaritans, who came to the plaintiff's assistance, recorded the license plate and the driver was located a short time later. There were no criminal charges against the driver.

The plaintiff related that as he was simply walking on the outer portion of the sidewalk, he was struck by the protruding plow. He contended that in view of the hazard, stemming from the fact that the retracted plow protruded, the driver should have been especially careful as he was operating the truck, establishing that there were no curves, hills, or other obstructions to sight for some 600 feet. The defendant maintained that the plaintiff should not be walking so close to the outer edge of the sidewalk. He would have argued that this position should be strongly rejected.

The plaintiff would have established that the blindness in one eye is permanent in nature. He also claimed that he sustained a TBI and will permanently suffer difficulties with concentration and short-term memory. The plaintiff, who was working for slightly more than the minimal wage as he was taking a year off from college, has not worked since the incident. He would have contended that he had aspirations to complete college and enter the health care field. The plaintiff did not dispute that he can perform some jobs at the lower end of the compensation rates.

He claimed that in view of his youthful age and the fact that he was matriculating in college, future income claims based on that which would be commanded by a college graduate, was reasonable. The plaintiff's income claims would have ranged from \$1,580,000 to \$2,280,000.

The case settled approximately 1.5 years after the incident for \$2,350,000.

Jury Verdicts Review Publications, Inc.

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35 NY. J.V.R.A. 1:15, 1000 WL 285796 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Ninth Judicial District, Dutchess County, New York.

STELLER vs. BATTISTONI

1820/13

DATE OF VERDICT/SETTLEMENT: September, 2017

TOPIC: Motor vehicle negligence - **Head**-on collision - Concussion - **TBI** sustained by plaintiff suffering dementia - Increased difficulties with cognition, mobility, balance and speech - Compression cervical fracture - Fracture to non-dominant wrist - Nasal fracture.

**SUMMARY:**

Result: \$200,000 RECOVERY

**ATTORNEY:**

Plaintiff's: [Lawrence A. Breslow](#) of Rutberg Breslow Personal Injury Law in Poughkeepsie, NY.

JUDGE: N/A

RANGE AMOUNT: \$200,000-499,999

STATE: New York

COUNTY: Dutchess

**INJURIES:**

Motor vehicle negligence - Head-on collision - Concussion - **TBI** sustained by plaintiff suffering dementia - Increased difficulties with cognition, mobility, balance and speech - Compression cervical fracture - Fracture to non-dominant wrist - Nasal fracture.

**FACTS:**

This case involved a 70-year-old plaintiff driver, in which the plaintiff contended that the defendant driver negligently swerved into the on-coming lane, causing the head-on collision.

The plaintiff, who was suffering from [dementia](#), asserted that she suffered a [closed-head trauma](#) and a brief loss of consciousness in the accident. The plaintiff claimed that she suffered a TBI and that prior difficulties with cognition, mobility, balance and speech were heightened as a result of the superimposition of the trauma on the underlying condition. The defendant denied that the underlying difficulties were aggravated and contended that the plaintiff suffered the natural progression of the disorder.

The plaintiff further asserted that she suffered a [compression fracture](#) at C5 which will cause permanent pain and restriction, a [nasal fracture](#) and a fracture to the non-dominant wrist which was treated conservatively and which will cause permanent pain and reduced grip strength. The [nasal fracture](#) essentially resolved.

The case settled prior to trial for \$200,000.

Jury Verdicts Review Publications, Inc.

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35 NY. J.V.R.A. 4:17, 1000 WL 285986 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Sixth Judicial District, Otsego County, New York.

JAQUES vs. ORT

0213/16

DATE OF VERDICT/SETTLEMENT: No Date Given

TOPIC: Motor vehicle negligence - Rear end collision - Right shoulder tear - Arthroscopic surgery - Three cervical herniations and three lumbar bulges - Plaintiff declines recommended cervical surgery - Closed-head trauma and alleged TBI - Defendant points to history of emotional trauma, including mood disorders - \$25,000/\$175,000 high/low agreement.

**SUMMARY:**

Result: \$193,392 ARBITRATION AWARD

**ATTORNEY:**

Plaintiffs: Michael C. Conway of Harris Conway & Donovan, PLLC in Albany, NY.

JUDGE: Arbitrated before Mark R. Sonders.

RANGE AMOUNT: \$100,000-199,999

STATE: New York

COUNTY: Otsego

**INJURIES:**

Motor vehicle negligence - Rear end collision - Right shoulder tear - Arthroscopic surgery - Three cervical herniations and three lumbar bulges - Plaintiff declines recommended cervical surgery - Closed-head trauma and alleged TBI - Defendant points to history of emotional trauma, including mood disorders - \$25,000/\$175,000 high/low agreement.

**FACTS:**

The plaintiff driver, in her mid 50s, contended that she was struck in the rear as she was stopping for a red light. The defendant maintained that the plaintiff stopped abruptly when the light turned yellow, and negligently contributed to the collision.

The plaintiff contended that she suffered a right shoulder tear that will cause permanent pain and limitation despite arthroscopic surgery. The plaintiff further asserted that she suffered three cervical herniations and three lumbar bulges that were confirmed by MRI and which will cause permanent symptoms. The plaintiff declined recommended cervical surgery, contending that she is concerned about taking the post-surgical medications.

The plaintiff also claimed that she suffered a closed-head injury and permanent difficulties with concentration and memory. The plaintiff indicated that she did not have a significant psychiatric history. The defendant countered that the plaintiff had previously been diagnosed with a mood disorder and major depression for which she essentially denied treatment. The defendant maintained that, at most, the plaintiff suffered a resolving cerebral concussion in the subject collision. The plaintiff contended that to the extent she suffered from difficulties in the past, they were clearly exacerbated by the head trauma.



The arbitrator found the defendant 100% negligent. The arbitrator awarded \$85,000 for the orthopedic complaints, 85,000 for the TBI and \$23,392.50 for past lost wages, for a total of \$193,392.50. The case subsequently settled for \$175,000 in accordance with the high/low agreement.

Jury Verdicts Review Publications, Inc.

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34 NY. J.V.R.A. 6:C5, 2016 WL 9344553 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Twelfth Judicial District, Bronx County, New York.

LORENZO vs. 343 LLC ET AL

24436/05

DATE OF VERDICT/SETTLEMENT: September 08, 2016

TOPIC: [240\(1\) LABOR LAW](#) - PLAINTIFF STRUCK IN **HEAD** AND FACE BY STEEL BEAM BEING MOVED BY CRANE - FAILURE TO USE WEAR GUARDS ON SLINGS SUPPORTING LOADS - **TBI** - ROTATOR CUFF TEAR.

**SUMMARY:**

Result: \$4,700,000 RECOVERY

**EXPERT WITNESSES:**

Plaintiff's engineer expert: [Peter Pomeranz](#), P.E. from Massapequa, NY.

Plaintiff's neuroradiologist expert: Michael L.

JUDGE: [Doris M. Gonzalez](#)

RANGE AMOUNT: \$2,000,000-4,999,999

STATE: New York

COUNTY: Bronx

**INJURIES:**

[240\(1\) LABOR LAW](#) - PLAINTIFF STRUCK IN HEAD AND FACE BY STEEL BEAM BEING MOVED BY CRANE - FAILURE TO USE WEAR GUARDS ON SLINGS SUPPORTING LOADS - **TBI** - ROTATOR CUFF TEAR.

**FACTS:**

This action involved a 33- year-old man who was assigned to help a crane operator to unload steel I-beams from its truck with a synthetic web sling to secure a bundle of beams before hoisting. After the web sling was secured, the plaintiff signaled the crane operator to raise the load of steel I-beams and the load hoisted up slowly. While the beams were being hoisted, the synthetic web sling suddenly broke causing the steel I-beams to fall and strike plaintiff causing TBI, multiple fractures of his head and face and other dental and orthopedic injuries.

The plaintiff brought an action against the owner and general contractor under [Labor Law Section 240](#), a negligence action against the crane operator and his employer, as well as a products liability action against the manufacturer and distributor of the web sling. The plaintiff's motion for Summary Judgment against the owner under [Sec. 240 \(1\)](#) was granted.

An OSHA investigation found the web sling provided by the crane had worn and frayed stitches. The plaintiff's consulting liability engineer opined that a competent person in charge of the lift would have inspected the synthetic web sling and rejected its use because of wear, broken threads and an illegible identification label. He further opined that a competent person would have protected the synthetic web sling by placing wear pads between the sharp edges of the steel beams

and the sling and by directing the plaintiff to move out of harm's way. He opined that the crane operator's failure to do any of the above were departures from good and accepted safety practices and construction industry standards and were proximate causes of the accident.

The plaintiff maintained, in the product liability action, that there was a failure to warn of a known danger of using the web sling without wear guards around sharp edges such as steel. The manufacturer's warning label made no mention of this danger yet their catalog warned to always protect the webbing when it is used around sharp edges. Additionally, the manufacturer was a member of the Web Sling and Tie Down Association, an industry association whose purpose was to keep members informed of new standards as far as manufacturing web slings.

In 2002, three years before plaintiff's accident, the Association recommended that "All web sling labels contain the warning that web slings shall always be protected from being cut by sharp corners, sharp edges, protrusions or abrasive surfaces." The plaintiff's expert engineer opined that the manufacturer's failure to warn of a known danger in using the synthetic web sling without wear guards, and in failing to include a warning on the label regarding the need to protect the web sling from sharp edges, rendered the web sling defective and was a proximate cause of the accident.

The plaintiff asserted that he suffered a TBI with permanent cognitive dysfunction, fractures of the anterior left frontal skull, the posterior wall of the left frontal sinus/roof of the left orbit and maxilla, a left shoulder [rotator cuff tear](#) and impingement with surgery, and the need for future surgery based on re-current tear; residual numbness of the chin and lower lip, [post-concussion syndrome](#), permanent scarring to the chin, loss of upper and lower teeth, [loss of the alveolar bone](#), a permanent scar to the right lower lip, an intra-oral lip scar, avulsion of the chin, mouth and gums, and cervical and lumbar myofascitis.

The plaintiff underwent an MRI of the brain with diffuse tensor imaging without contrast. The plaintiff's neurologist indicated that the testing revealed areas of signal hyper-intensity in the peripheral white matter of the frontal lobe bilaterally and parietal lobe, which was greater on left than right. He indicated that white matter hyper-intensities are a typical objective finding of a [traumatic brain injury](#). Additionally, the quantitative analysis of fractional anisotropy (FA images) showed low FA consistent with traumatic axonal injury.

The plaintiff also underwent a quantitative EEG and the plaintiff's QEEG expert concluded that testing revealed reduced coherence in the bilateral frontal and parietal regions indicating reduced functional connectivity. The expert related that coherence was present in the bilateral frontal and right parietal regions indicating reduced functional differentiation. The expert opined that both conditions are related to reduced speed and efficiency of information processing. Findings were consistent with a moderate to severe [traumatic brain injury](#). Testing showed deviation from normal in the functioning of the brain for executive functioning, abstract thinking, learning, memory, attention control, memory input, information processing, short term memory and memory retrieval.

The plaintiff's MRI DTI scans were subjected to a volumetric brain analysis and the expert related that testing showed brain damage on the left part of plaintiff's brain, especially the frontal lobe which plays a pivotal role in attention, concentration, working memory, inhibition and motivation and many other high level cognitive functions. Testing revealed that plaintiff is experiencing a 0.6% left frontal lobe loss annually. His total loss is 13.4%. The effective age of these specific brain regions would be approximately 64 instead of plaintiff's age of 42 on the date of testing. Additionally, the expert opined that the plaintiff's reduced brain tissue volumes are consistent with a higher likelihood of future accelerated [dementia](#), especially since Alzheimer patients show pronounced orbital- frontal atrophy, a region of the highest volume loss .

The plaintiff's vocational expert would have concluded that the plaintiff is permanently unemployable, and the plaintiff would have made a past lost earnings claim of approximately \$150,000 and a future lost earnings claim of approximately \$570,000.

The case settled prior to trial for \$4,700,000, including \$2,500,000 from the crane company, \$1,600,000 from the third-party employer and \$600,000 on the products liability action against the web sling manufacturer.

Jury Verdicts Review Publications, Inc.

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34 NY. J.V.R.A. 11:22, 1000 WL 285698 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Third Judicial District, Columbia County, New York.

PLAINTIFF MOTORCYCLE PASSENGER vs. DEFENDANT RIDING ON BACK OF  
MOTORCYCLE OPERATED BY DEFENDANT HUSBAND AND OWNED BY CO-DEFENDANT.

N/A

DATE OF VERDICT/SETTLEMENT: No Date Given

TOPIC: Motor vehicle negligence - Defendant motorcycle operator, using motorcycle owned by co-defendant, loses control - Plaintiff, wife of motorcycle operator, suffers burst femur fracture, fractured orbit, alleged diplopia and alleged closed **head injury/TBI** - Damages only - High/low agreement.

**SUMMARY:**

Result: \$95,000 VERDICT

**ATTORNEY:**

Defendant's: [Richard G. Corde](#) of Boeggeman George & Corde, PC in White Plains, NY.

JUDGE: N/A

RANGE AMOUNT: \$50,000-99,999

STATE: New York

COUNTY: Columbia

**INJURIES:**

Motor vehicle negligence - Defendant motorcycle operator, using motorcycle owned by co-defendant, loses control - Plaintiff, wife of motorcycle operator, suffers burst femur fracture, fractured orbit, alleged diplopia and alleged closed head injury/**TBI** - Damages only - High/low agreement.

**FACTS:**

The plaintiff's motion for Summary Judgment on liability against the defendants, driver and owner of a motorcycle, was granted in this case in which the motorcycle operator lost control and traveled off the road, crashing. The female plaintiff motorcycle passenger, approximately age 60, contended that she sustained a burst fracture of the right femur which required surgery and the implantation of a rod that ran from the hip to the knee. The plaintiff asserted that she will suffer extensive permanent pain and require a cane to walk as a result of these injuries.

The plaintiff also suffered a [fractured orbit](#) that required surgery and the insertion of a titanium plate. The plaintiff maintained that she will suffer permanent pain and [diplopia](#). The plaintiff further asserted that she suffered a closed head injury and TBI that will cause permanent [cognitive deficits](#) involving memory and concentration. This alleged injury was discussed by the plaintiff's family physician and her sister, a nurse.

The defendant pointed out that neither double vision nor a [cognitive deficit](#) was claimed before suit was filed and denied that the plaintiff's claims of such injuries should be accepted. The defendant further stressed that at the time of the accident, the plaintiff had been attempting to sell her home and move to Arizona where her daughter resided, has since relocated and has obtained an Arizona driver's license despite the alleged [diplopia](#).

The defendant claimed that the plaintiff fabricated her vision and TBI claims and that the services she received from the county TBI clinic deprived someone with a real TBI from those county services. The defendant argued that the jury should treat the plaintiff like a child who had lied, not reward her, and render the lowest possible award of which they could agree.

The plaintiff, who held a clerical job, claimed that she is permanently unemployable. The plaintiff related that she would have worked until at least age 65. The plaintiff's economist testified that the plaintiff lost \$165,000, based on ceasing work at age 65 and \$400,000 if she would have worked until age 70.

The plaintiff also called an orthopedic surgeon, a general practitioner and a plastic surgeon in addition to an economist. The defendant presented no witnesses.

The defendant had \$1,500,000 in coverage. The plaintiff demanded \$1,200,000 and the defendant made a pre-trial offer of \$600,000, which was rejected by the defendant. The parties then entered into a \$450,000/\$1,000,000 high/low agreement. The jury awarded \$95,000, including \$70,000 for lost wages and \$25,000 for past pain and suffering. They awarded \$0 for future pain and suffering. The case then settled for \$450,000.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 34, Issue 11

34 NY. J.V.R.A. 5:C5, 2016 WL 9178277 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Fourth Judicial District, Franklin County, New York.

TAYLOR vs. THE POINT AT SARANAC LAKE INC. ET AL

2007-777

DATE OF VERDICT/SETTLEMENT: September, 2016

TOPIC: LUXURY HOTEL GUESTS PARTICIPATE IN TOUR RUN BY UNINSURED SNOWMOBILING COMPANY - TOUR GUIDE TRAVELS MUCH FASTER THAN GROUP - DECEDENT, A HEDGE FUND MANGER, FAILS TO STOP AT STOP SIGN EN ROUTE, AND IS STRUCK, SUFFERING FATAL **INJURIES** - DECEDENT'S WIFE SUFFERS CLOSED **HEAD INJURY** AND MILD **TBI** AS WELL AS FRACTURES OF ACETABULUM, FEMUR AND RADIUS.

**SUMMARY:**

Result: \$7,750,000 RECOVERY REACHED IMMEDIATELY PRIOR TO SUMMATIONS

**EXPERT WITNESSES:**

Plaintiff's economic expert: [Joel Morse](#) from Baltimore, MD.

Plaintiff's neuro-psychiatrst expert: [W. Curt LaFrance, Jr.](#), M.D. from Providence, RI.

Plaintiff's orthopedic surgeon expert: [Craig S. Bartlett](#), M.D. from South Burlington, VT.

Defendant's expert: [Matthew Mulholland](#) from Toronto.

Defendant's neurologist expert: [Robert Todd](#), MD from Liverpool, NY.

Defendant's orthopedic surgeon expert: [Daniel Carr](#), M.D. from Syracuse, NY.

**ATTORNEY:**

Plaintiff's: [Ben B. Rubinowitz](#) and [Richard Steigman](#) of Gair Gair Conason Rubinowitz Bloom Hershenhorn Steigman & Mackau in New York, NY.

JUDGE: [John Ellis](#)

RANGE AMOUNT: \$5,000,000-999,999,999

STATE: New York

COUNTY: Franklin

**INJURIES:**

LUXURY HOTEL GUESTS PARTICIPATE IN TOUR RUN BY UNINSURED SNOWMOBILING COMPANY - TOUR GUIDE TRAVELS MUCH FASTER THAN GROUP - DECEDENT, A HEDGE FUND MANGER, FAILS TO STOP AT STOP SIGN EN ROUTE, AND IS STRUCK, SUFFERING FATAL INJURIES - DECEDENT'S WIFE SUFFERS CLOSED HEAD INJURY AND MILD **TBI** AS WELL AS FRACTURES OF ACETABULUM, FEMUR AND RADIUS.

**FACTS:**

This action involved a 63-year-old decedent and is 57- year-old wife who were guests at the defendants luxury hotel and, while there, participated in a guided snowmobile tour. The tour guide was employed by a local company that was uninsured. The plaintiff asserted that hotel should be liable for the actions of the tour guide on an apparent agency theory.

The plaintiff and two other couples had arranged to participate in the activity and were novices. The tour guide started the tour at a campground approximately ten miles from the hotel. After a 20-30 minute instruction session, the group began riding on trails.

The plaintiff claimed that they were unfamiliar with the trails, road crossing and trail signs. Although the first hour of the tour went fine, during the second hour, one of the snowmobiles broke down due to a faulty drive belt. The tour guide then decided to head back to the campground to get another belt. He left one guest in the broken snowmobile and took his wife with him on his snowmobile. He told the others to follow him. It was claimed that he was in a rush and, at this time, failed to protect the participants and rode ahead of them without warning them of road crossings and stop sign. He further proceeded ahead without knowing where the guests were. The decedent did not stop at a stop sign, leading to his crossing a roadway for vehicular traffic and being struck by a minivan. A sign warning of the up-coming stop sign was a short distance before the stop sign in question. The other driver was a defendant and was dismissed on Summary Judgment.

The defendant hotel claimed that the snowmobile company was an independent contractor and that it was not liable for its actions. The plaintiff countered that the hotel arranged the activity, that payment was made through the hotel, and that for guests participating, an extra charge was placed on the guests' hotel bill. The plaintiffs maintained that they had no financial interaction with the snowmobiling company and that it seemed to them that the tour guide was acting as the agent for the hotel. The hotel contended that the negligence of the decedent in failing to stop at the stop sign was the sole cause of the accident. The plaintiff countered that the jury should take into account that the decedent was a novice, was not familiar with the trails, and that although there was a sign warning of the upcoming stop sign at an intersection down the hill was present, the stop sign itself was not of a regulation shape. The plaintiff maintained that when viewed in totality, any negligence on the part of the decedent was minimal. The plaintiff did not present a liability expert.

There was no evidence of conscious pain and suffering. The decedent was a hedge fund manager. He was involved in a new business which had yet to turn a profit and the defendant argued that any financial claims were unduly speculative in nature. The plaintiff countered that based upon decedent's excellent performance in past ventures, and increasing assets under management of the decedent's new venture, the loss of future financial support was great.

The plaintiff wife suffered a closed head injury and [subarachnoid hemorrhage](#) that was treated medically. This plaintiff claimed that she was left with difficulties with short term memory and concentration. The plaintiff has no recollection of the accident. The plaintiff related that she had always been a very decisive individual and must now rely on her adult daughter to help with many decisions.

This plaintiff also suffered left-sided [fractures of the acetabulum](#), femur, tibia and the non-dominant radius. The plaintiff underwent surgery for the radius, hip, femur and tibia/fibula fractures. The plaintiff asserted that although the fractures healed, she will suffer permanent significant pain and limitations which are heightened by the formation of [post-traumatic arthritis](#).

The defendant's orthopedist denied that [traumatic arthritis](#) has developed. The plaintiff countered that the defendant's orthopedist's conclusions should be viewed in the context of his testifying extensively for defendants. The plaintiff elicited testimony from the defendant's orthopedist that he has earned more than \$1,000,000 per year based on his continuing devotion to litigation on behalf of the defense. The defendant's neurologist contended that the surviving plaintiff made a better recovery than claimed.

After a three-week trial and immediately prior to summations, the case settled for \$7,750,000. Counsel for plaintiff relates that this is the largest settlement the history of Franklin County, New York.

Jury Verdicts Review Publications, Inc.



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34 NY. J.V.R.A. 2:C8, 1000 WL 285325 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Second Judicial District, Kings County, New York.

PLAINTIFF STRUCK BY FALLING CEILING TILE WHILE USING  
LAVATORY AT WORK vs. DEFENDANT COMMERCIAL BUILDING.

N/A

DATE OF VERDICT/SETTLEMENT: No Date Given

TOPIC: PLAINTIFF HELP DESK EMPLOYEE IS STRUCK BY FALLING CEILING TILE IN OFFICE BUILDING'S LAVATORY - CLOSED **HEAD INJURY** - **TBI** - PLAINTIFF UNABLE TO CONTINUE AT HELP DESK AND IS GIVEN AN OFFICE SUPPORT POSITION FOR SEVERAL YEARS - PLAINTIFF SUBSEQUENTLY ASKED BY EMPLOYER TO RETURN TO HELP DESK AND IS TERMINATED AFTER HIS ATTEMPTS TO DO SO ARE UNSUCCESSFUL - PLAINTIFF POINTS TO FINDINGS OF AXONAL SHEARING ON DIFFUSION TENSOR MRI TAKEN SEVERAL YEARS AFTER INCIDENT.

**SUMMARY:**

Result: \$3,000,000 RECOVERY

**EXPERT WITNESSES:**

Plaintiff's economic expert: [Anthony Gamboa](#), PhD from Ft. Lauderdale, FL.

Plaintiff's life care planning expert: [Linda Lajterman](#), RN from Ramsey, NJ.

Defendant's economic expert: Albert Griffith from Englewood, NJ.

Defendant's life care planning expert: [Valerie Parisi](#), RN from Doyalstown, PA.

**ATTORNEY:**

Plaintiff's: [Harry Rothenberg](#) of The Rothenberg Law Firm, LLP in New York, NY.

JUDGE: N/A

RANGE AMOUNT: \$2,000,000-4,999,999

STATE: New York

COUNTY: Kings

**INJURIES:**

PLAINTIFF HELP DESK EMPLOYEE IS STRUCK BY FALLING CEILING TILE IN OFFICE BUILDING'S LAVATORY - CLOSED HEAD INJURY - **TBI** - PLAINTIFF UNABLE TO CONTINUE AT HELP DESK AND IS GIVEN AN OFFICE SUPPORT POSITION FOR SEVERAL YEARS - PLAINTIFF SUBSEQUENTLY ASKED BY EMPLOYER TO RETURN TO HELP DESK AND IS TERMINATED AFTER HIS ATTEMPTS TO DO SO ARE UNSUCCESSFUL - PLAINTIFF POINTS TO FINDINGS OF AXONAL SHEARING ON DIFFUSION TENSOR MRI TAKEN SEVERAL YEARS AFTER INCIDENT.

**FACTS:**

The male plaintiff, age 28 at the time, who worked at the help desk for his media company employer, contended that the defendant commercial landlord negligently failed to provide adequate inspection and maintenance. The plaintiff contended that as a result, a ceiling tile detached and struck him in the head as he was using the lavatory. The plaintiff

maintained that he suffered an initial closed head injury and concussion, and a mild [traumatic brain injury](#) (TBI) which will cause permanent extensive [cognitive deficits](#) and will prevent him from continuing to work at any, but an undemanding part-time job.

The plaintiff established that the defendant had received a number of complaints in the preceding several-month period about ceiling tiles being in disrepair and maintained that it nonetheless failed to take steps to correct the difficulties. The plaintiff contended that he was diagnosed with a concussion and missed an initial approximate four-month period from work. The plaintiff maintained that when he returned, he found that he was unable to concentrate sufficiently to continue working at the help desk. The plaintiff also maintained that he also suffered frequent headaches.

The employer assigned him to work in a back office support position and the plaintiff continued to work in such a position for several years. The employer then requested that the plaintiff return to the help desk. The plaintiff contended that although he made the attempt, he was unable to successfully do so, and was terminated. The plaintiff has not returned to work except for sporadic part-time work, and contended that he will be unable to work unless the job is part-time and not demanding.

The plaintiff's treating neuropsychologist maintained that very significant [cognitive deficits](#) were confirmed by a battery of neuropsychological tests. The expert contended that the deficits are permanent in nature. The defendant's neuropsychologist and neuropsychiatrist opined that the tests administered did not show [cognitive deficits](#) that would be caused by an event such as a ceiling tile falling. The defendant maintained that it was very likely that the plaintiff was exaggerating his complaints and that a combination of this factor and personality difficulties were accounting for any claimed deficits.

The plaintiff contended that when the deficits continued, a diffusion tensor MRI was taken that showed axonal shearing. The plaintiff maintained that the specialized test was highly sensitive and provided strong objective proof that the plaintiff suffered brain damage in the incident. The plaintiff and his wife had two children after the incident and the defendant would have argued that significant signs of a normal life existed. The plaintiff countered that he was doing his best to lead a normal life despite his [cognitive deficits](#). His wife would have testified that she is often afraid to leave the children home with the plaintiff.

The case settled prior to trial for \$3,000,000.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 34, Issue 2

34 NY. J.V.R.A. 9:15, 2017 WL 4819987 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Second Judicial District, Kings County, New York.

SINGH vs. CHALOM ET AL

502950/12

DATE OF VERDICT/SETTLEMENT: August 11, 2017

TOPIC: Labor Law - Plaintiff struck by concrete as he is standing on scaffold and falls 6-8 feet to floor below - Skull fracture - **TBI** - Alleged inability to work.

**SUMMARY:**

Result: \$1,600,000 RECOVERY

**EXPERT WITNESSES:**

Plaintiff's construction safety expert: [Scott Silberman](#), P.E. from New York, NY.

Plaintiff's neurologist expert: [Jason Brown](#), M.D. from New York, NY.

Plaintiff's neurologist expert: [Allan Hausknecht](#), M.D. from Queens, NY.

**ATTORNEY:**

Plaintiff's: [Pat James Crispi](#) of Keogh Crispi, PC in New York, NY.

JUDGE: N/A

RANGE AMOUNT: \$1,000,000-1,999,999

STATE: New York

COUNTY: Kings

**INJURIES:**

Labor Law - Plaintiff struck by concrete as he is standing on scaffold and falls 6-8 feet to floor below - Skull fracture - **TBI** - Alleged inability to work.

**FACTS:**

The plaintiff, in his 50s, maintained that as he was standing on a scaffold and in the process of using a crow bar to make a hole in the sheet rock of the first floor ceiling located directly below a damaged area of the second floor, he was struck by sections of the concrete on the second floor that collapsed and fell down onto him. The plaintiff claimed that Sec. 240 (1) was violated. The plaintiff further asserted that was not provided with adequate protection as required by New York State Industrial Code Sec.23-3.3; and that [Labor Law Sec 241 \(6\)](#) was violated as well. Following the impact, the plaintiff was knocked off of the scaffold and fell six to eight feet to the floor below. The defendants contended that the plaintiff was in the process of performing a demolition at the time of the accident and that the floor/ceiling collapse was a structural component of the building that was under renovation; denying that the Labor Law applied.

The plaintiff contended that he was engaged in repairs at the time of the incident and denied that the defense position should be accepted. The plaintiff suffered a [skull fracture](#), [subdural hematoma](#) and a [subarachnoid hemorrhage](#). The plaintiff maintained that he suffered permanent significant [cognitive deficits](#) and denied that he will be able to return to work. The plaintiff has not worked since the incident.

The defense asserted that the plaintiff made a good recovery and contended that he can return to work.

The case settled prior to trial for \$1,600,000.

Jury Verdicts Review Publications, Inc.

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35 NY. J.V.R.A. 6:13, 1000 WL 286063 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Second Judicial District, Kings County, New York.

PLAINTIFF PEDESTRIAN IN HER LATE 20S vs. DEFENDANT  
VAN DRIVER IN COURSE OF EMPLOYMENT FOR TV NETWORK.

N/A

DATE OF VERDICT/SETTLEMENT: No Date Given

TOPIC: Motor vehicle negligence - Auto/pedestrian collision - Defendant working for TV network traveling in reverse to obtain parallel parking spot strikes plaintiff, knocking her down - Alleged cervical and lumbar disc **injuries** treated conservatively - Alleged **TBI** - Grades of plaintiff college student improve after accident.

**SUMMARY:**

Result: \$750,000 RECOVERY

**ATTORNEY:**

Plaintiff's: [Eitan A. Ogen](#) of Ogen & Sedaghati, PC in New York, NY.

JUDGE: N/A

RANGE AMOUNT: \$500,000-999,999

STATE: New York

COUNTY: Kings

**INJURIES:**

Motor vehicle negligence - Auto/pedestrian collision - Defendant working for TV network traveling in reverse to obtain parallel parking spot strikes plaintiff, knocking her down - Alleged cervical and lumbar disc injuries treated conservatively - Alleged **TBI** - Grades of plaintiff college student improve after accident.

**FACTS:**

The plaintiff, age 28 at the time of the recovery, contended that the defendant, who was driving a TV van, quickly traveled in reverse to get a parallel parking space which opened up after he dropped off a correspondent, striking the plaintiff, then a college student, with the rear of his van and knocking her down. The defendant contended that the plaintiff suddenly ran behind his van, rendering him unable to avoid the accident.

The plaintiff maintained that she developed very substantial radiating pain in the cervical and lumbar regions. The plaintiff contended that she suffered cervical and lumbar herniations which were confirmed by MR. The plaintiff proofs reflected that although she had some improvement from physical therapy and a subsequent MRI showed only bulges, she will suffer some symptoms permanently. There was no evidence that disc surgery is indicated. The plaintiff also asserted that she suffered a closed head injury and TBI that will cause permanent symptoms.

The defendant denied that the plaintiff suffered a TBI and pointed out that her grades improved after the incident. The defendant also denied that the MRI showed the claimed herniations. The defendant would have testified that the plaintiff told him that she was late for class and unhurt and only sat in the van and waited for the police after he insisted that

she do so. The defendant also would have testified that the plaintiff seemed to "Perk up" when she realized that the driver worked for a network.

The plaintiff made no income claims.

The case settled prior to trial for \$750,000.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 35, Issue 6

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33 NY. J.V.R.A. 12:C3, 2016 WL 7994374 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Ninth Judicial District, Orange County, New York.

COBENAS vs. GINSBERG DEVELOPMENT CO. LLC. ET AL;

3729/06

DATE OF VERDICT/SETTLEMENT: October 21, 2016

TOPIC: LABOR LAW - FAILURE OF DEFENDANT FRAMING SUBCONTRACTOR TO SECURE PILE OF LUMBER DURING RAINY AND HIGH WIND CONDITIONS - PLAINTIFF STRUCK FROM BEHIND BY LARGE PIECE OF PLYWOOD THAT FLEW OFF PILE BECAUSE OF HIGH WINDS - PLAINTIFF KNOCKED TO GROUND AND SUFFERS NASAL FRACTURE - AGGRAVATION OF DEGENERATIVE DISC DISEASE PROMPTS FUSION SURGERY - ALLEGED **TBI** AND COGNITIVE DEFICITS.

**SUMMARY:**

Result: \$767,494 VERDICT

**ATTORNEY:**

Defendant's: [Richard Winograd](#) of Ginarte, O'Dwyer, Gonzalez, Gallardo & Winograd, LLP in New York, NY.

JUDGE: [Robert A. Onofry](#)

RANGE AMOUNT: \$500,000-999,999

STATE: New York

COUNTY: Orange

**INJURIES:**

LABOR LAW - FAILURE OF DEFENDANT FRAMING SUBCONTRACTOR TO SECURE PILE OF LUMBER DURING RAINY AND HIGH WIND CONDITIONS - PLAINTIFF STRUCK FROM BEHIND BY LARGE PIECE OF PLYWOOD THAT FLEW OFF PILE BECAUSE OF HIGH WINDS - PLAINTIFF KNOCKED TO GROUND AND SUFFERS NASAL FRACTURE - AGGRAVATION OF DEGENERATIVE DISC DISEASE PROMPTS FUSION SURGERY - ALLEGED **TBI** AND COGNITIVE DEFICITS.

**FACTS:**

This bifurcated case involved a plaintiff employee of a framing subcontractor at a new home development project who was 32 years old at the time of the accident and in his early 40's at the time of the damages trial. The plaintiff maintained that after he retrieved a 2 x 6 piece of wood from a pile and was walking away with his hardhat on while carrying the wood on his shoulder, a strong gust of wind caused a plywood plank to fly off the pile and strike him in the back. The plaintiff was knocked face first to the ground. The plaintiff named the general contractor and framing subcontractor as defendants under both Secs. 241(6) and 200 (common law negligence) of the Labor Law. The Court dismissed the Sec. 241 (6) aspect, holding that no underlying violations were applicable and supported the plaintiff's contentions. The case proceeded to the liability trial on the Sec. 200 claims only.

The plaintiff related that because of inclement weather, work was delayed that Friday. The plaintiff maintained that although rainy and windy conditions continued, and although the forecast called for high winds that day, the plaintiff and co-employees were told to start work. The defendant framing subcontractor had rented a crane for that day to



bring dormers to the roof and the plaintiff claimed that because of the expense entailed in canceling the work that day, the workers were told to continue. The plaintiff also asserted that a short time before the subject incident occurred; the general contractor and framing subcontractor saw that the boom of the crane lost control because of the wind. He claimed that it was clear that the work should be stopped or at the very least, loose piles be secured. The defendants denied that the crane incident occurred before the incident and contended that it could well have been same gust of wind to cause both. The defendants also asserted that the crane incident was in another part of the project not within eye shot in this massive project.

The defendants denied that that there was sufficient wind to lift a piece of plywood from the pile and the defendants question whether the incident that was only allegedly witnessed by the plaintiff and a coworker even occurred. The plaintiff countered that the defense engineer's conclusions would only be accurate if the pieces were laid neatly on the pile and not if they were placed haphazardly at various angles.

The plaintiff maintained that because of nasal and sinus fractures and concerns for breathing difficulties, he underwent surgery in which a wire mesh was installed. The plaintiff contended that he will permanently suffer some pain and discomfort at the mesh site, especially in cold weather. The plaintiff further asserted that the trauma caused a lumbar herniation that necessitated a lumbar fusion. The plaintiff claimed that he will permanently experience extensive pain and weakness in the lumbar area.

The defendants denied that the plaintiff suffered a herniation in the alleged incident. The defense claimed that the films showed very significant [degenerative disc disease](#) and that this condition prompted the surgery. The plaintiff countered that he had no prior lumbar symptoms or treatment and contended that irrespective of the question of aggravation, which was not specifically addressed by the jury, it was clear that the surgery was causally related to the incident.

The evidence disclosed that the plaintiff had been working in physically rigorous positions since the age of ten in his native Ecuador. He maintained even if such history had an impact on the films, it was clear that the incident occasioned a very significant aggravation that led to the fusion surgery that was performed four years after the accident.

The plaintiff further asserted that the [closed head trauma](#) occasioned a TBI and [cognitive deficits](#) involving memory and concentration deficits. There was a questionable loss of consciousness. The Glasgow Coma Scale taken in the hospital was in the normal range and the defense claimed that the alleged deficits were related to issues of secondary gain only.

The liability jury found the defendant framing subcontractor 100% negligent and found that the defendant developer was not negligent. The damages jury awarded \$766,261, including \$250,000 for past pain and suffering, \$350,000 for future pain and suffering, and \$266,261 for medical bills. 9% interest was added since the date of the liability verdict, which was April 26, 2013, brought the judgment to \$1,009,343.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 33, Issue 12

33 NY. J.V.R.A. 1:C1, 1000 WL 284999 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Fourth Judicial District, Schenectady County, New York.

MILLER vs. RENT-A-CENTER EAST INC.ET AL

2011/27.

DATE OF VERDICT/SETTLEMENT: No Date Given

TOPIC: LABOR LAW - 20 FT FALL FROM LADDER DURING COURSE OF PLAINTIFF'S REMOVAL OF A LARGE, NON- OPERATIONAL SATELLITE DISH - SKULL FRACTURE - **TRAUMATIC BRAIN INJURY** - SPASTIC QUADRIPLESIS.

**SUMMARY:**

Result: \$6,800,000 RECOVERY

**EXPERT WITNESSES:**

Plaintiff's economic expert: [Arthur S. Friedson](#), PhD from Syracuse, NY.

Plaintiff's engineering expert: Richard R.

**ATTORNEY:**

Plaintiff's: [Thomas E. DeLorenzo](#) and [Cory Ross Dalmata](#) of DeLorenzo Law Firm in Schenectady, NY.

JUDGE: N/A

RANGE AMOUNT: \$5,000,000-999,999,999

STATE: New York

COUNTY: Schenectady

**INJURIES:**

LABOR LAW - 20 FT FALL FROM LADDER DURING COURSE OF PLAINTIFF'S REMOVAL OF A LARGE, NON- OPERATIONAL SATELLITE DISH - SKULL FRACTURE - **TRAUMATIC BRAIN** INJURY - SPASTIC QUADRIPLESIS.

**FACTS:**

This case involved a plaintiff whose company, of which he was the sole proprietor, was retained to remove an old satellite dish from the roof of a commercial building in a strip mall. In order to perform the task, the plaintiff was required to first cut the dish into six portions using a handheld jigsaw. Following the removal of the satellite dish, the plaintiff was caused to fall when the unsecured ladder he was descending shifted, and he fell some 20 feet to the pavement. The plaintiff suffered catastrophic injuries including [skull fractures](#) and a [traumatic brain injury](#), resulting in a spastic quadriplegic condition with [dysphagia](#), contractures, incontinence and loss of verbal interaction. The plaintiff's experts opined that the plaintiff maintained sufficient cognitive ability to be aware of the nature of his plight. The plaintiff named the property owner, the commercial tenant, the tenant's national property management company, the locally retained property management company, and the subcontractor who hired the plaintiff's employer. The defendants named the employer as a third party defendant. It was undisputed that the plaintiff suffered grave injuries and such claims against the employer were not barred. The defendants maintained that removal of a satellite dish was not a protected activity under Labor Law 240(1) and that the plaintiff was the sole proximate cause of his injuries.

The plaintiff countered that the removal of the large dish was required in order to reach portions that were the subject of very significant repairs and that the work, therefore, was part of major alterations and that the activity was a protected activity. He also argued, inter alia, that the large, six foot, old fashioned dish was a “structure” in and of itself, and that the fall that occurred in the course of work of the demolition of the structure was clearly subject to the provisions of Sec. 240 (1). He suffered severe [skull fractures](#) and a devastating injury, and it was initially feared that he would remain in a [permanent vegetative state](#). The plaintiff regained consciousness, however, and his experts opined that despite the devastating nature of the [brain injuries](#), and the inability to talk, he retained sufficient cognitive ability to be aware of the nature of his plight. The plaintiff presented a video depicting the plaintiff’s mother sitting next to his hospital bed telling him a story. He smiled at the end of the story and argued that this evidence reflected that he was able to comprehend the story. The defendants denied that this position should be accepted and maintained that the plaintiff was not aware of his surroundings subsequent to the fall.

The plaintiff presented evidence of the cost of future medical care that ranged from \$5,000,000 - \$12,000,000, depending upon the level of care and whether plaintiff remained in-patient or was transitioned to his home.

The case settled pending decision on all parties motions for summary judgment on liability pursuant to Labor Law, and prior to trial for \$6,800,000 in fresh money. The employer/worker's comp carrier paid \$5,750,000 in fresh money. The remainder of the proceeds received was broken down as \$50,000 from the national property manager, \$350,000 from the commercial tenant and \$150,000 from the landowner, and \$500,000.00 from the local property management company. The subcontractor had defaulted. In addition, the employer/compensation carrier agreed to waive their lien of approximately \$1,000,000 and agreed to cover the plaintiff’s medical and related expenses for his lifetime

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 33, Issue 1

35 NY. J.V.R.A. 6:1, 2017 WL 9884987 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Eleventh Judicial District, Queens County, New York.

FANDINO vs. PALKHIWALA ET AL

702350/15

DATE OF VERDICT/SETTLEMENT: November 01, 2017

TOPIC: Medical malpractice - Cardiologist negligence - Negligent use of medication with anti-platelet properties to treat headaches of patient already taking two anti-platelet medications because of cardiac stenting two years earlier - Subdural hematoma - Moderate **brain** damage - Craniotomy - **Traumatic** epilepsy - Plaintiff contends he will require home health care or institutionalization earlier than otherwise have been the case - Plaintiff already on disability at time of alleged malpractice and makes no income claims.

**SUMMARY:**

Result: \$966,500 VERDICT

**EXPERT WITNESSES:**

Plaintiff's economist expert: [Andrew Weintraub](#), Ph.D. from Rhinebeck, NY.

Plaintiff's hematologist expert: [Thomas S. Kickler](#), M.D. from Baltimore, MD.

Plaintiff's psychiatrist expert: [Brian D. Greenwald](#), M.D. from Edison, NJ.

Defendant's cardiologist expert: [Monty M. Bodenheimer](#), M.D. from New Hyde Park, NY.

Defendant's internal medicine expert: [Richard S. Blum](#), M.D. from Glen Cove, NY.

**ATTORNEY:**

Plaintiff's: [Anthony M. Makrides](#) of Makrides Law Group, PLLC in New York, NY.

JUDGE: [Allan B. Weiss](#)

RANGE AMOUNT: \$500,000-999,999

STATE: New York

COUNTY: Queens

**INJURIES:**

Medical malpractice - Cardiologist negligence - Negligent use of medication with anti-platelet properties to treat headaches of patient already taking two anti-platelet medications because of cardiac stenting two years earlier - Subdural hematoma - Moderate **brain** damage - Craniotomy - **Traumatic** epilepsy - Plaintiff contends he will require home health care or institutionalization earlier than otherwise have been the case - Plaintiff already on disability at time of alleged malpractice and makes no income claims.

**FACTS:**

This medical malpractice action involved a plaintiff, in his mid 50s, who had been placed on two anti-platelet medications, Effient and [aspirin](#), to prevent clotting of the [stents](#) when cardiac [stents](#) were placed approximately two years earlier. The plaintiff continued to take the medication as of approximately two years later when he presented to the defendant with complaints of headaches and the defendant prescribed [Meloxicam](#). The plaintiff alleged that the [Meloxicam](#) has anti-[platelet](#) effects, especially when combined with the other two anti-platelet medications, Effient and [aspirin](#), and that the synergistic effect of the three medications inhibited the plaintiff's [platelets](#) and affected his blood vessels such that they

caused his [subdural hematoma](#). The defense claimed that the [hematoma](#) had caused the plaintiff's initial headaches and thus, formed before he started taking the [Meloxicam](#).

The defense relied on deposition testimony and a note in the Mount Sinai Queens hospital chart which noted that the plaintiff had bumped his head on a kitchen cabinet door a couple of weeks before the prescription of the [Meloxicam](#) was given, and that this might have contributed to the [hematoma](#). The plaintiff countered that the imaging studies at Mount Sinai were conducted a few months after the institution of the drug, and showed both acute and subacute indications of a [subdural hematoma](#). The plaintiff established that by definition, an [acute subdural hematoma](#) has been present for between zero days and three days and a subacute [subdural hematoma](#) has been present for between three days and three weeks. The plaintiff maintained, therefore, that the kitchen cabinet incident could not have accounted for the [hematoma](#). The plaintiff also asserted that the time frame in which the [Meloxicam](#) was given was consistent with the development of the [hematoma](#).

The plaintiff maintained that after being diagnosed with the [subdural hematoma](#), he was stabilized at Mount Sinai in Queens before being transferred to Mount Sinai in Manhattan, where he underwent a [craniotomy](#) to remove the blood from the subdural space and relieve the pressure on the brain. He was then released to his home where he was confined for approximately three months.

The plaintiff was followed by a neurosurgeon for several months and was then referred to a neurologist. He continues to see that neurologist to monitor [epilepsy](#) that developed as a result of his [hematoma](#). He also takes anti-seizure medication to manage the condition. The plaintiff also claimed that the [hematoma](#) left him with moderate brain damage, memory loss, confusion and disorientation. He further testified that he has intermittent numbness in his left hand that causes him to occasionally drop objects he is holding.

The plaintiff added that because of the disorientation and confusion, he does not feel comfortable driving more than a few minutes from his house. He also said he was worried about taking his young daughter to unfamiliar places by himself. His [brain injury](#) expert also opined that the plaintiff would likely require a home health aide or institutionalization within a nursing home sooner than he would have if he didn't suffer the [hematoma](#).

The plaintiff was on disability and made no income claims.

The jury found for the plaintiff and awarded \$966,500. The award was allocated as follows: \$16,500 future medical costs; \$400,000 for past pain and suffering; \$50,000 for future pain and suffering and \$500,000 for future custodial care costs.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 35, Issue 6

35 NY. J.V.R.A. 2:C5, 2017 WL 8292954 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Seventh Judicial District, Monroe County, New York.

FOXHALL vs. OLDCASTLE INC. ET AL

10/30/17

DATE OF VERDICT/SETTLEMENT: October 30, 2017

TOPIC: [SEC 240 \(1\) LABOR LAW](#) - PLAINTIFF ELECTRICIAN/FOREMEN KNOCKED OFF OF LADDER BY 10-FOOT SECTION OF PIPE - PLAINTIFF FALLS APPROXIMATELY 12 FEET TO FLOOR BELOW - **TRAUMATIC BRAIN INJURY** - THREE-WEEK HOSPITALIZATION - REDUCED COGNITION - THORACIC, CLAVICLE AND SCAPULA FRACTURES - BRACHIAL PLEXUS **INJURY** - PERMANENT DISABILITY.

**SUMMARY:**

Result: \$3,300,000 RECOVERY

**ATTORNEY:**

Plaintiffs: [Joseph A. Rossi, Jr.](#) of Kammholz Law, PLLC in Victor, NY.

JUDGE: [Ann Marie Taddeo](#)

RANGE AMOUNT: \$2,000,000-4,999,999

STATE: New York

COUNTY: Monroe

**INJURIES:**

[SEC 240 \(1\) LABOR LAW](#) - PLAINTIFF ELECTRICIAN/FOREMEN KNOCKED OFF OF LADDER BY 10-FOOT SECTION OF PIPE - PLAINTIFF FALLS APPROXIMATELY 12 FEET TO FLOOR BELOW - **TRAUMATIC BRAIN INJURY** - THREE-WEEK HOSPITALIZATION - REDUCED COGNITION - THORACIC, CLAVICLE AND SCAPULA FRACTURES - BRACHIAL PLEXUS INJURY - PERMANENT DISABILITY.

**FACTS:**

The 43 year-old male plaintiff electrician/foreman contended that as he was using a "Sawzall" to cut through metal heating pipes suspended from the ceiling while working from a ladder approximately 12 feet, a 10-foot section of the pipe suddenly swung down, knocking the ladder out from under him. The plaintiff brought this action under the absolute liability provisions of [Labor Law Sec. 240 \(1\)](#). The plaintiff asserted that as a result of the fall, he suffered a severe closed head injury with TBI which has caused him significant [cognitive deficits](#), thoracic, clavicle and [scapula fractures](#), as well as a severe psychiatric reaction including PTSD. The plaintiff maintained that his injuries will permanently prevent him from working again. The defendant maintained that the sole proximate cause of the incident was the failure of the plaintiff to use available fall arrest equipment. The plaintiff as well as several of his co-workers testified that there was no place to safely tie off the fall arrest equipment and the plaintiff argued that this defense contention should clearly be rejected.

The evidence revealed following the fall, the plaintiff was diagnosed as suffering from a [traumatic brain injury](#), left temporal parietal [subarachnoid hemorrhage](#) (SAH), surrounding [cerebral edema](#) with lateral ventricle compression, as well as a right temporal [subdural acute hematoma](#) (SDH) measuring 7 mm, fractures to right transverse process of T1

and T9, a displaced right clavicle fracture, a brachial plexus injury, and fractures to eight right-sided ribs. The plaintiff was hospitalized for two weeks whereupon he was transferred to a rehabilitation hospital as an in-patient for ten days.

The plaintiff maintained that despite excellent care given by his doctors, he is nonetheless left with a severe closed head injury manifesting in very significant difficulties with concentration and memory. The plaintiff related that he often has difficulties finding the right words to use while speak with people. He further contended that he suffered a severe psychiatric reaction following the fall including PTSD, as well as anxiety and depression. The plaintiff testified that he suffers frequent nightmares and flashbacks of the event which exacerbates his anxiety.

The plaintiff presented evidence that he has undergone some 176 mental health appointments for group therapy, individual therapy, and consultations with a psychiatrist, a psychologist and a neuropsychologist. The plaintiff also had over 20 visits with a neurologist and a neurosurgeon, and another 22 visits with an orthopedic surgeon and physiatrist, undergoing neck and right shoulder injections to control his pain during these visits. The plaintiff asserted that he will nonetheless suffer permanent, extensive pain and limitations.

The plaintiff maintained that as a result of the injuries he sustained, he will be permanently unable to return to work. The plaintiff's proofs would have shown that he had a very good work history and was well liked by associates and subordinates. The plaintiff's treating physicians and the physicians examining the plaintiff for the workers' compensation carrier concurred with the claim that the plaintiff will never be able to return to work. The plaintiff made a past and future future income claim of approximately \$1,860,000.

The case settled before motion practice for \$3,300,000 plus a waiver of the \$234,911 workers' compensation lien.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 35, Issue 2

32 Nat. J.V.R.A. 11:2, 2016 WL 10703549 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Third Judicial District, Albany County, New York.

TINSMAN vs. ALBANY MEMORIAL HOSPITAL ET AL

2980-13

DATE OF VERDICT/SETTLEMENT: December 19, 2016

TOPIC: Medical malpractice - E.R. negligence - Alleged negligent failure of emergency room physician to timely transfer patient to tertiary care center for neurosurgery after closed **head** trauma suffered in fall - Severe **brain** damage.

**SUMMARY:**

Result: DEFENSE VERDICT

**EXPERT WITNESSES:**

Defendant's emergency medicine expert: [Dietrich Jehle](#), M.D. from Buffalo, NY.

Defendant's neurosurgeon expert: [Jeffrey Oppenheim](#), M.D. from Suffern, NY.

**ATTORNEY:**

Defendant's: Jack Phelan of Phelan, Phelan & Danek, LLP in Albany, NY.

Defendant's: [Richard Maguire](#) of Maguire Cardona, P.C. in Albany, NY.

JUDGE: [Gerald Connolly](#)

RANGE AMOUNT: \$0

STATE: New York

COUNTY: Albany

**INJURIES:**

Medical malpractice - E.R. negligence - Alleged negligent failure of emergency room physician to timely transfer patient to tertiary care center for neurosurgery after closed head trauma suffered in fall - Severe **brain** damage.

**FACTS:**

The plaintiff, in her early 40s, who had fallen down at boyfriend's home, contended that after the defendant emergency room physician observed brain damage on a **CT-scan**, she negligently delayed transferring the patient to a tertiary care center for **neurosurgery** for approximately one and a-half hours. The plaintiff maintained that as a result, a very significant additional amount of swelling occurred, causing additional brain damage.

The plaintiff maintained that it was impossible to determine the extent of damage that would have occurred not for the delay from the final result, and that the jury should be instructed that they could render an award for the full extent of the brain damage. The jury was so charged over objection by the defendant.

The defendant maintained that the patient was transferred in a timely manner. The defendant claimed that a short delay was occasioned by the need to obtain a respiratory therapist and that if the transfer had been made before such a professional was obtained, and the patient had died during transport, it was likely that an action on an allegedly premature transfer would have been brought.



The jury found that the defendant was not negligent.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: National Jury Verdict Review & Analysis, Vol. 32, Issue 11

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34 NY. J.V.R.A. 1:4, 2016 WL 8256103 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Third Judicial District, Albany County, New York.

TINSMAN vs. ALBANY MEMORIAL HOSP.ET AL

2980-13

DATE OF VERDICT/SETTLEMENT: December 19, 2016

TOPIC: Medical Malpractice - Emergency Department negligence - Alleged negligent failure of emergency room physician to timely transfer patient to tertiary care center for neurosurgery after closed **head** trauma suffered in fall - Severe **brain** damage.

**SUMMARY:**

Result: DEFENSE VERDICT

**EXPERT WITNESSES:**

Defendant's emergency medicine expert: [Dietrich Jehle](#), MD from Buffalo, NY.

Defendant's neurosurgeon expert: [Jeffrey Oppenheim](#), M.D. from Suffern, NY.

**ATTORNEY:**

Defendant's: Jack Phelan of Phelan, Phelan & Danek, LLP in Albany, NY.

Defendant's: [Richard Maguire](#) of Maguire Cardona, P.C in Albany, NY.

JUDGE: [Gerald Connolly](#)

RANGE AMOUNT: \$0

STATE: New York

COUNTY: Albany

**INJURIES:**

Medical Malpractice - Emergency Department negligence - Alleged negligent failure of emergency room physician to timely transfer patient to tertiary care center for neurosurgery after closed head trauma suffered in fall - Severe **brain** damage.

**FACTS:**

The plaintiff, in her early 40's, who had fallen down at boyfriend's home, contended that after the defendant emergency room physician observed brain damage on a [CT scan](#), she negligently delayed transferring the patient to a tertiary care center for [neurosurgery](#) for approximately 1.5 hours. The plaintiff maintained that as a result, a very significant additional amount of swelling occurred, causing additional brain damage.

The plaintiff maintained that it was impossible to determine the extent of damage that would have occurred not for the delay from the final result, and that the jury should be instructed that they could render an award for the full extent of the brain damage. The jury was so charged over objection by the defendant.

The defendant maintained that the patient was transferred in a timely manner. The defendant claimed that a short delay was occasioned by the need to obtain a respiratory therapist and that if the transfer had been made before such

a professional was obtained, and the patient had died during transport, it was likely that an action on an allegedly premature transfer would have been brought.

The jury found that the defendant was not negligent.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 34, Issue 1

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34 NY. J.V.R.A. 11:24, 2017 WL 6502158 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Tenth Judicial District, Suffolk County, New York.

CAROLYN MCNEILL vs. SUFFOLK COUNTY

08-24486

DATE OF VERDICT/SETTLEMENT: August 01, 2017

TOPIC: Municipal liability - Woman suffers serious **injury** after being struck by sign pole during storm - **Brain** aneurysms - **Brain** damage.

**SUMMARY:**

Result: \$14,000,000 VERDICT

**ATTORNEY:**

Plaintiff's: [Glenn Auletta](#) of Gruenberg Kelly Della in Ronkonkoma, NY.

Defendant's: Town of Islip: [Gerald L. Lotto](#) of Gerald L. Lotto Law Firm in Bohemia, NY.

Defendant's: Suffolk County: [Dennis M. Brown](#) of Suffolk County Attorney in Hauppauge, NY.

JUDGE: N/A

RANGE AMOUNT: \$5,000,000-999,999,999

STATE: New York

COUNTY: Suffolk

**INJURIES:**

Municipal liability - Woman suffers serious injury after being struck by sign pole during storm - **Brain** aneurysms - **Brain** damage.

**FACTS:**

In this action, the guardian of a woman sued after she was severely injured by a falling street sign. The matter was resolved with a jury verdict.

On June 29, 2007, at approximately 6:20 p.m., near the intersection of Fifth Avenue and Fairtown Road in the Town of Islip in the State of New York, the plaintiff, Carolyn McN., was struck in the head by a street name sign pole. The plaintiff sustained a **head injury** resulting in **brain aneurysms** and **stroke**, and ultimately brain damage. The plaintiff asserted that she was struck by the negligently maintained, inspected and repaired street sign pole, with the responding officer noting a circular street name pole near where he found the plaintiff.

The plaintiff's mother filed suit on her behalf and on her own behalf in the Supreme Court of Suffolk County against the defendants, Town of Islip and Suffolk County. The plaintiff filed a claim for negligence against the town, as well as a loss of services action filed by the injured woman's mother.

At trial, the plaintiffs brought testimony from the plaintiff's mother and the responding officer, the responding EMS personnel and two different E.R. nurses from two different visits within 48 hours of each other, due to the plaintiff's

inability to testify due to her physical and mental condition. The plaintiff's mother testified that her daughter stated that a street name pole hit her in the head.

Officer Alexander O., who found the plaintiff, also testified. The officer testified that when he found plaintiff, she was sitting on the ground and complaining that a street name sign pole had fallen and hit her on her head. This testimony was corroborated by the responding EMS tech, Samatha O., who also testified seeing a round steel street name pole next to the plaintiff. The officer testified that he thought it was a street sign because he saw a circular pole nearby, but did not see a sign attached to it.

The plaintiff established, through newspaper legal notices from 1964 and 1965, that the Town of Islip solicited bids for the same street name poles involved in the incident. Additionally, the plaintiffs uncovered the 1965 Town of Islip budget for the installation of the round steel street name poles that were involved in the incident.

The plaintiff also called the Town of Islip witness, Peter K., the second in command for the public works department. Mr. K. admitted, on cross-examination, that the Town of Islip had no installation records for the street name poles, never conducted any inspections of the street name poles for more than 41 years, the Town of Islip did not maintain the street name poles for over 41 years, nor did the Town of Islip have a replacement schedule for the uninspected and unmaintained street name poles. Finally, Mr. K. admitted that the Town of Islip followed the Federal Highway Administration Uniform Manual of Traffic Control Devices, which he called the "Bible." The Manual, which was admitted into evidence, specifically called for maintenance and inspection, as well as a replacement schedule for street name poles.

The plaintiff called expert witness, Stanley F., P.E., to provide testimony on the galvanic reaction of galvanized steel to salt and brine, common chemicals placed on road surfaces by the Town of Islip for snow/ice conditions. Mr. F. provided expert testimony on the chemical reaction and impact of these galvanic reactions over 41 years, and how the street name poles became rusted at the neck (area where the pole meets the ground), and lost its structural integrity, causing the collapse.

The plaintiff also proffered testimony from life care planning expert, Joseph C., M.D. Dr. C. provided testimony regarding the extensive future care and medical expenses to be incurred by Ms. McN. for the remainder of her life in a full-time facility. The plaintiff also produced expert witness testimony from Dr. Kenneth A., M.D., a Board Certified Internist. Dr. A. provided expert testimony on the issue of medical causation and outlined what occurred during the initial [brain surgery](#). Dr. A. provided testimony due to the inability of the treating brain surgeon, Dr. David C., M.D., to testify.

The defense brought testimony from Clifford M., a county public works employee that was at that time a highway maintenance supervisor. The witness testified that he was unaware of any sign inspection procedures used by the county. The witness testified that the County was responsible for installing and maintaining stop signs, but did not install street signs. Further, the witness testified that the county did not use circular sign poles, and instead used a U-channel post.

The county also brought testimony from Paul M., who testified that the County is responsible for the installation and maintenance of stop signs when a Town road intersects a County road. Having been shown the "Sign card" for the County stop sign in question, he testified that the County took over control of the stop sign in 1976, after it had been installed by the Town. The witness stated that he was unaware of any inspections of the sign since that time.

The defendant town brought testimony from Peter K., who was employed by the Town of Islip Department of Public Works, at that time acting as a public works project supervisor. He stated that stop signs, after installation by the town, were not inspected. Further, the witness stated that records regarding the intersection of Fifth and Fairtown indicated that both signs were missing from that location as of October 2, 2007, after the plaintiff's injury. The witness further

stated that he had seen, in the past, round [cylinder](#) poles used by the two for street signs and stop signs, though it was rare. Finally, he stated that the county maintained stop signs at the intersection of Town and County roads.

The jury returned a finding for the plaintiff and awarded \$14 million in damages.

Jury Verdicts Review Publications, Inc.

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34 NY. J.V.R.A. 2:C2, 2017 WL 1056746 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Second Judicial District, Kings County, New York.

RODRIGUEZ vs. NYCHHC

502621/13

DATE OF VERDICT/SETTLEMENT: January, 2017

TOPIC: MEDICAL MALPRACTICE - FAILURE OF NYCHHC PHYSICIANS AND NURSES TO PROPERLY MONITOR NEW BORN FOR SIGNS OF JAUNDICE - HYPERBILIRUBINEMIA - **BRAIN** DAMAGE - MICROCEPHALUS, DEVELOPMENTAL DISABILITIES - CHILD LIVES AT HOME, NON-VERBAL, CAN AMBULATE.

**SUMMARY:**

Result: \$6,000,000 RECOVERY INCLUDING \$3,000,000 ALLOCATED TO MEDICAL INDEMNITY FUND

**ATTORNEY:**

Plaintiffs: [Kathleen P. Kettles](#) of Wingate Russotti Shapiro & Halperin, LLP in New York, NY.

JUDGE: N/A

RANGE AMOUNT: \$5,000,000-999,999,999

STATE: New York

COUNTY: Kings

**INJURIES:**

MEDICAL MALPRACTICE - FAILURE OF NYCHHC PHYSICIANS AND NURSES TO PROPERLY MONITOR NEW BORN FOR SIGNS OF JAUNDICE - HYPERBILIRUBINEMIA - **BRAIN** DAMAGE - MICROCEPHALUS, DEVELOPMENTAL DISABILITIES - CHILD LIVES AT HOME, NON-VERBAL, CAN AMBULATE.

**FACTS:**

In this medical malpractice action, the plaintiff contended that the defendant physicians and nursing staff, employed by the defendant NYCHHC, negligently failed to properly monitor the baby for signs of [jaundice](#). The plaintiff maintained that as a result, the child suffered [hyperbilirubinemia](#) that required a “double [exchange transfusion](#).” During the transfusion, the child suffered [cardiac arrest](#) and [hypoxia](#) resulting in diffuse brain and kidney injury, now at CKD Stage 3 which is considered moderate. The child is developmentally disabled, cannot speak, but can walk, and the child resides at home.

The baby was born with APGAR scores of 9 and 9 at 4:40 a.m. on March 3, 2012. The newborn was “boarded” with her mother instead of being placed in the nursery. The plaintiff asserted that although such practice assists in bonding between mother and baby, it still requires careful inspection and evaluation of the infant while placed with the mother. The plaintiff contended that in this case, the need for monitoring was heightened as there was minor [blood type](#) incompatibility between the mother and child which increased the risk of elevated [bilirubin](#) levels, and if properly monitored and treated, will generally resolve.

The normal range of [bilirubin](#) is 3-1 and it was determined at 6:00 p.m. on March 4, 2012, that the baby had a level of 24.3. It was decided that a double [exchange transfusion](#), which takes a number of hours to complete, was required. The evidence reflected that at 9:27 p.m., the child's [bilirubin](#) levels were 27.8. The child suffered the arrest at around midnight. The MRI showed diffuse [anoxic brain injury](#).

The case was placed in the early settlement program and settled for a total of \$6,000,000. \$3,000,000 was allocated for medical expenses under the Medical Indemnity fund.

Jury Verdicts Review Publications, Inc.

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35 NY. J.V.R.A. 5:2, 2018 WL 3077465 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Ninth Judicial District, Rockland County, New York.

TRELLES vs. TRIEGEL AND ST. LUKE'S CORNWALL HOSP. ET AL

10013/12

DATE OF VERDICT/SETTLEMENT: January, 2018

TOPIC:SETTLING NEONATOLOGIST AND HOSPITAL - Medical malpractice - Neonatologists' negligence - Hospital negligence - Alleged negligent delay in intubating and administering artificial Surfactant to prematurely born male twin B - Use of nasal CPAP for 15 hours allegedly results in pneumothorax and eventual intraventricular hemorrhage causing severe **brain** damage.

**SUMMARY:**

Result: DEFENDANTS' VERDICT

**EXPERT WITNESSES:**

Plaintiff's economist expert: [Michael Soudry](#) from New York, NY.

Plaintiff's life care planning expert: [Joseph Carfi](#), M.D. from New Hyde Park, NY.

Plaintiff's neonatologist expert: [Carolyn Crawford](#), M.D. from Sea Isle, NJ.

Plaintiff's pediatric neurologist expert: [Daniel Adler](#), M.D. from New York, NY.

Defendant's neonatologist expert: [Andrew Steele](#), M.D. from New Hyde Park, NY.

Defendant's pediatric neurologist expert: [Walter Molofsky](#), M.D. from New York, NY.

Defendant's pediatric radiologist expert: [Carrie Shapiro](#), M.D. from New York, NY.

**ATTORNEY:**

Defendant's: non-settling neonatologist: [Jonathan E. Symer](#) of Steinberg Symer & Platt, LLP in Poughkeepsie, NY.

Defendant's: hospital: [Kathryn C. Collins](#) of Feldman, Kleidman, Coffey, Sappe & Regenbaum, L.L.P. in Fishkill, NY.

JUDGE: [Paul Marx](#)

RANGE AMOUNT: \$0

STATE: New York

COUNTY: Rockland

**INJURIES:**

SETTLING NEONATOLOGIST AND HOSPITAL - Medical malpractice - Neonatologists' negligence - Hospital negligence - Alleged negligent delay in intubating and administering artificial Surfactant to prematurely born male twin B - Use of nasal CPAP for 15 hours allegedly results in pneumothorax and eventual intraventricular hemorrhage causing severe **brain** damage.

**FACTS:**

This case involved a premature twin delivery at about 31 week's gestation. Twin B, a male, developed [respiratory distress syndrome \(RDS\)](#) and was managed on nasal CPAP for approximately 15 hours with relative stability prior to being intubated and administered artificial Surfactant. The plaintiff contended that Twin B, who was at increased risk for [RDS](#) because the lungs of boys do not develop as rapidly as girls and because there is a greater chance for complications in the second twin born, should have been intubated and administered artificial Surfactant earlier than he was. The

neonatologists who staffed the NICU were employed by a PC that contracted with the hospital to staff the NICU and as such, the plaintiff asserted that the hospital was vicariously liable for the actions of the neonatologists.

The initial neonatologist placed the child on nasal CPAP immediately following delivery and shortly thereafter, signed the care of the child over to the second neonatologist who continued nasal CPAP until approximately 15 hours after birth when the infant was intubated and the medication [Survanta](#) (artificial Surfactant), a lipoprotein complex, was used to help oxygenate the lungs. Approximately 24 hours following intubation, the infant developed a [pneumothorax](#), pulmonary [interstitial emphysema](#) and eventually a grade 3 [intraventricular hemorrhage](#) which left the infant severely brain damaged.

The infant plaintiff was present at trial and it was claimed that he required care for all basic activities of daily living, including eventual institutionalization. The plaintiff also made a claim for lost earnings and contended that although the infant was severely brain damaged, he remained fairly healthy and as such would have an extended life expectancy. The initial neonatologist, who also provided the bulk of Twin B's care following the intubation up until the time of the infant's transfer to Westchester Medical Center on day three of life, settled years before trial for \$1,681,818.18 and the infant child was enrolled into the NYSMIF two years prior to trial.

The jury was not aware of the settlement or the child's enrollment into the NYSMIF. The hospital and non-settling neonatologist maintained that there are multiple ways of properly treating [RDS](#), one of which includes utilizing nasal CPAP until the infant steadily requires continued increased oxygen supplementation, and that once the infant's oxygen needs began to steadily increase, he was promptly intubated and artificial Surfactant was timely administered.

The jury found that the non-settling neonatologist and hospital were not negligent.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 35, Issue 5

34 NY. J.V.R.A. 10:4, 2017 WL 5593661 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, First Judicial District, New York County, New York.

MAGOMED ABDUSALAMOV vs. STATE OF NEW YORK

N/A

DATE OF VERDICT/SETTLEMENT: September 11, 2017

TOPIC: State Athletic Commission negligence - Boxing commission faulted for failing to put injured boxer into ambulance after he was severely injured in fight - Subdural hematoma - Permanent **brain injury**.

**SUMMARY:**

Result: \$22,000,000 SETTLEMENT

**ATTORNEY:**

Plaintiff's: **Paul Edelstein** of EFB Personal Injury Law in New York, NY.

Defendant's: Ross Hermann of Office of the Attorney General - State of New York in Albany, NY.

JUDGE: N/A

RANGE AMOUNT: \$5,000,000-999,999,999

STATE: New York

COUNTY: New York

**INJURIES:**

State Athletic Commission negligence - Boxing commission faulted for failing to put injured boxer into ambulance after he was severely injured in fight - Subdural hematoma - Permanent **brain injury**.

**FACTS:**

In this action, a professional boxer accused the State of New York of failing to engage an ambulance to treat his injuries, resulting in his **brain injury** being much worse. The matter was resolved with a settlement.

The plaintiff, Magomed A., is a professional heavyweight boxer from the Central Asian country of Dagestan. In November 2013, the plaintiff fought Mike P. at Madison Square Garden in New York City, New York. In the first round of that fight, the plaintiff was struck by P's forearm. Thereafter, the plaintiff told his corner man that he suspected a fracture. After the fight, the defendant state employees did not engage use of the ambulance to treat plaintiff and take him to a hospital. Instead, the plaintiff and his handlers took a taxi to St. Luke's Hospital, where he underwent emergency surgery. The plaintiff was found to have suffered a **traumatic brain injury, subdural hematoma**. He remains unable to walk or speak in complete sentences.

The plaintiff filed suit in the New York Supreme Court, New York County Division, against the defendant State of New York. The plaintiff asserted a negligence claim against the State of New York as the managing authority of the New York State Athletic Commission for boxing. The plaintiff faulted the inadequate post- fight protocols of the State Athletic Commission for the plaintiff's injuries. Specifically, the defendants were faulted for not engaging the ambulance, and instead leaving the plaintiff to seek medical attention at his own discretion. The plaintiff argued that if he'd been treated faster, his injury could have been lessened.

The matter was resolved with a settlement for \$22 million.

Jury Verdicts Review Publications, Inc.

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34 NY. J.V.R.A. 5:2, 2017 WL 2693792 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Second Judicial District, Kings County, New York.

MOORE vs. CAMPBELL

17053/10

DATE OF VERDICT/SETTLEMENT: May, 2017

TOPIC: Medical Malpractice - Failure to conduct adequate testing to ascertain baby's ability to retain fluids - Infant brought by mother to initial hospital with 15 hour history of vomiting and diarrhea, as well as fever - Improper administration of IV antibiotics too quickly causing cardiac arrest and **brain** damage.

**SUMMARY:**

Result: DEFENDANTS' VERDICT

**EXPERT WITNESSES:**

Plaintiff's pediatric infection disease expert: [El Saleeby](#), M.D. from Boston, MA.

Defendant's pediatric infection disease expert: [Harold Raucher](#), M.D. (for hospital) from New York.

Defendant's pediatrician expert: [George Roussis](#), M.D. (for pediatrician) from New York, NY.

**ATTORNEY:**

Defendant's: pediatrician: [Neil B. Ptashnik](#) of Ptashnik & Associates, LLC in New York, NY. Attorney for defendant hospital: [Steven D. Weiner](#) of Kaufman Borgeest & Ryan, LLP in Valhalla, NY.

JUDGE: [Kathy King](#)

RANGE AMOUNT: \$0

STATE: New York

COUNTY: Kings

**INJURIES:**

Medical Malpractice - Failure to conduct adequate testing to ascertain baby's ability to retain fluids - Infant brought by mother to initial hospital with 15 hour history of vomiting and diarrhea, as well as fever - Improper administration of IV antibiotics too quickly causing cardiac arrest and **brain** damage.

**FACTS:**

This action involved a five-week-old infant plaintiff who was brought to the initial hospital after an approximate 15 hour history of vomiting and diarrhea. The baby had a fever of 100.5 . The defendant pediatrician, who was employed by the defendants initial hospital diagnosed [gastroenteritis](#), advised the mother to continue Pedialyte and return the following day. The mother related that the baby appeared to be taking fluids adequately and otherwise appeared normal for two and a-half days until the symptoms returned. The mother then took the baby to the second hospital who administered an IV push of antibiotics. The baby suffered [cardiac arrest](#) and brain damage.

The plaintiff had initially contended that the defendant second hospital, who administered antibiotics as a prophylactic measure, administered the medication too quickly by using an IV push, causing the [cardiac arrest](#). The case against the second hospital settled prior to trial for \$1,500,000. The jury was aware that the second hospital had previously been a defendant but was not advised that it had settled.

The plaintiff maintained that the defendant pediatrician at the first hospital should have conducted testing to rule out a bacterial infection, and that the diagnosis of [gastroenteritis](#) that was probably viral in nature without such additional testing constituted a deviation. The plaintiff also contended that the defendant should have conducted a swallowing test to determine if the baby could, in fact, take fluids adequately.

The defendant pediatrician and initial hospital denied that this pediatrician had deviated. These defendants also stressed that the [cardiac arrest](#) occurred immediately upon the IV push administration of the antibiotics by the second hospital.

The jury found for the initial pediatrician and hospital, which was named on a respondeat superior theory.

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PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 34, Issue 5

35 NY. J.V.R.A. 3:C2, 2017 WL 9286812 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, First Judicial District, New York County, New York.

ABDUSALAMOV ET AL vs. STATE OF NEW YORK

126865

DATE OF VERDICT/SETTLEMENT: September 08, 2017

TOPIC: FAILURE TO PROPERLY ASSESS AND DETERMINE THAT PRIZE FIGHTER, WHO HAD SUFFERED FRACTURED ZYGOMA AND SEVERE LACERATIONS UNDER ONE EYE, SHOULD BE HELD UNDER OBSERVATION LONGER AT MADISON SQUARE GARDEN AND/OR TAKEN BY AMBULANCE TO HOSPITAL DUE TO SIGNS AND SYMPTOMS OF POSSIBLE SUBDURAL HEMATOMA - PLAINTIFF TOLD TO TAKE CAB TO HOSPITAL - SEVERE **BRAIN** DAMAGE - PROFOUND SPEECH AND COGNITIVE DEFICITS - CASE AGAINST THREE PRIVATE PHYSICIANS WHO EXAMINED PLAINTIFF AT GARDEN AFTER FIGHT REMAINS.

**SUMMARY:**

Result: \$22,000,000 RECOVERY VS DEFENDANT STATE

**EXPERT WITNESSES:**

Plaintiff's critical care expert: [Mark S. Silberman](#), M.D. from New York, NY.

Plaintiff's physiatrist expert: [Rodolfo D. Eichberg](#), M.D. from Tampa, FL.

**ATTORNEY:**

Plaintiff's: [Paul J. Edelstein](#), Glenn K. Faegenburg Arthur Blyakher and [Daniel A. Thomas](#) of The Edelsteins Faegenburg & Brown, LLP in New York, NY.

JUDGE: N/A

RANGE AMOUNT: \$5,000,000-999,999,999

STATE: New York

COUNTY: New York

**INJURIES:**

FAILURE TO PROPERLY ASSESS AND DETERMINE THAT PRIZE FIGHTER, WHO HAD SUFFERED FRACTURED ZYGOMA AND SEVERE LACERATIONS UNDER ONE EYE, SHOULD BE HELD UNDER OBSERVATION LONGER AT MADISON SQUARE GARDEN AND/OR TAKEN BY AMBULANCE TO HOSPITAL DUE TO SIGNS AND SYMPTOMS OF POSSIBLE SUBDURAL HEMATOMA - PLAINTIFF TOLD TO TAKE CAB TO HOSPITAL - SEVERE **BRAIN** DAMAGE - PROFOUND SPEECH AND COGNITIVE DEFICITS - CASE AGAINST THREE PRIVATE PHYSICIANS WHO EXAMINED PLAINTIFF AT GARDEN AFTER FIGHT REMAINS.

**FACTS:**

This case involved a prize fighter who had lost a heavy weight boxing match held at Madison Square Garden and who had suffered significant injuries in the fight including a [fractured zygoma](#), a severe laceration under one eye, and extensive facial bruising. The plaintiff contended that although he had signs and symptoms of a potential [subdural hematoma](#), including nausea and vomiting and unsteady gait, he was neither kept a sufficient time at the Garden for continued

observation nor taken to the hospital by ambulance. The plaintiff asserted that as a result, he suffered a [brain herniation](#) which has left him with severe brain damage manifesting in significant [cognitive deficits](#), the need for continuing help in the activities of daily living, and a profound speech impediment. The plaintiff is currently cared for at his home, but contended that ultimately, he will probably require institutionalization. The plaintiff named as a defendant the chief medical officer of the NYS Athletic Commission, who was present at the fight, but who did not personally examine the claimant, as well as a fight inspector who was also employed by the state. The plaintiff was also examined by three private physicians who contracted with the state and a Kings County Supreme Court action against these physicians, including an ophthalmologist, a family physician, and an osteopath, remains pending.

The evidence revealed that the last medical examination of the claimant before he left the premises was conducted approximately 15 minutes after the fight ended. The claimant maintained that the fighter should have either been sent to the hospital by ambulance, or be kept for continued observation for at least one hour before being told whether or not he could leave. The claimant contended that in addition to the signs and symptoms of a potential [brain injury](#), a urinalysis showed the presence of blood in his urine. The plaintiff maintained that this finding should have prompted additional medical attention, irrespective that it was not related to the [head trauma](#). The claimant asserted that although the defendant state's chief medical officer did not personally examine the fighter, this defendant had the responsibility to assess the condition of the fighter, and that if such an assessment was properly made, the plaintiff's severe [brain injury](#) would probably have been avoided.

The claimant also maintained that the fighter, who is foreign, had difficulties with English and that the defendant should have arranged for an interpreter to be present prior to the fight. The plaintiff asserted that the responsibility to deal with language barriers on the part of fighters rest with the defendant state Athletic Commission.

The defendant contended that the records of the private physicians who examined the plaintiff after the fight did not reflect signs or symptoms consistent with a potential [subdural hematoma](#), or even that hospitalization was necessary at that time. The plaintiff countered that a video of the fighter after the fight showed that the plaintiff was wobbly and stumbling as he was walking out of the MSG and waiting for a taxi, arguing that in view of this evidence of his obvious physical distress, the defendants' position should clearly be rejected.

The plaintiff asserted that his speech deficit is so profound that only people very close to him can effectively communicate with him. The claimant further contended that he has very little understanding of everyday occurrences. The claimant is currently residing at home and is cared for by his family; however, the plaintiff maintained that ultimately, he most likely will require institutionalization in the not too distant future. The plaintiff also contended that he is permanently unemployable as a result of his injuries. The plaintiff offered evidence of future lost wages which were based both upon the average earnings of an individual with the claimant's education, and that of a fight trainer, an occupation in which the claimant had previously expressed interest. The plaintiff introduced evidence showing that his economic losses could exceed \$30,000,000.

The court of claims found for the claimant and awarded him \$22,000,000.

Jury Verdicts Review Publications, Inc.

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34 NY. J.V.R.A. 5:C8, 2017 WL 2687610 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Tenth Judicial District, Nassau County, New York.

ZULUAGA vs. WINTHROP UNIVERSITY HOSPITAL ET AL

9398/2012

DATE OF VERDICT/SETTLEMENT: February 15, 2017

TOPIC: MEDICAL MALPRACTICE - HOSPITAL NEGLIGENCE - PATIENT ADMITTED TO TELEMETRY UNIT WITH A-FIB - CARDIOLOGIST NEGLIGENT IN FAILING TO TRANSFER PATIENT TO CCU DESPITE ENTRIES IN CHART REFLECTING DANGEROUS SIGNS - CARDIOLOGIST EXONERATED - NEGLIGENT FAILURE OF RESIDENT TO RESPOND WHEN NOTIFIED BY NURSE OF SECOND EPISODE OF VENTRICULAR TACCYCARDIA - CODE CALLED - SIGNIFICANT **BRAIN** DAMAGE - DEATH NINE MONTHS LATER FOLLOWING COMPLICATIONS FROM FEEDING TUBE BLOCKAGE.

**SUMMARY:**

Result: \$3,600,069 VERDICT

**EXPERT WITNESSES:**

Plaintiff's cardiologist expert: [Bruce Charash](#), M.D. from New York, NY.

Plaintiff's economist expert: [Debra Dwyer](#), Ph.D. from Centereach, NY.

Defendant's cardiac electrophysiologist expert: [Stevan Danik](#), M.D. (for hospital) from New York, NY.

Defendant's cardiologist expert: [Jerfome Koss](#), M.D. (for exonerated cardiologist) from New York, NY.

**ATTORNEY:**

Plaintiff's: [Richard Gurfein](#) of Gurfein Douglas, LLP in New York, NY.

JUDGE: [Arthur M. Diamond](#)

RANGE AMOUNT: \$2,000,000-4,999,999

STATE: New York

COUNTY: Nassau

**INJURIES:**

MEDICAL MALPRACTICE - HOSPITAL NEGLIGENCE - PATIENT ADMITTED TO TELEMETRY UNIT WITH A-FIB - CARDIOLOGIST NEGLIGENT IN FAILING TO TRANSFER PATIENT TO CCU DESPITE ENTRIES IN CHART REFLECTING DANGEROUS SIGNS - CARDIOLOGIST EXONERATED - NEGLIGENT FAILURE OF RESIDENT TO RESPOND WHEN NOTIFIED BY NURSE OF SECOND EPISODE OF VENTRICULAR TACCYCARDIA - CODE CALLED - SIGNIFICANT **BRAIN** DAMAGE - DEATH NINE MONTHS LATER FOLLOWING COMPLICATIONS FROM FEEDING TUBE BLOCKAGE.

**FACTS:**

This case involved a 60-year-old auto mechanic who had been admitted to the telemetry unit upon a recurrent episode of AFib on a Friday, in which the plaintiff contended that the patient was not transferred to the CCU for increased monitoring when the signs and symptoms, including an abnormal EKG reflected that the patient was at high risk for [cardiac arrest](#). The plaintiff also asserted that vital signs were not taken between 11:30 p.m. on Saturday and 5:50 a.m. on Sunday when a code was called and that the code continued for one hour and twenty minutes, during which time he was

shocked four times. The plaintiff maintained that although the defendants believed he was left in a [persistent vegetative state](#), he improved after the transfer to a rehabilitation facility following five and a-half months at the defendant's hospital. The plaintiff claimed that after less than two months at the rehabilitation facility, the patient reached the point in which he was able to lift himself in bed and engage in simple conversations. The plaintiff asserted that because the feeding tube installed at the defendant hospital became clogged, he required surgery at a non-party hospital. The patient suffered respiratory arrest the following day and died shortly thereafter.

The evidence disclosed that the patient drove himself from work on Friday afternoon July 23, 2010, with complaints of shortness of breath, chest pain and palpitations. The E.R. diagnosed AFib with a rapid heart rate of 174. He was started on beta blockers to reduce heart rate and anticoagulants to prevent clots and emboli. He was admitted to the hospital that night and properly placed on a telemetry floor. Medication was successful in reducing his heart rate. Overnight, early Saturday morning, telemetry strip showed 5 beats of V-tach ([Ventricular tachycardia](#)), nursing notes showed chest pain returned and the on-call Resident was notified. The Resident responded, examined the patient, ordered an EKG and prescribed medication for pain. The patient's symptoms at that time showed new findings of 5 beats of V-tach. The plaintiff further maintained that the return of the chest pain when heart rate had lowered to 108 was very troublesome. The plaintiff also contended that the QT interval on the EKG that was almost 100 points above the QT in the ER, and was above 500, reflecting very significant risk. There was no claim of negligence on Friday night/overnight on Saturday.

At 1:00 p.m. on Saturday, the attending cardiologist examined the patient, wrote a note, left orders and also did not transfer the patient. His plan was to cardiovert the patient on Monday. The plaintiff maintained that in view of the alarming signs and symptoms reflected in the chart, the defendant cardiologist should have ordered that the patient be transferred to the CCU. The plaintiff maintained that if the cardiologist had carefully read the chart, he would have transferred the patient. The cardiologist asserted that he did carefully read the chart and after examining the patient, made a valid medical judgment that his plan to keep the patient in the telemetry unit and cardiovert the patient.

The records showed that on Saturday night into early Sunday morning, there was another telemetry strip showing 5 beats of V-tach and Saturday night's resident was notified. The plaintiff maintained that the resident never responded. The plaintiff also pointed out that there was no mention of monitoring vital signs in the chart from 11:30 p.m. Saturday night until 5:50 a.m. Sunday morning when patient was found unresponsive at 5:50 a.m. Telemetry showed V-tach/AFib arrest. A code was called and the team assembled on the telemetry floor. The code lasted an hour and twenty minutes, during which time the patient was shocked on four separate occasions. The patient was left with severe brain damage. The plaintiff contended that had the patient been transferred to the CCU, the code would have been responded to in a timely manner and the brain damage averted.

The patient remained at the defendant hospital for five and a half months following the initial arrest until January 18, 2011. The evidence revealed that during this period, [anoxic encephalopathy](#) was diagnosed and the defendant declared him in a vegetative state and suggested that the family sign, a DNR. The son initially signed the document and then rescinded it.

The decedent left a wife and two adult children, one of whom had moved home while he went to school. The plaintiff claimed that the loss of guidance and advice was very significant. The decedent was earning approximately \$40,000 per year.

The jury found that the hospital was negligent on Sunday morning. They also found that the cardiologist was not negligent. They then awarded a total of \$3,600,069 for wrongful death, conscious pain and suffering, loss of services, medical expenses, funeral expenses and loss of pension benefits.

Jury Verdicts Review Publications, Inc.

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2016 WL 9734678 (N.Y.Sup.) (Verdict and Settlement Summary)

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WEST'S JURY VERDICTS - NEW YORK REPORTS

\$600K Settlement in Minor's Suit for **Traumatic** Amputation of Finger  
Supreme Court, Ninth Judicial District, Putnam County, New York.

G.D. v. Jefferson Valley Racquet Club

**Type of Case:**

Premises Liability • Sports/Amusement Facilities

Premises Liability • Negligent Repair/Maintenance

Negligent Hiring & Supervision • Negligent Hiring

Negligent Hiring & Supervision • Negligent Supervision

Construction Defects • Other

Products Liability • Furniture/Furnishings

Contracts • Warranty

**Specific Liability: Minor was at day care center at health club, and her hand was slammed in gate**

**General Injury:** **Traumatic** amputation of distal portion of left middle finger, post-**traumatic** stress disorder and peripheral vascular disease of hand; medical expenses

**Jurisdiction:**

State: New York

County: Putnam

Case Name: G.D., an infant under the age of 18 years by her natural parents and guardians Suzanne Dolan and Mark Dolan, and Suzanne Dolan and Mark Dolan individually v. Jefferson Valley Racquet Club Inc., Club Fit Management Inc., Club Fit, William A. Kelly & Company Inc., W.A. Kelly and Company Inc., Lawrence Metal Products Inc., Tensator Inc. and Lothrop Associates L.L.P.; Lawrence Metal Products Inc. and Tensator Inc. v. ESP Metal Crafts Inc.; William A. Kelly & Company Inc. v. ESP Metal Crafts Inc. and Lothrop Associates L.L.P.

**Docket/File Number:** 0000593/2014

**Trial Type: Settlement**

**Settlement: Plaintiffs, \$600,000**

**Range Amount:** \$500,000 - 999,999

Date of Incident: March 06, 2013

Date of Filing: March 25, 2014  
Settlement Date: December 23, 2016

**Judge:** Robert M. DiBella

**Attorneys:**

Plaintiffs: Stephen M. Smith, Yorktown Heights, NY; Gary A. Cusano, Law Office of Gary A. Cusano P.C., Yorktown Heights, NY

Defendant (Lothrop): Richard Metli, L'Abbate, Balkan, Colavita & Contini L.L.P., Garden City, NY

Defendants (Lawrence and Testator): David B. Manson, Goergen, Manson & McCarthy, Middletown, NY

Defendants (Kelly): Daniel J. Sweeney, The Law Office of Daniel J. Sweeney, White Plains, NY

Defendant (William A. Kelly & Co.): Linda F. Fedrizzi, Daniel J. Sweeney & Associates P.L.L.C., White Plains, NY

Defendants (Jefferson and Club Fit): Louis U. Gasparini, Lynch Schwab & Gasparini P.L.L.C., Brewster, NY

Third-party defendant (ESP): Gregory Saracino, Milber Makris Plousadis & Seiden L.L.P., White Plains, NY

**Breakdown of Award:**

**\$385,000.00 to purchase an annuity to fund future periodic payments to plaintiff G.D.**

**\$10,000.00 to plaintiffs Dolan for loss of services and/or medical expenses**

**\$205,000.00 to plaintiffs' attorney for attorney fees**

**Of the settlement amount, defendants Jefferson and Club Fit were to pay \$290,000.00, defendants Kelly were to pay \$25,000.00, defendants Lawrence and Tensator were to pay \$50,000.00, defendant Lothrop was to pay \$175,000.00, and third party defendant ESP was to pay \$60,000.00.**

**Summary of Facts:**

G.D., a minor, reportedly was at a day care center at a health club owned by Jefferson Valley Racquet Club Inc., Club Fit Management Inc., and Club Fit when a metal gate allegedly slammed shut on her left hand, resulting in the [traumatic amputation](#) of the distal portion of her left middle finger, [post-traumatic stress disorder](#) and [peripheral vascular disease](#) of her hand.

G.D.'s parents, Suzanne and Mark Dolan, said the club owners had hired Lothrop Associates L.L.P. to perform design work at the club, and Lothrop supervised the work of William A. Kelly & Company Inc. and W.A. Kelly and Company Inc., which had installed the gate. Lawrence Metal Products Inc. reportedly manufactured the gate.

G.D., Suzanne and Mark filed a lawsuit against the club owners, Lothrop, the Kelly entities, Lawrence and Tensator Inc., asserting a claim of premises liability for failing to properly maintain the gate, failing to warn, failing to inspect and allowing a dangerous condition to remain on the premises. The plaintiffs also asserted the club owners negligently supervised G.D. and negligently hired and supervised their employees and agents, and the Kelly entities negligently installed the gate.

In addition, the plaintiffs asserted claims of product liability, failure to warn, breach of warranty, and negligent design.

G.D. sought damages for medical expenses and pain and suffering. Suzanne and Mark sought damages for medical expenses and loss of services.

Lawrence and Tensator filed a third party complaint against ESP Metal Crafts Inc., asserting the gate had been purchased from ESP. William A. Kelly & Company also filed a third party complaint against ESP.

Lothrop denied the design of the gate was a substantial factor in causing the minor's injury. It claimed the misuse of the gate as a play-thing caused her injury.

A \$600,000 settlement was reached in favor of the plaintiffs, and the court approved the settlement.

JVR 1709270030

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34 NY. J.V.R.A. 11:25, 2017 WL 6502159 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Third Judicial District, Sullivan County, New York.

MOTTA vs. ELDRED CENTRAL SCHOOL DISTRICT ET AL

2013-3020

DATE OF VERDICT/SETTLEMENT: October 25, 2017

TOPIC: Negligent supervision - Bullying continues from 7th Grade to most of high school - Complex PTSD involving numerous on-going **traumatic** incidents.

**SUMMARY:**

Result: \$1,000,000 VERDICT

**EXPERT WITNESSES:**

Plaintiff's bullying expert: [Barbara Coloroso](#) from Greely, CO.

Plaintiff's forensic psychologist expert: [Marc S. Mednick](#), Ph.D. from Goshen, NY.

**ATTORNEY:**

Plaintiff's: [JenniElena Rubino](#) and Jean-Paul Le Du of The Rubino Law Firm, P.C. in Yonkers, NY.

JUDGE: Stephan Shick

RANGE AMOUNT: \$1,000,000-1,999,999

STATE: New York

COUNTY: Sullivan

**INJURIES:**

Negligent supervision - Bullying continues from 7th Grade to most of high school - Complex PTSD involving numerous on-going **traumatic** incidents.

**FACTS:**

In this case, the plaintiff contended that the defendant school district negligently failed to take appropriate steps to control the bullying of the infant plaintiff that started in Seventh Grade. The plaintiff had brought the action under both The Dignity for All Students Act (DASA) and a negligent supervision theory. The Court held that DASA did not create a private cause of action, but that the plaintiff could proceed under a negligent supervision theory.

The plaintiff claimed that the bullying started with inaccurate verbal insults that were aimed at the plaintiff's perceived sexual orientation and progressed to physical incidents, including an occasion when bullies urinated on the plaintiff's hat and incidents in which the bullies kicked around the plaintiff's backpack on two occasions, breaking the plaintiff's headphones in one incident and ruining his homework in another.

The plaintiff maintained that when the child fought back, the school officials suspended him and he was charged with assault. The plaintiff was sent to a juvenile psychiatric facility for a 30-day evaluation period and the parents were stripped of their parental rights for this 30-day period. The plaintiff presented a bullying expert who related that she was retained by the school district to give a presentation and workshop, and who testified that her suggestions were not followed.

The defendant contended that it acted properly and commenced a "Check-in" policy in which an official would regularly check with the plaintiff. The plaintiff claimed that this policy was ineffective, actually made the situation worse and that the plaintiff appeared as a "Snitch" to the bullies.

The plaintiff also maintained that the defendant school district acted inappropriately in conducting several mediation sessions. The plaintiff contended that mediation is not helpful in a situation involving individuals in unequal positions of power such as a student who is bullied and his tormenters. The plaintiff asserted that the numerous traumatic incidents caused complex PTSD and the plaintiff's psychologist offered a guarded prognosis. The plaintiff testified that when he leaves the safety of his home, he often suffers headaches and stomachaches. The plaintiff further maintained that seeing certain people or situations in public trigger episodes.

The jury found for the plaintiff and awarded \$1,000,000, including \$300,000 for past pain and suffering, \$640,000 for future pain and suffering and \$30,000 to each parent for the 30 days loss of parental rights while the plaintiff was in the juvenile psychiatric facility.

Jury Verdicts Review Publications, Inc.

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35 NY. J.V.R.A. 5:C3, 2017 WL 9614805 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Eleventh Judicial District, Queens County, New York.

DAYARAM vs. LANDI ET AL

13769/14

DATE OF VERDICT/SETTLEMENT: October, 2017

TOPIC: MOTOR VEHICLE NEGLIGENCE - PLAINTIFF LIMO DRIVER WHO LOST ENGINE POWER PULLS TO RIGHT SHOULDER OF ROADWAY - CITY EMPLOYEE ATTEMPTING TO JUMP START LIMO STRUCK BY DEFENDANT DRIVER - DEFENDANT'S VEHICLE'S "BLACK BOX" SHOWED THAT HE WAS TRAVELING AT 52 MPH DURING SLEETING CONDITIONS - PLAINTIFF PINNED BETWEEN LIMO AND INSPECTOR'S CAR - **TRAUMATIC** ABOVE-THE-KNEE LEG AMPUTATION AT SCENE AND ABOVE-THE-KNEE SURGICAL AMPUTATION OF OTHER LEG AT HOSPITAL.

**SUMMARY:**

Result: \$13,350,000 RECOVERY

**EXPERT WITNESSES:**

Plaintiff's accident reconstruction expert: [James W. Pugh](#), Ph.D. from Mineola, NY.

Plaintiff's economist expert: [Alan M. Leiken](#), Ph.D. from Stony Brook, NY.

Plaintiff's life care planning expert: [Richard J. Schuster](#), Ph.D. from New York, NY.

Plaintiff's physiatrist expert: [Jeffrey Perry](#), D.O. from New York, NY.

Plaintiff's psychologist expert: [Jeffrey B Rubin](#), Ph.D. from Bedford Hills, NY.

**ATTORNEY:**

Plaintiff's: [Mark E. Weinberger](#) of Law Offices of Mark E. Weinberger, PC in Rockville Centre, NY.

Plaintiff's: Conrad Jordan (trial counsel) to Jordan & LeVerrier, P.C. in East Hampton, NY.

JUDGE: N/A

RANGE AMOUNT: \$5,000,000-999,999,999

STATE: New York

COUNTY: Queens

**INJURIES:**

MOTOR VEHICLE NEGLIGENCE - PLAINTIFF LIMO DRIVER WHO LOST ENGINE POWER PULLS TO RIGHT SHOULDER OF ROADWAY - CITY EMPLOYEE ATTEMPTING TO JUMP START LIMO STRUCK BY DEFENDANT DRIVER - DEFENDANT'S VEHICLE'S "BLACK BOX" SHOWED THAT HE WAS TRAVELING AT 52 MPH DURING SLEETING CONDITIONS - PLAINTIFF PINNED BETWEEN LIMO AND INSPECTOR'S CAR - **TRAUMATIC** ABOVE-THE-KNEE LEG AMPUTATION AT SCENE AND ABOVE-THE-KNEE SURGICAL AMPUTATION OF OTHER LEG AT HOSPITAL.

**FACTS:**

In this motor vehicle negligence action, the male plaintiff limo driver, in his early 50s, contended that after he lost power on the subject roadway, which contained three travel lanes in addition to a breakdown lane/shoulder on the right, he pulled the limo onto the shoulder. The plaintiff maintained that when the co-defendant, a snow plow inspector in the

employ of the co-defendant City, who was out because of the expected use of plows in an anticipated snow storm, stopped his automobile to see if he could render assistance to the plaintiff. The plaintiff asserted that the pair decided to attempt to jump start the limo and the plaintiff related that the inspector's car was pulled opposite the plaintiff's limo. The plaintiff maintained that as they were in the process of preparing to jump start the limo, and while the plaintiff was standing between the vehicles, the defendant driver attempted to pass a slow moving vehicle in the right lane by traveling onto the shoulder, striking the limo and pinning the plaintiff between the limo and the inspector's car, causing severe crush injuries to the plaintiff's legs. The defendant driver, who was a union executive, denied that the account of the plaintiff and the city inspector were accurate.

This defendant contended that the inspector's car was perpendicular to the disabled limo and protruding into the right travel lane of the roadway. This defendant denied that he attempted to pass a vehicle on the right and asserted that he was confronted with the presence of the inspector's car and could not avoid the accident. The plaintiff countered that an eyewitness, who was listed on the police report, had observed that the inspector's car was facing the plaintiff's limo and that both vehicles were completely on the shoulder when the defendant struck the limo. The defendant's car was equipped with a "Black box" which showed that this driver was traveling at 52 mph at the time he struck the plaintiff's vehicle. The plaintiff contended that this rate of speed was highly improper in view of the sleeting weather conditions that were prevailing at the time.

The plaintiff contended that the incident caused both of his legs to be severely crushed and that he suffered a traumatic above-the-knee amputation of one leg at the scene. The plaintiff was rushed to the hospital and despite several surgical repair attempts, his other leg could not be saved and was surgically amputated above-the-knee. The plaintiff suffered significant complications, including infections, and has undergone 12 surgeries following the collision.

The plaintiff, who has been fitted with prostheses, maintained that he remains as active as is possible under the conditions. The plaintiff related that he has subsequently learned how to drive using hand controls. The evidence revealed that a lift has been placed in the plaintiff's home. The plaintiff would have presented a day-in-the-life video which showed the difficulties he encounters putting on and taking off his prosthetic legs, as well as difficulties with other, regular daily activities. The plaintiff was prepared to present economic damages, including future lost wages and a life care plan, which approximated \$1,300,000.

The case settled prior to trial for \$13,350,000, including \$13,000,000 from the striking vehicle, and \$350,000 from the co-defendant city. In addition, the approximate \$1,300,000 compensation lien was reduced to \$300,000.

Jury Verdicts Review Publications, Inc.

PUBLISHED IN: New York Jury Verdict Review & Analysis, Vol. 35, Issue 5

JVR No. 1704050010, 2016 WL 8671945 (N.Y.Sup.) (Verdict and Settlement Summary)

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Supreme Court, Tenth Judicial District, Suffolk County, New York.

J.M., PRO AMI, VASQUEZ v. FATTIBENE

0006217/2016

DATE OF INCIDENT: May 10, 2013

DATE OF TRIAL/SETTLEMENT: December 14, 2016

TOPIC:

LIABILITY:

General: **Head**-On Collision

Specific: Crossed Centerline

**SUMMARY**

**Outcome: Settlement**

**Total: \$100,000**

**Related Court Documents:**

Infant's compromise order: [2016 WL 8609595](#)

**EXPERT-WITNESSES:**

**ATTORNEY:**

Plaintiff:

[Patrick W. Cannon](#), Cannon & Acosta L.L.P., Huntington Station, NY

[Joan Lensky Robert](#), Rockville Centre, NY

JUDGE: [John H. Rouse](#)

RANGE AMOUNT: \$100,000 - 199,999

STATE: New York

COUNTY: Suffolk

**PRIMARY INJURY: **Brain** Damage**

Multiple Facial Fractures; Fibula/Tibia Fracture

**SUMMARY**

**PLAINTIFF:**

Sex: M

Age: Minor, 3

**DEFENDANT:**

Sex: M

Age: Adult

Organization Type: Fattibene

Defendant's Insurance: Esurance Insurance Company

**DAMAGES:**

Total Compensatory Award: \$100,000

Comparative Negligence Percentage: 0

**FACTS:**

J.M., a 3-year-old male, allegedly suffered [brain trauma](#), [facial bone fractures](#) and left tibia and [fibula fractures](#) when the vehicle in which he was a passenger reportedly was struck head-on by a vehicle operated by defendant Robert Fattibene. The plaintiff contended the defendant was negligent in crossing over two lanes of travel and was responsible for paying his medical bills. Damages were disputed before the parties agreed to the establishment of a special needs trust for the plaintiff valued at \$100,000. The defendant died in the crash.

Jury Verdict Research

COURT: Supreme

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JVR No. 1710310024, 2016 WL 10396236 (N.D.N.Y.) (Verdict and Settlement Summary)

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United States District Court, N.D. New York.

S.A.L., PRO AMI, JUBINVILLE v. J. PROCTOR; C. PROCTOR

8:16CV00304

DATE OF INCIDENT: March 28, 2013

DATE OF FILING: March 15, 2016

DATE OF TRIAL/SETTLEMENT: December 12, 2016

TOPIC:

LIABILITY:

General: **Head**-On Collision

Specific: Crossed Centerline

Secondary: Negligent Entrustment: Private Vehicle

**SUMMARY**

**Outcome: Settlement**

**Total: \$85,000**

**Related Court Documents:**

Order settling infant's claim: [2016 WL 10271935](#)

**EXPERT-WITNESSES:**

**ATTORNEY:**

Plaintiff:

[Todd J. Krouner](#), Law Office of Todd J. Krouner, Chappaqua, NY

Defendant:

Patrick D. Slade, Santacrose & Frary, Albany, NY

JUDGE: [David N. Hurd](#)

RANGE AMOUNT: \$50,000 - 99,999

STATE: New York

COUNTY: Not Applicable

**PRIMARY INJURY: Postconcussion Syndrome**

General Emotional Distress: Post-**traumatic** Stress Disorder; Concussion; Headaches; Unspecified/Unknown

**SUMMARY**

**PLAINTIFF:**

Sex: F

Age: Minor, 12

**DEFENDANT:**

Sex: F

Organization Type: Proctor

Sex: F

Organization Type: Proctor

**DAMAGES:**

Total Compensatory Award: \$85,000

Comparative Negligence Percentage: 0

**FACTS:**

S.A.L., a 12-year-old female, claimed she suffered a concussion leading to [post concussion syndrome](#) with frequent headaches, [post-traumatic stress disorder](#), and right shoulder injuries when she was a passenger in a vehicle traveling north on an interstate, and defendant Jenna Proctor, driving south on the interstate in a vehicle owned by defendant Colleen Proctor, crossed over the northbound lane, struck a guardrail, moved back into the northbound lane and struck her vehicle head-on, causing the vehicle to roll over. The plaintiff contended Jenna was negligent in driving into oncoming traffic, failing to drive in a safe and reasonable manner and failing to keep a proper lookout. The plaintiff claimed Colleen was vicariously liable for Jenna's negligence and negligently entrusted her vehicle to Jenna. The plaintiff also contended Jenna was reckless and/or grossly negligent. The defendants denied liability.

Jury Verdict Research

COURT: USDC

2016 WL 8453974 (E.D.N.Y.) (Verdict and Settlement Summary)

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WEST'S JURY VERDICTS - NEW YORK REPORTS

Defense Verdict in FELA Suit

United States District Court, E.D. New York.

Labrador v. Long Island R.R. Co.

**Type of Case:**

Railroad • FELA

Labor & Employment • Safety & Health

Labor & Employment • Work Place **Injury**

Premises Liability • Slip/Trip & Fall

Premises Liability • Trip Over Object

Premises Liability • Negligent Repair/Maintenance

**Specific Liability: Railroad crew dispatcher tripped and fell on boxes in aisle of railroad office**

**General Injury:** Injuries to head, **brain**, neck, back and right shoulder; medical expenses; lost earnings

**Jurisdiction:**

State: New York

County: Not Applicable

**Related Court Documents:**

Defendant's answer: [2014 WL 12579533](#)

Amended joint pretrial order: [2016 WL 6394683](#)

Verdict form: [2016 WL 6394138](#)

Case Name: John Labrador v. Long Island Rail Road Company

**Docket/File Number:** 2:14CV04377

**Trial Type:** Jury

**Verdict:** Defendant, \$0

**Range Amount:** \$0

Date of Incident: June 22, 2013  
Date of Filing: July 18, 2014  
**Verdict/Judgment Date:** September 13, 2016

**Judge:** Leonard D. Wexler

**Attorneys:**

Plaintiff: Michael D. Flynn, Flynn & Lauriello P.L.L.C., New York, NY; Valerie J. Lauriello, Flynn & Lauriello P.L.L.C., New York, NY

Defendant: William J. Blumenschein, Krez & Flores L.L.P., New York, NY

**Breakdown of Award:**

**\$0**

**Summary of Facts:**

John Labrador said he was employed as a crew dispatcher by Long Island Rail Road Company (LIRR) and while walking in an aisle of LIRR's crew management services office in Jamaica, N.Y., he tripped and fell on boxes in the aisle.

Labrador reportedly suffered injuries to his head, brain, neck, back and right shoulder.

Labrador filed a lawsuit against LIRR under the Federal Employers' Liability Act, asserting the defendant was negligent in allowing the office to become and remain in an unsafe condition due to the stacking and storing of boxes in the aisle which narrowed and obstructed the aisle, failing to provide sufficient room for the normal use of the aisle, and failing to keep the work area safe from tripping hazards.

The plaintiff sought damages for medical expenses, lost earnings, pain and mental anguish.

The defendant denied the allegations and contended the plaintiff was negligent and failed to mitigate his damages.

The case proceeded to trial, and a jury found in favor of the defendant.

JVR 1703060032



**The New York Times**<https://nyti.ms/2s2hiz3>

# A Football Coach's Struggle With C.T.E. — and a Guilty Conscience

Don Horton coached hundreds of college linemen after his playing days were over. At the end of his life, he asked: What was his responsibility to them?

By BILL PENNINGTON MAY 26, 2017

RALEIGH, N.C. — In the last years of his life, the longtime football coach for dominating college teams wrestled with impaired speech, forgetfulness, lapses in concentration. And with his conscience.

His body was betraying him, and now, possibly, so was the sport he loved.

A few years earlier, the coach, Don Horton, had learned that he had Parkinson's disease, but these new, intensifying infirmities were more commonly linked to chronic traumatic encephalopathy, or C.T.E., a degenerative brain disease caused by repeated hits to the head and linked to football and other contact sports.

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Was his deteriorating health, Horton wondered, a consequence of his many years as a football lineman? Even worse, he worried, was he responsible for exposing hundreds of players to the kind of head trauma now impairing his life? After all, as a prominent assistant coach at Boston College and North Carolina State for nearly 20 years, he had recruited and encouraged scores of athletes to play major college football.

In the still of night at home, Horton asked himself what he should say if a parent of a former recruit called to say that a son was suffering from C.T.E.-like symptoms.

“And I would tell him that he could say: ‘I know how it feels,’” his wife, Maura Horton, responded. “And Don didn’t necessarily like that answer. But that’s the truth.”

There was only one way to be sure if he had C.T.E. His brain would have to be examined post-mortem, the only way to confirm the disease since there is no reliable test for the living. At first Horton balked, but as his cognitive difficulties intensified, he relented and even insisted that the findings of his brain examination be made public.

Horton died almost one year ago, on May 28. He was 58. Multiple news reports celebrated his accomplishments, and hundreds of former players and colleagues attended his funeral. Quietly, researchers at Boston University’s C.T.E. Center received his brain; the results would not be revealed for nearly 10 months.

## A Life in the Game

In 1997, Horton got the career breakthrough he had been hoping for when he was hired at Boston College, where he earned a reputation as one of college football’s best offensive line coaches.

He had played for Wittenberg University, a Division III power in Ohio, but was drawn to coaching and had spent 15 years traversing the country, landing jobs at Ohio State, New Mexico State, Virginia, Ohio University, Wittenberg, Capital University in central Ohio and Southern Illinois. He had married Maura Sweeney in

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1993, and she gave up a sales job for the rolling stone existence of a football coach's wife.

At Boston College, Horton thrived. Behind dominating offensive line play — Horton coached nearly 20 players who made it to the N.F.L. — the team won seven successive postseason bowl games. He worked for Coach Tom O'Brien, whom Horton had known since his youth.

Horton was known as a gifted recruiter — handwritten notes were a specialty — and for the unusually strong bond he developed with his players, especially off the field.

"He coached me for one year, and yet I had a friend and mentor for life," said Scott Dragos, a Boston College tight end who went on to play for the Chicago Bears. "Players just gravitated to him regardless of position. He treated the walk-on and the star exactly the same and talked to everyone about life, not just football."

Josh Beekman, a guard who also played in the N.F.L., said that at Thanksgiving and Easter, when many players could not afford trips home, several would go to the Hortons' home for meals.

Sometimes a player's visit to the Hortons lasted even longer. When one Boston College player was suspended from the team and expelled from his dormitory, he lived with the Hortons for three months.

"Don called me and said: 'When I recruited this kid I told his mother that I'd take care of him,'" Maura said.

The player was eventually reinstated to the team and graduated from Boston College.

O'Brien and most of his staff left Boston College for North Carolina State at the end of 2006. Months earlier, Horton, who was 6 feet 4 inches and maintained a demanding fitness regimen, noticed he was having trouble lifting weights with his left arm. He was 48, and thought it was a pinched nerve. Specialists told him that he had Parkinson's disease.

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Horton's doctors said he could work for at least 10 more years and maybe live to be 80, Maura Horton said.

"They kept saying that this is not a death sentence," she said.

The Hortons settled in North Carolina, but over time Horton's problems grew. The course of a progressive disease like Parkinson's is not predictable, but Horton was experiencing myriad symptoms, coming at a rapid pace, making his wife question if he had something more.

He had sleep disturbances, hallucinations, memory problems, rigidity, paranoia and eventually coordination issues that led to dangerous falls and losses of consciousness.

Most striking, Maura Horton noticed behavioral changes.

"It wasn't like he was angry and hitting somebody, but he was short, which Don Horton never was," she said tearfully, seated in the living room of her North Carolina home. "I hate saying that, because I feel like I'm betraying him. But he had changed. He was totally withdrawn and not engaging. It was not the man I'd known all these years.

"So, to me, things were just not adding up."

She began researching Horton's symptoms and discovered a deluge of stories about C.T.E.

In 2009, seven years before Horton died, she called Chris Nowinski, a co-founder and the chief executive of the Concussion Legacy Foundation, and told him that she thought her husband had C.T.E. She also raised her suspicions with Horton's doctors, but they said that, even if true, it would not change the course of his treatment.

Horton continued his duties at North Carolina State.

"He never missed a day of work and still produced great offensive linemen," said

Jason Swepson, an assistant coach at North Carolina State at the time. "You could

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see him struggling sometimes, but he never opened up about it because, I think, he didn't want to feel like he was letting the group down.”

At home, however, Horton's illness was leading to a variety of changes, physically and philosophically. His daughters, Libby, 14, and Hadley, 9, had begun playing soccer, but Horton pointedly refused to allow them to head the ball in games or in practices, aware that some studies had linked heading to brain injury.

“Don told them, ‘If I ever see you head the ball, I'll run onto the field and yank you off myself,’” Maura said.

Although Horton kept his misgivings about football's potential consequences within his household, he talked about it regularly.

“Don would ask, ‘Are we just carrying this cycle on?’” Maura Horton said. “That was a question I couldn't answer. But it's definitely the right question to ask.”

At first, he scoffed when his wife suggested that he donate his brain for C.T.E. testing, saying “I'm going to donate my brain just to prove you wrong,” Maura Horton said.

## Affliction, and Opportunity

Over time, however, as more neurological functions began to fail, Horton, in quiet moments at home, accepted that he could have C.T.E. and that it might even present an opportunity.

Much is unknown about the disease, including why, for instance, some players get it and some don't. Nearly 100 former N.F.L. players have been found to have the disease, including Hall of Famers like Ken Stabler and Junior Seau, but research on college players who did not play professionally is not extensive.

By donating his brain, Horton believed he could aid the science and, ultimately, perhaps help people evaluate whether to play, or continue playing, the game.

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“He wanted to make a difference if he could,” said Maura Horton, 47. “Don would never tell someone not to play the game, because he loved football and wouldn’t betray it. But he wanted them to see a full picture to make a full decision.”

She added: “Don said, ‘If they would be more reflective and be more upfront about things that were happening to them, they might get out of the game earlier if they needed to. Kids try to hide so much about what’s really happening.’”

By 2013, Horton had left North Carolina State, but he felt the pull of the game. He became an assistant coach at a high school a few miles from his home in Raleigh. Despite his inner conflict, Maura Horton figured, the game and coaching were too ingrained for him to turn away. He did preach lessening contact at practices.

“Don never perceived the benefit of lining up and just knocking into each other, especially for a lineman who gets hit on every play,” Maura said.

After two seasons at the high school, however, his unstable mobility forced him to leave the position. He stopped driving after a minor auto accident.

Horton still worked out for hours at the gym, believing that exercise would combat his infirmities, but neurological irregularities were sabotaging his body, including his blood pressure. Maura would get a call from the gym because Don had passed out.

On Sunday, May 15, 2016, Horton fell again, opening a gash on his head that required stitches. An ambulance took him to a hospital, and then he entered hospice care. As his family left the facility that night, he turned to say: “Bring home a win.”

Said Maura: “I think he thought we were going to a soccer game or something.”

By the next morning, Horton was no longer speaking. He died two weeks later.

Maura signed the paperwork to have his brain tested and told almost no one about it.

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In March, representatives from the Boston University C.T.E. Center and the Concussion Legacy Foundation informed Maura Horton that the examination of her husband's brain had revealed the presence of C.T.E.

Doctors grade the severity of the disease on a scale from 0 to 4, with 4 being the highest. Horton's C.T.E. was at stage 3 or 4, according to Dr. Ann McKee, chief of neuropathology at the V.A. Boston Healthcare System and a professor of neurology and pathology at the Boston University School of Medicine.

Dr. McKee, who conducted the examination, also noted that Horton had a "pretty severe" case of Parkinson's disease, adding that C.T.E. can accelerate the progression of Parkinson's.

"It is likely that he had C.T.E. originally and that it may have contributed to the early onset of Parkinson's," Dr. McKee said.

Maura Horton was not surprised by the diagnosis, and neither was she startled by the overarching question posed afterward by her daughters. They asked: What does it mean?

In the interview, Maura Horton explained the many ways she has interpreted the C.T.E. finding for her daughters, but most often she came back to one point.

While N.F.L. players have become the face of C.T.E. in football, she said, it is just as serious a threat to lesser known ex-players like Horton.

"People read the C.T.E. stories on the N.F.L. level because it's been so highly publicized, but I don't think people see it as something the average person gets," Maura Horton said. "But there are more people who are going to be affected who played in the N.C.A.A. than played in the N.F.L. That's what I told our girls: It's going to be average guys like your dad."

Don Horton never discussed how many concussions he had as a player.

"He would say: 'We didn't call them concussions. We called them getting your bell rung,'" Maura Horton said. "And I'd ask him how often that happened, and he said: 'Probably like 15 times. We just played through them.'"

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“But as I’ve told our kids, the number doesn’t matter. It was obviously too many, because he’s no longer with us.”

Numerous former players and colleagues said Horton had not raised the issue of C.T.E. with them. At the same time, they were not surprised he was worried for them.

“When I heard about his C.T.E. diagnosis, my first thought was that Coach Horton was probably more concerned about us and feeling guilty about pushing guys into the game,” Scott Dragos said. “I figured he’d be thinking of others first.”

The Hortons are still big fans of college football and watch the sport almost every Saturday in the fall. At the end of games, Maura Horton gathers her daughters to watch postgame interviews with the coaches.

“I still believe the lessons learned in football are really good,” she said, mentioning things like teamwork, work ethic and learning how to win and lose. “And if it’s something their dad would have said, I want them to hear it. The message is still right even if their dad isn’t there to deliver it.”

At the same time, she wants more former football players, and other athletes, to donate their brains for research.

“Clearly, we don’t know enough about C.T.E., and we need more brains to study,” she said. “We need to continue to do the research to make the game as safe as it can be.”

In the hours after Don Horton died, doctors informed Maura that because Don was only 58, an autopsy would be performed.

When Maura Horton received her husband’s death certificate last year, her eyes were drawn immediately to the cause of death: blunt force trauma to the head.

She was upset because Parkinson’s, which she believed had caused the fall that preceded his death, was not listed on the death certificate.

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“Then one night I thought: Maybe that’s poetic justice,” Maura Horton said this month at home, where pictures and reminders of Don are in nearly every room.

“Nobody said when the blunt force trauma happened,” she added. “Maybe that’s what this was all about.”

A version of this article appears in print on May 28, 2017, on Page SP1 of the New York edition with the headline: A Battle With C.T.E., And His Conscience.

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# What Happened Within This Player's Skull

By SAM BORDEN, MIKA GRÖNDAHL and JOE WARD JAN. 9, 2017



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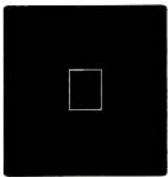
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When player No. 81 took this blow to his head several years ago, it was just one of many concussions that have occurred throughout college football and the N.F.L. But what made this one different was that this player was wearing a mouth guard with motion sensors. The information from those sensors has given researchers a more detailed and precise window into what was happening within the player's brain in the milliseconds after the hit.

## Here is what happened to his brain.



One common belief has been that just after a person's head (or helmet) makes contact with something – an airbag, a wall, another person – the brain within bounces around in the skull like an egg yolk in a shell, leaving bruises on the brain's outer surface, or gray matter. Now, though, many scientists and medical experts believe that this understanding is incomplete. Yes, there is some movement in the skull, but the real damage from concussions, they say, actually occurs deeper in the brain – in the so-called white matter – as a result of fibers pulling and twisting after impact. To stick with the food analogy, think Jell-O, not an egg. You know what happens when you take a plate of Jell-O and give it a hard shake? The stretches and contortions approximate what is happening to all the wiring throughout the brain.



To better track the brain's reaction to these hits, scientists in several labs have been working on a variety of mechanisms, some of which, like the one used during the impact shown above, are moving away from ones connected directly to a football helmet because the helmet can move independently of the skull. "The forces you're measuring with those are not really exactly what the brain is seeing," said Robert Cantu, clinical professor of neurosurgery at the Boston University School of Medicine.

The mouth guard that was used was developed by the bioengineer David Camarillo and his team at the [Cam Lab](#) at Stanford. Camarillo and others have speculated that the most damaging blows are those that cause the head to snap quickly from ear to ear, like the one shown above, or those that cause a violent rotation or twisting of the head through a glancing blow. "The brain's wiring, essentially, is all running from left to right, not front to back," Camarillo said, referring to the primary wiring that connects the brain's hemispheres. "So the direction you are struck can have a very different effect within the brain. In football, the presence of the face mask can make that sort of twisting even more extreme."

These revelations are a powerful indication that football helmets as they are now designed do not protect players from concussions and long-term brain disease like chronic traumatic encephalopathy, or C.T.E. But Camarillo and others are hopeful that as more data becomes available and as more is learned about the brain's inner turmoil during hits to the head, helmet design will improve.



Linemen sustain multitudes of hits to the head during games and practices.

Image Target: The New York Times

But scientists also commonly believe that this kind of brain

disease is caused not only by these severe concussive hits, but also by the accumulation of more minor blows. Consider the image shown above: It is the sort of line-of-scrimmage battle that happens on almost every play in football and does not seem nearly as bad as the concussive hit sustained by the receiver that we showed you earlier. But data from a single game showed that one college offensive lineman took 62 of these smaller blows to the head.

### One Game, 62 Hits to the Head.

G-forces of 10 hits (each line represents one hit)



In this chart, we show the G-force data from just 10 of the 62 hits this offensive lineman accrued in a single game. The average G-force, 25.8, is roughly equivalent to what we would see if the offensive lineman crashed his car into a wall going about 30 m.p.h.

And remember: that was 62 times in a single game. Hits of this magnitude can happen hundreds, if not thousands, of times to college and N.F.L. players during practices and games throughout their careers. The design of helmets — and even the safety design of automobiles — still has a long way to go to protect people from brain disease incurred from severe and not-so-severe hits to the head.

Sources: [camlab.stanford.edu](http://camlab.stanford.edu); David Camarillo, Fidel Hernandez, Kaveh Laksari and Lyndia Wu/Stanford University; Svein Kleiven (brain simulation model); Ann C McKee, MD, VA Boston/Boston University School of Medicine (post-mortem brain images); Rich Able/X2 Inc., Christoph Mack/X2 Inc.

(mouth guard used by player); and Anthony Lovat/OPRO Inc. (mouth guard in photograph).

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# Diffusion Tensor Imaging in Mild Traumatic Brain Injury Litigation

Hal S. Wortzel, MD, Marilyn F. Kraus, MD, Christopher M. Filley, MD,  
C. Alan Anderson, MD, and David B. Arciniegas, MD

A growing body of literature addresses the application of diffusion tensor imaging (DTI) to traumatic brain injury (TBI). Most TBIs are of mild severity, and their diagnosis and prognosis are often challenging. These challenges may be exacerbated in medicolegal contexts, where plaintiffs seek to present objective evidence that supports a clinical diagnosis of mild (m)TBI. Because DTI permits quantification of white matter integrity and because TBI frequently involves white matter injury, DTI represents a conceptually appealing method of demonstrating white matter pathology attributable to mTBI. However, alterations in white matter integrity are not specific to TBI, and their presence does not necessarily confirm a diagnosis of mTBI. Guided by rules of evidence shaped by *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, we reviewed and analyzed the literature describing DTI findings in mTBI and related neuropsychiatric disorders. Based on this review, we suggest that expert testimony regarding DTI findings will seldom be appropriate in legal proceedings focused on mTBI.

J Am Acad Psychiatry Law 39:511–23, 2011

Demonstrating structural and functional brain abnormalities among persistently symptomatic survivors of mild traumatic brain injury (mTBI) remains a challenge in clinical medicine. Physicians, patients, plaintiffs, and attorneys are interested in identifying methods, including technology-based diagnostic tests, that offer unequivocal evidence of mTBI. In this context, neuroimaging modalities such as cerebral single-photon emission computed tomography (SPECT) have been and continue to be entered as objective evidence of mTBI in civil litigation. In a

relatively recent publication,<sup>1</sup> the Behavioral Neurology and Neuropsychiatry faculty of the University of Colorado School of Medicine performed a *Daubert* criteria-guided analysis of the literature pertaining to the application of cerebral SPECT to mTBI. Based on that analysis, we discuss the challenges and potential pitfalls surrounding the introduction of this specific form of neuroscientific evidence into mTBI litigation. Our ongoing experience with medicolegal applications of cerebral SPECT imaging as evidence of mTBI reveals that such practices frequently fail to comport with the *Daubert* analysis and recommendations offered.

Equally concerning is the continued application and commercialization of cerebral SPECT imaging for clinical purposes for which it lacks a sufficient evidence basis. The potential perils of such inappropriate deployment are well articulated in a recent exchange of letters<sup>2,3</sup> featured in the *American Journal of Psychiatry*. Adinoff and Devous<sup>2</sup> make the compelling argument that early misapplications of neuroimaging, if left unchallenged, may poison the waters such that when the technology becomes appropriate for meaningful clinical application its history of misapplication creates an untenable barrier to its acceptance in clinical and medicolegal settings:

Unfortunately, if previously led astray by unsupported claims, patients and their doctors may be less inclined to

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utilize scientifically proven approaches once these are shown in the peer-reviewed literature to be effective. It is therefore incumbent on all of us to monitor and regulate our field. We encourage physicians to remain vigilant of unproven approaches practiced by our peers and to immediately report these trespasses to their state medical boards [Ref. 2, p 598].

Litigation, which entails an adversarial environment and is driven largely by the question of compensation can lead to transgressions that involve the misinterpretation and misuse of imaging studies. The charge issued by Adinoff and Devous<sup>2</sup> to preserve the scientific merit of emerging technologies thus appropriately falls to the forensic psychiatrist as well.

Subsequent to our analysis of the forensic applications of SPECT in mTBI litigation, newer neuroimaging techniques have been applied in the search for more objective evidence of neuropathology in mTBI. Among the most often discussed of these currently is diffusion tensor imaging (DTI). The application of DTI to mTBI litigation is proceeding despite a paucity of critical analyses of the available data on which its use in this context is predicated. For instance, a publication by Lipton *et al.*<sup>4</sup> is misrepresented in a report indicating that DTI "showed the presence of major areas of structural damage" (Ref. 5) and arguing that DTI can help "identify those patients who should receive rehabilitation earlier when it is more useful to the patient."<sup>5</sup> The incorrect implication of such a statement is that group-level DTI findings are presently useful at the single-patient level. Statements of this kind, as well as personal in-court experience by some of the present authors, indicate that attorneys are aware of this neuroimaging technique and are prepared to use it in mTBI-related civil litigation in a manner lacking scientific precision.

At the time of this writing, a rigorous analysis of the peer-reviewed literature surrounding DTI as applied to mTBI or its application to single patients for clinical or forensic purposes has not been published. The challenges surrounding the diagnosis of mTBI, particularly in the context of litigation, and the need for such a review are articulated in an analysis of SPECT previously offered.<sup>1</sup> In the service of providing forensic psychiatrists, a review of the points relevant to the forensic application of DTI to mTBI and related litigation, the current paper aims to provide a brief overview of DTI and its application to various neuropsychiatric conditions; a review and summary of the literature describing DTI findings in mTBI; an

analysis of that literature guided by criteria established by *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579<sup>6</sup>; and preliminary recommendations regarding the contexts and manner in which DTI might be incorporated appropriately into legal proceedings related to mTBI.

The overall goal of the following analysis is to evaluate the science of DTI as applied to mTBI and to determine what kinds of evidence are reasonably offered based on that science. As clinician-scientists, our approach is necessarily critical of the methods and interpretations of this literature and cautious about the implications of findings reported therein. We attempt to defend the science of DTI and its application to the study of mTBI against premature medicolegal application or frank misapplication and thereby preserve the scientific integrity and promise of this neuroimaging technique. DTI represents an ever-evolving research technology with powerful research potential that will hopefully lead ultimately to practical clinical applications.

### Overview of Diffusion Tensor Imaging

DTI is a relatively new magnetic resonance imaging (MRI)-based data-analysis technique based on the somewhat older and clinically well established technique of diffusion-weighted imaging (DWI). Diffusion of water molecules along a magnetic field gradient reduces the magnetic resonance signal associated with those water molecules. When there is relatively little water diffusion (referred to as 'restricted' diffusion), there is little signal loss from these water molecules along the magnetic field gradient. The resulting display of this signal is intense (i.e., bright), thereby allowing DWI to serve as a marker of disrupted water diffusion in the brain, whether that disruption is due to biomechanical trauma, ischemia, hypoxia-ischemia, or some other cause. DTI is a more refined adaptation of this data analytic technique that allows for the determination of the directionality as well as the magnitude of water diffusion in the brain and more specifically within and between different brain tissue types.<sup>7</sup> The degree of restriction of diffusion (or, conversely, the freedom of water movement) is different along (i.e., parallel to) axons from the way it is across axons.<sup>8</sup> Water molecules will distribute themselves randomly and in all directions when movement is unimpeded, a phenomenon known as isotropic diffusion. However, in constrained environments, diffusion will predomi-



## DTI Findings in Neurologic and Neuropsychiatric Disorders

White *et al.*<sup>18</sup> performed a review of the literature on DTI used to study psychiatric disorders, including schizophrenia, depressive disorder, anxiety disorders, obsessive-compulsive disorder, attention deficit disorder, autism, and personality disorders. Nearly 100 publications were identified. Results indicated extensive heterogeneity and substantial overlap among these conditions. Positive findings tend to predominate in the cingulum bundle (CB), corpus callosum (CC), and frontal and temporal white matter, regions in which abnormalities are also identified by DTI among groups of subjects with mTBI (review to follow). The authors noted that differences in methodologies, including scanner sequences and imaging processing algorithms, complicate the interpretation of results and that the lack of studies comparing different clinical populations precludes knowledge regarding the specificity of such findings.<sup>18</sup> A growing body of literature reflects the breadth of conditions that might exert an impact on white matter integrity and highlights persisting uncertainty regarding the meaning and specificity of DTI findings in these and other conditions.

Paul *et al.*<sup>19</sup> used DTI to compare healthy cigarette smokers with nonsmokers, and reported significantly increased FA within the CC of smokers, results generally at odds with findings of reduced FA with other substances of abuse.<sup>19–22</sup> Macey *et al.*<sup>23</sup> compared subjects with obstructive sleep apnea with healthy controls and reported multiple regions of reduced FA, including the CC, CB, and internal capsule (IC), among others. There are even studies indicating that early life stress<sup>24</sup> and/or parental verbal abuse<sup>25</sup> may result in differences in white matter integrity as measured by DTI. In short, investigation of white matter across a broad spectrum of neuropsychiatric conditions using DTI suggests that nonspecific alterations of white matter integrity are the rule and that the locations of these alterations are common to multiple conditions. This observation portends problems for the use of DTI findings for diagnostic purposes, since any such findings will entail a broad differential diagnosis of common neuropsychiatric conditions and especially for diagnostic purposes at the single-subject level.

## DTI in the Mild TBI Literature: Review and Commentary

### *Challenges to the Interpretation and Generalization of Findings From Existing Studies*

A PubMed/MEDLINE search, anchored to the terms diffusion tensor imaging, mild traumatic brain injury, and variations on this theme (e.g., mTBI and DTI), was performed. The search yielded 30 results; only those studies reporting findings specifically relating to mTBI were included for further analysis. An overview of the remaining 24 studies is offered in Table 1. As the table indicates, the methodological variation among these studies is extensive, making comparisons between them challenging, at best. With respect to the population under study, the definition of mTBI employed in these studies is highly variable: some studies define mTBI according to the American Congress of Rehabilitation Medicine (ACRM) definition<sup>48</sup>; others limit mTBI to the mildest form based on a Glasgow Coma Scale<sup>49</sup> score of 15, whereas others permit the entire range of mTBI based on this scale (GCS, 13–15); and others employ criteria that depart from these standard definitions of mTBI. Even where standard definitions of mTBI are employed, it is not entirely clear that mTBI as defined by the ACRM is equivalent to that captured by GCS 15, and there are differences in initial injury severity and outcome between mTBI subjects whose GCS scores are 13 to 14 and those with GCS scores of 15.<sup>50,51</sup> Between-subject and -group differences within and across these studies necessitate caution when describing findings from any of them as characteristic of persons with mTBI.

As highlighted in Table 1, there also is substantial variability in the times after injury at which these studies were performed, ranging from the day of injury to many years later. As noted earlier, traumatic axonal injury, the neuropathologic consequence of TBI that DTI purportedly indexes, is a progressive event that evolves over the first several days to weeks after TBI.<sup>14</sup> Since the DTI studies performed in this population are evaluating white matter changes at different stages of a dynamic neuropathologic process, the heterogeneity of findings between studies is not unexpected. That heterogeneity, driven in part by discrepancies in the time postinjury at which studies are conducted, precludes generalization of findings from any one of them to the entire population of persons with mTBI as a whole.

Table 1 DTI and mTBI

Study	Participants	mTBI Criteria and/or Characteristics	DTI Timing Average (Range)	Brain Regions	Analytic Approach
<b>2010</b>					
Little et al. <sup>26</sup>	12 mTBI, 12 controls	ACRM mTBI criteria	>12 months	VA thalamic nucleus	ROI analysis: FA
Geary et al. <sup>27</sup>	40 mTBI, 35 controls	ACRM mTBI criteria	5.29 years	SLF, SS, UF	ROI analysis: FA
Levin et al. <sup>28</sup>	32 mTBI, 15 controls (8 healthy, 7 extracranial injury)	OEF/OIF veterans with blast injury, 32 mild plus 5 moderate TBIs, essentially ACRM criteria	871.5 days	No group differences in FA or ADC	Tractography, ROI, and voxel-based analysis: FA, ADC
Mayer et al. <sup>29</sup>	22 mTBI, 21 controls	ACRM mTBI criteria	12.5 days (2–20)	CC, CR, UF	ROI analysis: FA, AD, RD
<b>2009</b>					
Chu et al. <sup>30</sup>	10 mTBI, 10 controls	Initial GCS 15, negative CT, otherwise not reported	2.7 days (1–6)	Left thalamus, scattered white matter	Whole-brain voxel-wise analysis: ADC, FA, AD
Wu et al. <sup>31</sup>	12 mTBI, 11 controls	GCS of 15 in ED and +LOC (<10 min)	2.92 days (1–6)	CB	ROI analysis: FA, ADC
Lipton et al. <sup>4</sup>	20 mTBI, 20 controls	GCS $\leq$ 13, LOC < 20 min, PTA < 24 hr	(2–14 days)	Frontal white matter (DLPFC)	Whole-brain voxel-wise analysis: FA, MD
Kumar et al. <sup>32</sup>	26 mTBI, 33 controls	GCS 13–15, all + LOC (<20 min), all + CT	8.9 days (5–14)	CC	ROI analysis: FA, MD, AD, RD
Huang et al. <sup>33</sup>	10 mTBI, 14 controls	LOC < 15 min, GCS 13–15, PTA < 24 hr, persistent PCS	(1–46 months)	ILF, SLF, temporal, parietal, occipital, frontal	Whole-brain voxel-wise analysis: FA
Lo et al. <sup>34</sup>	10 mTBI, 10 controls	GCS $\geq$ 13, persistent cognitive impairment	(>2 yrs)	CC, IC	ROI analysis: FA, ADC
<b>2008</b>					
Lipton et al. <sup>35</sup>	17 mTBI, 10 controls	GCS $\geq$ 13, LOC < 20 min, PTA < 24 hr, persistent cognitive impairment	(8 months to 3 years)	CC, subcortical white matter, IC	Whole-brain voxel-wise analysis: FA, MD
Niogi et al. <sup>36</sup>	43 mTBI, 23 controls	GCS $\geq$ 13, +PTA	16.9 months (1–53 months)	Corona radiata, UF	ROI analysis: FA
Rutgers et al. <sup>37</sup>	24 mild TBI, 10 controls	GCS $\geq$ 13	2.8 months (0.4–26.2)	CC	ROI analysis: FA, ADC
Wilde et al. <sup>38</sup>	10 mTBI, 10 controls	GCS of 15 in ED and +LOC (<10 min)	2.7 days (1–6)	CC	Whole CC analysis: FA, ADC, RD
Niogi et al. <sup>39</sup>	34 mTBI, 26 controls	GCS 13–15, +LOC, +PTA, $\geq$ 1 post concussive symptom	(1–65 months)	Anterior corona radiata, UF, CC, ILF, CB	ROI analysis: FA
Miles et al. <sup>40</sup>	17 mTBI, 29 controls	GCS 13–15, LOC < 20 min, PTS < 24 hr	4 days (1–10)	CS, CC, posterior limb IC	ROI analysis: MD, FA
Rutgers et al. <sup>41</sup>	21 mTBI, 11 controls	GCS $\geq$ 13	5.5 months (0.1–109.3 months)	Cerebral lobar white matter, cingulum, CC	Whole-brain voxel-wise analysis: FA, ADC
<b>2007</b>					
Bazarian et al. <sup>42</sup>	6 mTBI, 6 orthopedic controls	GCS 13–15, +LOC or amnesia	$\leq$ 72 hours	Left anterior IC, posterior CC	ROI and whole-brain analysis: trace, FA
Kraus <sup>7</sup>	20 mTBI, 18 controls	ACRM mTBI criteria	107 months	CST, SS	White matter load and ROI analysis: FA, AD, RD
Hashimoto et al. <sup>43</sup>	1 mTBI (case report)	GCS 13 at 30 min	3 years	CC, cingulate, prefrontal area	MR tractography
Wozniak et al. <sup>44</sup>	6 mTBI, 14 controls	LOC, PTA, altered MS, recurrent emesis or persistent headache, or transient focal neurological deficits + GCS 13–15	8.2 months	Supracallosal	ROI analysis: FA
Benson et al. <sup>45</sup>	6 mTBI, 14 controls	LOC or PTA + GCS 13–15, 4/6 with +CT findings	35.3 months (3 days–15 years)	Global white matter	Global white matter histogram analysis: FA
<b>2002–2005</b>					
Inglese et al. <sup>46</sup>	46 mTBI, 29 controls	ACRM mTBI criteria	4.05 days for 20 subjects, 5.7 years for 26	CC, IC, CS,	Whole brain histogram and ROI analysis: FA, MD
Arfanakis et al. <sup>47</sup>	5 mTBI, 10 controls	Amnesia, disorientation, or confusion + GCS 13–15	<24 hours	CC, IC, EC	ROI analysis: FA, LI

VA, ventral anterior; CB, cingulum bundle; DLPFC, dorsolateral prefrontal cortex; CC, corpus callosum; ILF, inferior longitudinal fasciculus; SLF, superior longitudinal fasciculus; IC, internal capsule; UF, uncinate fasciculus; CS, centra semiovale; CST, corticospinal tract; SS, sagittal stratum; EC, external capsule.

The approaches to the analyses of DTI data in these studies are also heterogeneous and preclude the development of a common frame of reference for the comparison of findings between studies. For example, some studies calculate apparent diffusion coefficient (ADC) as a measure of white matter integrity, while others use FA for this purpose, and still others use additional measures such as radial diffusivity (RD, reflecting myelin integrity) and axial diffusivity (AD, reflecting axonal integrity) to help determine the contribution of various types of pathology to the FA value. In addition, some studies employ hypothesis-free analyses of the whole brain and apply one of several methods of correction for multiple unplanned comparisons to identify significant findings. Other studies use a region of interest (ROI) method to test specific anatomic or anatomic-clinical hypotheses and to limit the need to perform corrections for multiple unplanned comparisons. However, even within these studies there are methodologic differences with respect to which ROI(s) are targeted, how the ROI is defined, and whether a manual (i.e., hand-traced) versus semiautomated versus automated technique is used.

A related technical problem is the lack of a large normative database, including at least age and gender as foundations for its construction, for each make and model of MRI scanner and for each software version employed on those MRI scanners used to collect DTI data. Normative databases, much as are used to guide the interpretation of serum, urine, cerebrospinal fluid, and other quantitative laboratory assessments, are needed to interpret individual (i.e., single subject or single patient) FA, ADC, or other values for clinical purposes. In the absence of population-based normative databases of these sorts, each institution at which DTI is performed is left to develop and employ their own normative data when attempting to interpret group or single-subject DTI data. The size and normality of subjects included in these databases is highly variable between institutions, rendering the interpretation of any individual DTI result as normal or abnormal based on comparison to local normative data preliminary at best.

In summary, the mTBI and DTI literature available presently is adversely affected by the differences in the definition of mTBI employed and the heterogeneity of injury captured under the term mild TBI; heterogeneity in the time after injury at which persons with mTBI have been studied with DTI; and

the lack of a standard, widely used, and generally accepted method for acquiring, analyzing, and interpreting DTI data. In light of these limitations, the diverse and sometimes contradictory results produced by the studies performed to date are not surprising, and they present substantive challenges to their use in nonresearch contexts.

#### **Examples of Specific Problems Translating Studies Into the Medicolegal Setting**

Despite the limitations and challenges noted in the preceding section, DTI is a potentially powerful research tool for investigating white matter pathology across a broad spectrum of neuropsychiatric disorders, including mTBI. The work summarized in Table 1 provides foundational research with which to expand our collective knowledge of the strengths and limitations of DTI in this context. In this section, we review and critique select publications with respect to their implications on DTI for single-subject use, particularly in the context of litigation. It is important to note that this review is not intended as a critique of these studies *per se* but instead on the problems with translating findings from these studies from the group-level research context to that of the individual litigant.

Inglese *et al.*<sup>46</sup> performed DTI histogram analysis and failed to detect any statistically significant differences between early and/or late mTBI participants and controls. However, ROI analysis did reveal significantly increased mean diffusivity (MD) and reduced FA in the CC, centra semiovale (CS), and IC of mTBI participants. This frequently cited study supports the contention that DTI may detect between group differences when comparing mTBI patients with healthy controls, and suggests that DTI is sensitive to white matter damage following such injuries. It does not, however, address the specificity of such findings to mTBI, nor does it suggest that DTI is sensitive to white matter damage at the single-subject level. As for the statistically significant between-group results, the means and standard deviations reveal the potential for substantial overlap in white matter findings between mTBI patients and healthy controls. For instance, MD at the CC splenium for late mTBI participants was  $.56 \pm .07$  and  $.49 \pm .04$  for controls; all other statistically significant results in this study demonstrate similar overlap between the mTBI and control groups. While the mean  $\pm$  standard deviation differences between

groups may be sufficient to permit statistical discrimination between groups at the  $\alpha$  level of .05 or lower, any individual subject with MD values in the range of overlap between these groups cannot be reliably determined to be in one or the other group on the basis of MD value alone.

Kraus *et al.*<sup>7</sup> conducted ROI DTI analysis to characterize white matter integrity across the spectrum of TBI and to examine the relationship between white matter integrity and neuropsychological performance. Although the moderate/severe TBI group demonstrated reduced FA in all ROI, the mTBI group demonstrated significantly reduced FA in the corticospinal tract (CST), the sagittal stratum (SS), and the superior longitudinal fasciculus (SLF). The mTBI group had increased axial diffusivity (AD) in the SS and SLF relative to controls, but not in the whole brain, and no significant differences were found in RD. Kraus *et al.*<sup>7</sup> also examined white matter load, determining the total number of regions with FA values 1 standard deviation below the control mean. Although the mTBI group had an average load of 6 regions in which FA values were reduced, each control subject had an average of 3.6 regions of reduced FA. These observations suggest that DTI is probably very sensitive to white matter pathology following TBI, but they reveal substantial interindividual differences in white matter integrity even among healthy controls. These findings suggest that the specificity of such DTI abnormalities to mTBI, even when as well characterized as in this study, is limited. These observations illustrate well the problem of applying this technique to the examination of individual subject, patients, or litigants. In their article, Kraus *et al.*<sup>7</sup> present scatterplots demonstrating the relationship between neuropsychological domain scores (executive, attention, and memory) versus white matter load for individual study participants. These scatterplots make clear the substantial overlap between the mTBI and control groups and the difficulty of distinguishing control from mTBI. Notably, results from neuropsychological testing in these groups demonstrated similar overlap. Although a trend toward greater impairment in executive function and attention for the mTBI group is reported, no significant differences were found for any neuropsychological domain score.<sup>7</sup>

Miles *et al.*<sup>40</sup> conducted an investigation to determine if baseline DTI results were predictive of cognitive functioning six months after mTBI. DTI con-

sisted of ROI analysis to determine MD and FA in the CS, the CC (genu and splenium), and the posterior limb of the IC. Patients with mTBI were found to have statistically significant higher average MD and lower average FA when compared with controls. However, baseline DTI failed to reveal any statistically significant correlations with baseline neuropsychological testing, even though 41 percent of the mTBI group was cognitively impaired on baseline testing. For follow-up neuropsychological testing, a single statistically significant correlation was found between baseline FA values and performance on prioritization form B. Notably, of the five mTBI subjects who failed to return for follow-up testing, four were not impaired at baseline testing. In addition, as the authors themselves acknowledged, psychological status and other possible confounds were not assessed.

Rutgers *et al.*<sup>37</sup> performed ROI DTI analysis of the genu, body, and splenium of the CC. Patients with mTBI showed no significant difference in FA, ADC, and number of fibers for the genu, body, and splenium. However, when only those mTBI participants scanned less than three months after injury were compared with the controls, DTI abnormalities were associated with a history of mTBI. The authors suggested that DTI abnormalities in mTBI may be reversible,<sup>37</sup> a finding that would comport with an extensive body of literature on the natural history of such injuries.<sup>52</sup>

Niogi *et al.*<sup>36</sup> conducted an interesting ROI DTI analysis examining the correlation between FA in the anterior corona radiata (CR) and the uncinate fasciculus (UF) with attention and memory function in both healthy controls and mTBI patients. Although the mTBI group demonstrated a wider range of scores for attention, memory, and FA, there was considerable overlap between groups, and both featured correlations between attentional control and FA in the CR, and between memory and FA in the UF. These results suggest that tract-specific variations in white matter integrity for both healthy individuals and mTBI patients can account for variation in performance across specific cognitive domains. The fact that DTI can apparently capture anatomic differences in white matter anatomy that correlate with normal variation in cognitive performance indicates the likelihood of substantial problems regarding the specificity of abnormal findings derived from DTI, particularly at the individual patient level.

Lipton *et al.*<sup>35</sup> performed a retrospective study using whole-brain, voxel-wise DTI analysis to compare participants with cognitive impairment due to mTBI with healthy controls. This group reported an overall shift toward lower FA in mTBI patients, with significantly decreased FA noted in the CC, subcortical white matter, and bilateral IC. A similar study by Lo *et al.*<sup>34</sup> also compared patients with persistent cognitive impairment following mTBI with healthy controls using ROI DTI analysis. They reported decreased FA and increased ADC at the left genu of the CC in mTBI patients and increased FA in the posterior limb of the IC. Both of these studies involve retrospective designs wherein patients were identified based on persisting cognitive impairment, with the presumption that such cognitive deficits were the result of biomechanical trauma induced by mTBI. Relationships between the nature and/or severity of persisting symptoms and DTI findings were not explored. Although Lipton *et al.*<sup>35</sup> and Lo *et al.*<sup>34</sup> demonstrate white matter differences in their respective patient populations compared with healthy controls, given the nonspecific nature of postconcussive symptoms and the small number of subjects included in these studies, the specificity of their findings to TBI, rather than to other causes of postconcussive symptoms (e.g., depression, anxiety, and sleep disorders), remains uncertain and the translation of their findings to diagnosis of mTBI by DTI at the single-subject untenable.

Kumar *et al.*<sup>32</sup> used DTI to examine the CC in the acute period following mild and moderate TBI and correlated neuroimaging findings with neuropsychological testing at six months after injury. All TBI participants experienced a loss of consciousness, and all had demonstrable computed tomographic (CT) findings at the time of injury. A significant decrease in FA in the genu of the CC was observed in the mild and moderate TBI groups; the study authors also observed an increase in RD at the genu and splenium among the mild and moderate TBI groups when compared with the healthy control group. Changes in FA, RD, AD, and MD at various locations within the CC were associated with impaired performance on various elements of neuropsychological testing. The authors concluded that CC abnormalities were more common in the moderate TBI group than in the mTBI group, with a trend toward worse cognitive outcome at six months. They also suggested that RD may prove to be a better marker of axonopathy

and myelin breakdown in the early postinjury period. For the purposes of the present discussion, it is crucial to note the atypical nature of the mTBI group in this investigation, all of whom had both loss of consciousness and positive CT imaging; results based on such a study group are not likely to be generalizable to most mTBI patients or litigants. It is hardly surprising that this group of injured subjects separated from healthy controls, and such findings do little to establish the specificity of the DTI results reported. DTI data from this study were acquired during the acute injury period; it remains unclear if such findings persist into the chronic stages of injury. In addition, the authors' proposal of RD as a better marker for acute axonal injury reflects the yet-to-be-determined optimal method for DTI imaging and best metrics as applied to the injured brain.

Lipton *et al.*<sup>4</sup> compared patients with mTBI and matched controls using whole-brain, voxel-wise DTI analysis and neuropsychological assessment, both within two weeks of injury, to determine whether frontal white matter diffusion abnormalities can predict acute impairments in executive function. The mTBI group performed significantly worse on neuropsychological testing, and voxel-wise analysis of FA revealed 15 clusters of significantly reduced white matter FA, 5 of which occurred in the frontal lobes. A significant relationship between three of the frontal FA measurements and neuropsychological tasks was identified, with the most robust relationship for white matter subjacent to the left dorsolateral prefrontal cortex. Although the mTBI group exhibited higher levels of depression, stress, and anxiety, correlation analyses suggested that the association between DTI findings and neuropsychological test performance was independent of such emotional factors.<sup>4</sup> This study offers evidence that the frontal lobes and its cognitive functions are indeed vulnerable to acute biomechanical trauma as sustained in mTBI, a finding consistent with a large body of literature describing the well-established natural history of mTBI. However, these results do not facilitate prognosis at the individual subject level, including determinations of who will fail to follow the typical course of complete recovery or why they do so. These authors also discuss the relative advantages and disadvantages of voxel-wise versus ROI DTI analysis, reflecting the persisting controversies surrounding how best to apply this new technology to the injured brain.

Mayer *et al.*<sup>29</sup> performed ROI DTI analysis comparing a group of mTBI subjects in the subacute period with a healthy comparison group. Clinical assessment of attention, working memory, processing speed, executive function, memory, and emotional status was also performed and compared with DTI metrics in terms of accuracy for distinguishing patients from controls. FA in the mTBI group was increased in the CC, left CR, and left UF, and RD was lower in the CC genu, left UF, and left CR. Neuropsychological testing using premorbid intelligence as a covariate did not reveal significant between-group differences. Using binary logistic regression modeling, the authors sought to determine which of their objective measures of deficits, FA or neuropsychological battery, more accurately classified subjects as mTBI versus healthy control. Both models discriminated between controls (65% accuracy) and mTBI patients (66.7%) at slightly above chance levels. The addition of traditional neuropsychological measures of attention, memory, and executive function reportedly helped little, raising accuracy to 60 percent and 71.4 percent, respectively. The addition of right and left FA indices to the model did improve accuracy, but only to 70 and 81 percent, respectively. Notably, even the best model in this recent study suggested substantial error rates when sorting healthy controls from subacute mTBI patients using the combination of DTI and neuropsychological assessment. Levin *et al.*<sup>28</sup> used DTI tractography, ROI, and voxel-based DTI analysis, as well as measures of postconcussion symptoms, post-traumatic stress disorder (PTSD), global distress and depression, and cognition to compare Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) veterans with mild and moderate blast-related TBI to 15 control OEF/OIF veterans, eight uninjured subjects, and 7 with extracranial injury. Given the veteran cases and controls and the mechanism of injury investigated, results from this study may not be generalizable to civilian populations. Nevertheless, it is striking that, despite the application of several DTI analytic techniques and a patient group including several cases of moderate TBI, no group differences in either FA or ADC could be detected. Correlations between DTI findings and symptoms measures failed to achieve statistical significance, and were inconsistent. In this study, DTI failed to identify white matter injury despite persisting symptoms, including difficulties with verbal memory.<sup>28</sup> There

are several possible ways to interpret these results. Perhaps the long interval between injury and scanning allowed for natural recovery. Alternatively, the sensitivity of DTI to white matter injury following mTBI may be largely dependent on the techniques employed and parameters measured, or may simply not be as robust as previous investigations have suggested. Finally, this study may reveal problems surrounding our present gold standard for detecting mTBI, a clinical history derived from patient self-report. Exposure to biomechanical trauma frequently coincides with psychological trauma, and either may yield subjective experiences akin to feeling dazed, confused, or even unconsciousness.

In a very recent study published by the lab of one of our authors (MFK), Geary *et al.*<sup>27</sup> offered perhaps the most compelling evidence to date of DTI's ability to identify lesions in postacute mTBI yielding measurable neuropsychological impairment. These authors reported a combination of statistically significant differences in FA between mTBI participants and controls, and significant relationships between FA in various ROI and neuropsychological test performance. Although the mTBI group performance on the California Verbal Learning Test-II (CVLT-II) Trial 1 was the only statistically significant between-group difference on neuropsychological testing, FA values in the UF and left SLF accounted for a significant amount of the variance.<sup>27</sup> These data provide persuasive evidence that mTBI can produce lasting alterations in white matter integrity with neuropsychiatric implications, supporting the theory behind DTI's application to mTBI and the associated enthusiasm for this application. At the same time, these results are derived from between-group comparisons and reveal the potential for overlap between mTBI patients and healthy individuals on the applicable measures (both DTI metrics and neuropsychological test performance). Readiness for single-subject use, particularly in real-world instances involving a host of potential influences on white matter integrity, has yet to be demonstrated.

### Consideration of Daubert Criteria to DTI in Mild TBI

The criteria established in the *Daubert*,<sup>6</sup> *General Electric v. Joiner*,<sup>53</sup> and *Kumho Tire Co., v. Carmichael*<sup>54</sup> cases are intended for flexible application; such an approach will be crucial for courts considering evidence involving DTI, where the potential for

variability in equipment, technique, experience level, clinical circumstances, and reporting of results is enormous. *Daubert* analysis is a judicial exercise to be applied on a case-by-case basis. However, in reviewing the state of the science of DTI as applied to mTBI and its appropriateness for single-subject or forensic application, *Daubert* criteria may usefully guide review and analysis of the medical literature. The analysis that follows is merely anchored to *Daubert* criteria and is not intended to supplant the need for the judicial exercise and obviously does not dictate the admissibility of DTI evidence in any given instance.

The first *Daubert* inquiry asks whether the theory behind and the techniques related to the performance of DTI can be, or have been, tested. On this point, DTI as applied to mTBI fares well. As previously discussed, DTI's remarkable ability to assess white matter integrity makes it a compelling choice for the study of TBI and the known white matter damage associated with such injuries. Indeed, DTI's ability to identify mTBI has already been the subject of considerable scientific inquiry at multiple institutions worldwide.

The second *Daubert* factor asks whether those theories and techniques have been subjected to peer review and publication. As the above literature review and Table 1 demonstrate, DTI's application to mTBI has been the subject of many peer-reviewed publications to date. However, this second *Daubert* criterion is arguably far more complicated than it appears and warrants deeper consideration if it is to guide determinations of evidentiary appropriateness. Although each of these studies has been subjected to peer review and publication, the lack of uniform, including some idiosyncratic, definitions of mTBI remains a major problem in the current DTI literature. This problem renders many findings from this literature difficult to compare with one another and hard to translate clinically or medicolegally. Further complicating the interpretation and translation of findings from these studies is the variability in the time after injury at which subjects were enrolled, ranging from hours to years after TBI. In terms of adherence to guidelines, no such guidelines yet exist for DTI and its application to mTBI, a problem in interpreting this body of literature for its quality.

An additional general comment regarding this second *Daubert* criterion warrants consideration: although DTI findings in mTBI at the group level have been subjected to peer review and publication, there

are no studies that demonstrate the ability of DTI to serve as a valid and reliable diagnostic assessment of mTBI at the single-subject (patient) level. Absent any such publication, the forensic expert's need to testify with reasonable medical certainty that an individual litigant's DTI findings are attributable to mTBI is challenged. Thoughtful attention to the different missions and applications of peer-reviewed scientific publications and the court's evaluation of findings presented in those publications as legal evidence is appropriate. Peer reviewers are apt to accept manuscripts that advance the science, even if its application at the individual subject or patient level is not yet achievable; conversely, the court, in the context of mTBI litigation, is generally concerned only with application of that science to the case of the litigant. This review of the DTI and mTBI literature suggests that the research findings published thus far do not translate well from the group to the individual litigant level, and they do not appear to have been intended (by either authors or reviewers) for such translation.

The third *Daubert* criterion asks whether there is a known or potential error rate for the technique in question. As noted by Hoge *et al.*,<sup>55</sup> attributing cognitive, emotional, behavioral, and physical symptoms to mTBI, rather than posttraumatic stress disorder, depression, or other conditions, in the late postinjury period is challenging, and may not be possible in many cases. Nonetheless, clinical interview and self-reported history remain the gold standard for clinical and research diagnosis of mTBI. In the absence of a biomarker specific for mTBI with which to confirm the history-based diagnosis, definitive determination of error rates (i.e., sensitivity, specificity, positive and negative predictive values) for DTI as a diagnostic assessment for mTBI is not possible presently. Although error rates remain unknown, the preliminary data available from the existing literature portend substantial problems in this regard: The published findings demonstrate substantial overlap in DTI findings (and their correlation with neuropsychological performance) between mTBI and control groups.<sup>7,28,29,36,46</sup> Unaddressed in the literature is the extent to which other common neuropsychiatric conditions and environmental factors contribute to the mTBI versus control group DTI differences reported thus far. Also unaddressed is the more difficult and more typical task encountered in real-world patients: attributing DTI abnormalities to

mTBI at the single-litigant level, in which mTBI frequently co-occurs with other neuropsychiatric comorbidities and environmental stressor that can affect white matter integrity. In the absence of such studies addressing the interpretation of DTI findings in this very complex real-world setting, the potential error rate of DTI as a diagnostic assessment for mTBI is simply not knowable.

The third *Daubert* criterion also asks whether standards exist to support quality assurance in the performance of the technology at issue. DTI, and its application to mTBI, is lacking widely accepted and commonly applied quality assurance standards. DTI research and clinical facilities differ substantially in terms of equipment and techniques, and no clear front-runner has established itself as the preferred method for such investigations. In terms of current clinical applications, variability is even more pronounced between institutions that offer DTI and the methods they employ when interpreting clinical data.

The remaining *Daubert* inquiry asks whether general acceptance of the theory and technique has been achieved in the relevant scientific community. Those performing *Daubert* analyses must pose the proper inquiry when considering this criterion. While DTI's ability to characterize white matter integrity may meet this bar, the more pertinent set of questions for evidentiary usefulness is whether DTI can identify changes in white matter integrity caused by mTBI; distinguish changes produced by mTBI from those produced by other conditions; absent distinct differences in DTI findings between conditions, parse out the relative contributions of mTBI and other conditions to a given DTI data set; and produce information that informs usefully on any neurologic or neuropsychiatric impairments and functional disability experienced by an individual subject, patient, or litigant. The most accurate answer to this set of questions, based on the present literature in this field, is no. As stated by Bigler and Bazarian, "the newness of the DTI approach indicates the need for more research" (Ref. 56, p 643).

The state of the science suggests that in most instances DTI's evidentiary appropriateness for mTBI litigation will be poor. Well-designed investigations yielding peer-reviewed publications in support of DTI's single subject use for the diagnosis of mTBI do not exist. Error rates remain unknown, but the specificity of alternations in white matter integrity is ev-

idently problematic. Moreover, no standards exist surrounding the technical performance of DTI, or the reporting of its findings. The likelihood that an individual lab providing DTI data to a court in a given case could, at present, rise above the general state of DTI's evidentiary usefulness seems low. Also unlikely is the availability of the expertise needed to critically assess such data on a case-by-case basis to ensure that only appropriate evidence is being entered, or that the entered evidence is delivered in a manner that comports with scientific and ethical requirements.

Given the present state of the literature for DTI as applied to mTBI, the potential for this technology to be misapplied and granted far more evidentiary weight than scientifically justified seemingly exceeds the marginal value of its valid evidentiary applications. While few forensic experts have commented directly on DTI at this point, the potential for misuse of neuroimaging data in courts of law is a well-established concern.<sup>1,57,58</sup> The example of functional neuroimaging proves illustrative in this context. The Society for Nuclear Medicine's Brain Imaging Council,<sup>59,60</sup> in addressing the use of functional neuroimaging evidence, cautioned that the use of "nonreplicated, unpublished or anecdotal" data are "inappropriate and has ominous implications. This can lead to unsupportable conclusions if introduced as 'objective evidence'" (Ref. 57, p 1257). This observation seems particularly relevant to DTI and its presently unregulated state of affairs: The technological aspects and limits of DTI remain inaccessible to many experts and laypersons alike and therefore makes it likely to serve as a vehicle for medicolegal misguidance rather than clinical truth. When used this way in courts, neuroimaging may offer more in the way of jury seduction than clinical science. Because the use of DTI in TBI is predicated on a reasonably compelling and accessible theory, and because the images produced by this technology are so visually spectacular, the seductive power of DTI may be exceptional.

## Conclusions

Careful analysis of the DTI in mTBI literature, guided by *Daubert* criteria, suggests that, presently, the admission of DTI evidence in mTBI litigation is seldom appropriate. Under the best of circumstances, with DTI data generated by highly experienced labs and from patients with clinically unam-



biguous mTBI, the imaging data may add a quantifiable measure of white matter integrity to the body of evidence describing such patients. However, in these cases DTI would serve as superfluous evidence in support of an otherwise well-established mTBI. More alarming though is the potential use of DTI to prove mTBI in cases wherein other forms of more reliable and accepted clinical evidence fail to uphold, or directly refute, such conclusions. The compelling visual images and promises of objectivity that frequently accompany such presentations of neuroimaging data may serve to seduce rather than educate triers of fact. Until DTI acquisition, analysis, and interpretation techniques are standardized, and the error rates of these techniques with respect to the diagnosis of mTBI by DTI at the single-patient level are established, published in peer-reviewed scientific journals, and generally accepted by the medical field, the authors suggest that case-by-case *Daubert* analysis should seldom prove favorable to the admission of DTI evidence to establish mTBI.

Admission policies in many courts are relatively liberal, however, and not all jurisdictions apply the same standards; it therefore seems likely that DTI will continue to play a role in mTBI litigation despite the current state of the science. Accordingly, medical experts, courts, and attorneys must prepare themselves for this reality and become familiar with the requirements for ethical reporting derived from other neuroimaging technologies.<sup>1,59,60</sup> Offering an exhaustive differential diagnosis for any abnormal DTI finding regarding white matter integrity is an ethically mandated element of expert testimony when such findings are introduced as evidence. Officers of the court should be wary of any expert offering testimony involving definitive relationships between a DTI image and an illness or symptom, or refusing to identify limitations or confounding factors surrounding the study. Experts must be discouraged from claiming too much for this technology, using it to form opinions in isolation of or in conflict with other diagnostic data, or making bold cause-and-effect claims between mild TBI and white matter integrity findings.

If misused and left unchallenged, DTI imaging findings in mild TBI can be misleading. The ethical expert witness will acknowledge this fact, and the court should be prepared to exercise gate-keeping authority when the expert fails to present opinions regarding DTI data in a manner that comports with

ethical requirements and scientific realities. DTI is a far too promising emerging neuroimaging technique to allow early misapplications to interfere with the eventual realization of its full potential as a research, clinical, and medicolegal tool.

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United States District Court,  
W.D. Louisiana,  
Lafayette Division.  
Robert Craig ANDREW, et al.  
v.  
PATTERSON MOTOR FREIGHT, INC., et al.  
  
Civil Action No. 6:13CV814.  
Signed Oct. 23, 2014.

James Harvey Domengeaux, Domengeaux Wright et al, Lafayette, LA, for Robert Craig Andrew.

Michael J. Remondet, Jr., Jeansonne & Remondet, Lafayette, LA, for Patterson Motor Freight Inc.

#### MEMORANDUM RULING

REBECCA F. DOHERTY, District Judge.

\*1 Currently pending before the Court are the following motions: (1) plaintiff's "Motion in Limine to Strike and/or Limit Certain Testimony of Lay Witness, George 'Tracy' Latiolais" [Doc. 47]; (2) "Defendants' Motion in Limine/ *Daubert* Challenge to Exclude or Limit the Trial Testimony and Evidence of Dr. Eduardo Gonzalez-Toledo and Request for Hearing" [Doc. 51]; and (3) "Defendants' Motion in Limine/ *Daubert* Challenge to Exclude the Trial Testimony and Evidence of Dr. Mark S. Warner, Ph.D" [Doc. 52]. <sup>FN1</sup>

<sup>FN1</sup>. Additionally pending are: "Defendants' Motion in Limine/ *Daubert* Challenge to Exclude the Trial Testimony and Evidence of John W. Theriot and Request for Hearing" [Doc. 53], and plaintiffs' "Motion to Exclude Expert Witness, Frank Stagno, CPA/ABV and/or Motion in Limine as to Defendants'

Proffered Expert Testimony and Report Regarding Mitigation of Damages and Reasonable Alternatives" [Doc. 67]. Those motions will be addressed by separate ruling.

Considering the law, the facts in the record, and the arguments of the parties, the Court GRANTS plaintiffs' motion to limit the testimony of George "Tracy" Latiolais [Doc. 47]; the Court DENIES IN PART and DEFERS IN PART defendants' motion in limine/ *Daubert* challenge to Dr. Eduardo Gonzalez-Toledo [Doc. 51]; and the Court DENIES IN PART and DEFERS IN PART defendants' motion in limine/ *Daubert* challenge to Dr. Mark S. Warner [Doc. 52].

#### I. Factual Background

This matter involves a motor vehicle accident occurring on June 29, 2012, in the town of Broussard, Louisiana. [Doc. 1, ¶¶ 6, 7] According to the complaint, plaintiff Robert Andrew was injured when he was struck by a tractor-trailer operated by defendant Cecil A. French. [*Id.* at ¶ 7] Plaintiff alleges Mr. French was in the course and scope of his employment with defendant Patterson Motor Freight, Inc. at the time of the collision. [Doc. 5, ¶ 3] Plaintiff alleges as a result of the accident, he "sustained a **Traumatic Brain Injury** to the frontal lobe resulting in residual deficits in the areas of emotion, impulsivity, personality, and short term memory." [Doc. 48, p. 3] Plaintiff additionally alleges he sustained a fracture of a thoracic vertebrae (for which he underwent a T8 **Kyphoplasty**), and damages to the facets at the L4-5 region of the spine (with a recommendation of an L3-4 and L4-5 fusion with rods). [*Id.*] Plaintiff asserts he "has suffered and continues to suffer with severe back pain and general body pain, cognitive difficulties, headaches, sleep deprivation and disturbances, mood uncertainties, and confusion." <sup>FN2</sup> [*Id.*] Trial of this matter is scheduled for December 8, 2014. [Doc. 26]

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FN2. Plaintiff's wife, Susan M. Andrew, asserts a claim for loss of consortium. [Doc. 1, ¶ 12] References herein to "plaintiff" are to Robert Andrew.

## II. Standards of Review

### A. Lay Testimony

Rule 602 of the Federal Rules of Evidence states in pertinent part: "A witness may testify to a matter only if evidence is introduced sufficient to support a finding that the witness has personal knowledge of the matter. Evidence to prove personal knowledge may consist of the witness's own testimony." Fed.R.Evid. 602. If it is determined the witness does have personal knowledge of the matters to which he intends to testify, the nature of the witness' testimony is further limited by Rule 701, which provides:

If a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is:

- (a) rationally based on the witness's perception;
- \*2 (b) helpful to clearly understanding the witness's testimony or to determining a fact in issue; and
- (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.

Fed.R.Evid. 701; see also *U.S. v. Ebron*, 683 F.3d 105, 137 (5th Cir.2012) ("A lay opinion must be based on personal perception, must be one that a normal person would form from those perceptions, and must be helpful to the jury.")

### B. Expert Testimony

To be admissible at trial, expert testimony must satisfy the conditions of Federal Rule of Evidence 702, which provides:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed.R.Evid. 702. A district court has considerable discretion in deciding whether to admit or exclude expert testimony. See *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999) ("[W]e conclude that the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable."); *General Elec. Co. v. Joiner*, 522 U.S. 136, 139–40, 118 S.Ct. 512, 139 L.Ed.2d 508 (1997) (abuse of discretion is the standard of review).

"Rule 702 requires trial courts to ensure that proffered expert testimony is 'not only relevant, but reliable.' " *Brown v. Illinois Cent. R. Co.*, 705 F.3d 531, 535 (5th Cir.2013) (quoting *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993)). "To determine whether proffered testimony is reliable, the trial court must make 'a preliminary assessment of whether the reasoning or methodology underlying the testimony is

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... valid and of whether that reasoning or methodology properly can be applied to the facts in issue.’ “ *Id.* (quoting *Daubert* at 592–93). Courts should consider scientific expert testimony in light of factors that help determine the reliability of that testimony. *Daubert* at 589, 592–94. In this reliability analysis, courts may rely on factors such as those suggested by the *Daubert* court: “whether the theory or technique the expert employs is generally accepted; whether the theory has been subjected to peer review and publication; whether the theory can and has been tested; whether the known or potential rate of error is acceptable; and whether there are standards controlling the technique’s operation.” *Broussard v. State Farm Fire and Cas. Co.*, 523 F.3d 618, 630 (5th Cir.2008). “*Daubert* makes clear that the factors it mentions do *not* constitute a ‘definitive checklist or test.’ “ *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 150, 119 S.Ct. 1167, 143 L.Ed.2d 238 (1999) (emphasis in original). “The district court’s responsibility is ‘to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.’ “ *Pipitone v. Biomatrix, Inc.*, 288 F.3d 239, 247 (5th Cir.2002)(quoting *Kumho*, 526 U.S. at 152)). The focus of reliability “must be solely on principles and methodology, not on the conclusions they generate.” *Daubert*, 509 U.S. at 595.

\*3 “[A]s a general rule, questions relating to the bases and sources of an expert’s opinion affect the weight to be assigned that opinion rather than its admissibility....” *United States v. 14.38 Acres of Land*, 80 F.3d 1074, 1077 (5th Cir.1996)(internal quotations and citations omitted). “It is the role of the adversarial system, not the court, to highlight weak evidence....” *Primrose Operating Co. v. Nat’l American Ins. Co.*, 382 F.3d 546, 562 (5th Cir.2004). “Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert* at 596 (citation

omitted).

### III. Mr. George “Tracy” Latiolais

In 2005, plaintiff and Mr. Tracy Latiolais formed A & L Repair Service, LLC, an oilfield service company specializing in the repair of oilfield equipment, such as drill pipe spinners, kelly spinners, and power tongs.<sup>FN3</sup> [Doc. 48, pp. 6–7] Plaintiff and Mr. Latiolais each owned fifty percent of the company. [*Id.* at 6; Doc. 64, p. 2] In August 2013, Mr. Latiolais unilaterally made the decision to close down A & L Repair. [Doc. 48, pp. 7–8; Doc. 64, pp. 3–4] According to both plaintiff and Mr. Latiolais, Mr. Latiolais made the decision to close down A & L Repair because he was concerned the medications plaintiff was prescribed to address injuries sustained in the motor vehicle accident impaired plaintiff and might cause an accident, thereby exposing the business (and Mr. Latiolais) to liability. [See e.g. Doc. 64–1, pp. 15, 18–19; Doc. 47–6, pp. 3–4] According to plaintiff, he tried to explain to Mr. Latiolais the behaviors about which Mr. Latiolais was concerned were due to effects of the **brain injury** he incurred, rather than his prescribed medications. [Doc. 64–1, pp. 18–19] However, Mr. Latiolais was adamant that unless plaintiff discontinued his medications, the business would be closed. [*Id.*] As noted, Mr. Latiolais closed A & L Repair in August 2013.

FN3. In 2006, plaintiff and Mr. Latiolais additionally formed A & L Construction, LLC, a real estate holding company that owned the A & L Repair office building/shop, and received rental payments from A & L Repair for the use of this space. [Doc. 60–2, pp. 4, 6]

By this motion, plaintiff seeks an order prohibiting Mr. Latiolais from testifying certain behaviors of plaintiff were caused by plaintiff’s use of prescribed medications. [Doc. 48, pp. 16, 17] Plaintiff agrees Mr. Latiolais may testify as to: “his perceptions that after the crash Mr. Andrew’s *behavior* changed,” the behavior change affected plaintiff’s work performance,

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and the behavior change led to Mr. Latiolais' decision to shut down the business. [*Id.* at 17 (emphasis in original) ] However, plaintiff argues Mr. Latiolais should not be allowed to testify the *cause* of plaintiff's behavior change was due to medication. [*Id.* at 16–17] Counsel for plaintiff notes Mr. Latiolais testified in his deposition he did not know what medications plaintiff was taking, the dosage of those medications, or the side effects caused by the medications.

Defendants argue such testimony is properly admissible based upon Mr. Latiolais' observation of plaintiff, and because Mr. Latiolais had been told by plaintiff he was taking medications due to the injuries sustained in the accident. [Doc. 64, p. 6] Defendants additionally argue this testimony is relevant to the issue of damages for loss of wages, because Mr. Latiolais testified the reason they closed the business “was because of Andrew's medication usage and the resulting impairment.”<sup>FN4</sup> [*Id.*] Finally, defendants argue, “[a]ny concerns Plaintiffs may have can be fully addressed in cross-examination.”

**FN4.** Defendants argue Mr. Latiolais' reason for closing the business (*i.e.* his concern A & L would face liability in the event plaintiff's impairment from medications caused an accident) is relevant, because plaintiff is seeking “damages associated with the closure of the businesses....” [Doc. 64, pp. 2, 3, 6] However, as noted by plaintiff, “A & L Repair Services, LLC is not a party to this litigation and Mr. Andrew is not by pleading financial damages stemming from the closure of this entity on behalf of the LLC.” [Doc. 67–3, p. 18; *see also* Doc. 48, p. 18] Rather, plaintiff is seeking damages for lost wages and lost earning capacity he *personally* incurred as a result of this accident. [*See e.g.* Doc. 1, ¶ 11; Doc. 48, p.18; Doc. 67–3, pp. 18–19]

\*4 The Court finds Mr. Latiolais lacks the quali-

fications necessary to provide his opinion as to the *cause* of plaintiff's behavior, and thus, his opinion plaintiff's behavior was caused by prescribed medications lacks foundation. [Fed.R.Evid. 701](#) (where witness is not testifying as an expert, opinion testimony is limited to opinions based on perception, if helpful, and if not based on scientific, technical, or other specialized knowledge). Again, Mr. Latiolais testified he does not know what medications plaintiff was taking or their dosage; other than “a broken back,” he does not know what injuries plaintiff sustained; and he has no experience dealing with someone with abrain injury. [Doc. 47–6, pp. 16–18, 20, 22]

The Court additionally finds the foregoing testimony should be excluded pursuant to [Federal Rule of Evidence 403](#), which provides: “The court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.” Here, the Court finds any probative value of the testimony at issue would be substantially outweighed by the danger of unfair prejudice, confusion of the issues, and/or misleading the jury, in that it would present plaintiff to the jury as a potential drug abuser, where no evidence has been presented regarding same, and there are alternative explanations for the behavioral changes (*i.e.* the effects of abrain injury).

For all of these reasons, the Court finds while Mr. Latiolais may properly testify about his observations of plaintiff's behavior, he lacks sufficient personal or scientific knowledge to testify as to *the cause* of such behavior changes. *See e.g. Graves ex rel. W.A.G. v. Toyota Motor Corp.*, 2011 WL 4590772, \*8 (S.D.Miss.) (“An opinion based upon the assumption of the existence of an important fact cannot meet the [Rule 701](#) test.”) Accordingly, the Court grants plaintiff's motion, and Mr. Latiolais will be prohibited from testifying plaintiff's behavior changed *due to his use of prescribed medications*.

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#### IV. Dr. Eduardo Gonzalez–Toledo

By this motion, defendants assert plaintiff's neuroradiology expert, Dr. Eduardo Gonzalez–Toledo, should be prohibited from testifying at trial, and “all evidence associated with him” should be excluded. [Doc. 51, p. 1] Alternatively, defendants move for an Order limiting his testimony, “to exclude the images created with the Brain Suite program.” [*Id.*; see also Doc. 56, p. 3] Defendants request a “pre-trial ‘*Daubert* Hearing’ on this motion...” [*Id.* at 2] In support of their motion, defendants argue: (1) Dr. Gonzalez–Toledo is not qualified in the field of neuroradiology; (2) “the methodology that he utilized for his analysis is not widely accepted for the diagnosis of traumatic brain injury (TBI)”; and (3) “his testimony will be cumulative with that of Plaintiff's treating physicians and other expert and will not be helpful to the court.” [Doc. 51–2, p. 1]

##### A. Qualifications

\*5 Defendants argue Dr. Gonzalez–Toledo “does not meet the criteria of having sufficient specialized knowledge to assist the trier of fact,” because “he does not possess the necessary board certification to be recognized as a neuroradiologist or a neurosurgeon in the United States.” [*Id.* at 4] According to defendants, Dr. Gonzalez–Toledo's “designation as ‘neuroradiologist’ is self-selected.” [*Id.*] Defendants note Dr. Gonzalez–Toledo “has prior certifications in [neurosurgery](#) and radiology from Argentina, but he is only licensed to practice radiology in Louisiana.” [*Id.*]

According to Dr. Gonzalez–Toledo's affidavit: he is “a medical doctor specializing in neuroradiology,” licensed by the Louisiana State Board of Medical Examiners; he is the Director of Neuroradiology at LSU Health Sciences Center in Shreveport and the Director of Research for the Department of Radiology at University Health (formerly known as LSU Health Sciences Center in Shreveport); he is a tenured professor of Radiology, Neurology and Anesthesiology at University Health; for over forty-five years, he has

been teaching, researching, practicing, and publishing articles about neurology, radiology, [neurosurgery](#), CT technology, MR technology and [neuroimaging](#); he has published nearly 200 publications, including books, chapters in books, and articles in journals in the fields of radiology, neurology, and neuroradiology; he is a member of many professional societies, including the American College of Radiology and the American Society of Neuroimaging; he became board certified in [neurosurgery](#) by the Argentine College of Neurosurgeons in 1971, and was certified in radiology by the Ministry of Public Health in Argentina in 1977; he was board certified in both diagnostic imaging and [neurosurgery](#) by the National Academy of Medicine's Council for Certifications of Medical Professionals in Argentina shortly after it was created in 1994; in 2010, the United States' Accreditation Council for Graduate Medical Education ruled the foregoing credentials “were equivalent to board certification by the American Board of Radiology.” [Doc. 59–5, ¶¶ 1, 3–4, 44, 46–47, 53–54]

The Court finds the foregoing credentials qualify Dr. Gonzalez–Toledo to testify as an expert in the field of neuroradiology and notes, however, that defendants will have full opportunity to traverse Dr. Gonzalez–Toledo as to his qualifications at trial, if defendants so desire.

##### B. Methodology

###### 1. Cortical Reconstruction/Cortical Thickness Measurement

According to Dr. Gonzalez–Toledo, Cortical Reconstruction or Cortical Thickness Measurement (“CTM”) is a type of [neuroimaging](#) that detects changes in the cortical surface—*i.e.*, “the area where the gray matter covers the cerebral hemispheres, where the higher nervous system centers are located.” [Doc. 51–4, p. 1; Doc. 59–5, ¶ 6] To conduct CTM, Dr. Gonzalez–Toledo performs an MRI, the data from

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the MRI is processed through BrainSuite software, resulting in 3D reconstructed images of the cortical surface. [Doc. 59–5, ¶¶ 32–33, 35; Doc. 59, p. 4; Doc. 51–4, p. 2] According to Dr. Gonzalez–Toledo, CTM “demonstrate[s] evidence of [traumatic brain injury](#) pathology and can reveal abnormalities that are not visible on standard MRIs.” [Doc. 59–5, ¶ 21; Doc. 51–4, p. 3] As noted by defendants, according to the BrainSuite website:

\*6 BrainSuite is a collection of software tools that enable largely automated processing of magnetic resonance images (MRI) of the human brain. The major functionality of these tools is to extract and parameterize the inner and outer surfaces of the cerebral cortex and to segment and label gray and white matter structures. BrainSuite also provides several tools for visualizing and interacting with the data.

[Doc. 51–2, p. 6 (citing <http://brainsuite.org/> (August 19, 2014))]

Defendants argue Dr. Gonzalez–Toledo's testimony should be excluded because “it is not based on sufficient data and facts, and the methodology that he utilized for his analysis, i.e., reconstructing images from MRI data through the use of Brain Suite software, is not widely accepted for the diagnosis of traumatic [brain injury](#) (TBI).” [Doc. 51–2, pp. 4–5] Alternatively, defendants move for an order “limiting the testimony and evidence ... to exclude the images created with the Brain Suite program.” [Doc. 51, p. 1] Defendants note they “do not object to the underlying data [i.e. the MR images], but to the prejudicial and misleading reworking of the data and presentation of it by the created images produced by postprocessing software.” [Doc. 80, pp. 1–2]

With regard to methodology, defendants argue “cortical mapping ... is currently a research tool and is not used in clinical diagnostics and decision-making,”

citing the affidavit of their expert neuroradiologist, Dr. Partington.<sup>FN5</sup> According to defendants, the images of plaintiff's brain attached to Dr. Gonzalez–Toledo's report are “excerpted from the MRI,” and then “processed to show the surface of the brain with color of an arbitrary value superimposed on these images.” [Doc. 52–2, p. 6] Defendants continue, “In his report, Dr. Gonzalez–Toledo stated that the areas that are color-coded in blue on these maps show evidence of [traumatic brain injury](#).”<sup>FN6</sup> [Id.] According to Dr. Partington, when the areas in blue on the CTM images are compared to the same areas of the brain on the MRI images, no abnormality is observable. [Id.; see also Docs. 59–24, p. 12; 54–3, p. 3; 51–7, p. 2] In other words, defendants argue “[t]he data itself is normal and shows no evidence of traumatic injury.”<sup>FN7</sup> [Id. at 7] In light of the foregoing, defendants conclude:

FN5. According to Dr. Gonzalez–Toledo's affidavit, CTM is “used clinically at University Health as a diagnostic tool,” and it is “used clinically in other parts of the country and is reimbursable by some health insurance companies.” [Doc. 59–5, p. 4]

FN6. The Court notes Dr. Gonzalez–Toledo's states the “compromised portions of the cortex” are shown in “blue and yellow colors.” [Doc. 51–4, p. 2]

FN7. Again, according to Dr. Gonzalez–Toledo, the reason one conducts CTM is precisely because it “demonstrate[s] evidence of traumatic brain injury pathology and can reveal abnormalities that are not visible on standard MRIs.” [Doc. 59–5, ¶ 21] Additionally, the Court notes, when pressed by plaintiff's counsel on the issue of the purported inconsistencies between plaintiff's CTM and MRI images, Dr. Partington testified: “And I will admit that I am not well-versed enough in cortical mapping to



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know whether a normal person, are they absolutely homogenous red, absolutely homogenous blue.... And I just don't have enough experience with it and knowledge of it to know what the normal variations are.” [Docs. 56–1, p. 6; 59–24, p. 13] He further admits it is speculation on his part as to whether the areas in blue shown on the CTM images must match the MRI images. [Doc. 59–24, p. 13]

Dr. Gonzalez–Toledo's use of the Brain Suite software for diagnostic purposes has not been sufficiently tested and subjected to peer review and publication in the field of [traumatic brain injury](#) to be reliable. The potential rate of error is unknown, Dr. Gonzalez–Toledo offered no standards controlling its operation; and it is not generally accepted within the neuroradiology field as a reliable clinical diagnostic tool. *Daubert, supra*.

[*Id.* at 8] <sup>FN8</sup>

**FN8.** To the extent defendants argue the cortical mapping images are unreliable because “it is impossible to discern what parameters Dr. Gonzalez–Toledo set to get the results he presented in his report,” the Court disagrees. [Doc. 54–2, p. 3] This argument is based on testimony of Dr. Partington, wherein he was asked if he could explain why the MRI images show a normal brain, whereas the CTM images show abnormality. Dr. Partington could not explain, but stated, “[m]y guess would be, and its strictly speculation on my part,” that one could change the parameters on the software to show increased abnormality where none existed. [Doc. 56–1, p. 8] However, Dr. Gonzalez–Toledo states in his affidavit “[t]he software has preset conditions and settings that are recommended by physicists at ... UCLA,” and he “does not modify the settings, change the parameters or make any

changes to the software.” [Doc. 59–5, p. 10] Accordingly, the Court will not exclude Dr. Gonzalez–Toledo's testimony on the basis “it is impossible to discern what parameters Dr. Gonzalez–Toledo set to get the results he presented in his report.”

In support of their argument that Dr. Gonzalez–Toledo's testimony is based on insufficient facts and data, defendants argue Dr. Gonzalez–Toledo “never met Plaintiff or observed his behavior” and, based solely upon the MRI he conducted and his “reconstruction of the data from that MRI in Brain Suite, ... he claims that Mr. Andrew suffered a [traumatic brain injury](#) during the motor vehicle accident.” [Doc. 51–2, p. 5 (citing Dr. Gonzalez–Toledo's expert report) ] However, according to defendants, in his deposition, Dr. Gonzalez–Toledo “admitted that he cannot say that this accident caused the alleged damage to the brain.” [*Id.*] The Court will not exclude Dr. Gonzalez–Toledo's testimony on the basis of the argument now presented by defendants. Rather, after testimony and opportunity for objection, should CTM testimony be admitted at trial, this issue can be fully addressed on cross-examination. *See e.g. Daubert, 509 U.S. at 592* (“Unlike an ordinary witness ..., an expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation”); *Bryan v. John Bean Division of FMC Corp., 566 F.2d 541, 546 (5th Cir.1978)* (“experts particularly doctors customarily rely upon third party reports from other experts such as pathologists and radiologists in whom the testifying expert places his trust”); *Fed.R.Evid. 703* (“An expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed”).

<sup>\*7</sup> As their final argument, defendants assert “the probative value of Dr. Gonzalez–Toledo's reconstructed images and analysis is substantially outweighed by the likelihood that the jury will be confused or misled by the compelling visuals of the

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images produced by the Brain Suite imaging technology.” [Doc. 51–2, p. 9] According to defendants, “The images produced by the software, while not accurately reflecting the status of Plaintiff’s brain, are colorful, arresting, and likely to impress the average juror who may not understand the nature and origin of the images and what they actually portray.” [*Id.*]

With regard to CTM, itself, the Court finds, at this juncture, it has insufficient information to determine whether the testimony and evidence is reliable. While Dr. Gonzalez–Toledo has provided a number of *conclusory* statements and open opinions regarding the reliability of CTM, he has not provided an underlying bases for those opinions. “To establish reliability under *Daubert*, an expert bears the burden of furnishing ‘some objective, independent validation of [his] methodology.’ “ *Brown v. Illinois Cent.R. Co.*, 705 F.3d at 536 (quoting *Moore v. Ashland Chemical Inc.*, 151 F.3d 269, 276 (5th Cir.1998)). Accordingly, the Court will grant defendant’s motion for a pre-trial *Daubert* hearing to address the reliability of CTM and Dr. Gonzalez–Toledo’s reliance thereon. At the hearing, plaintiff should focus his argument and evidence on factors such as: whether the theory or technique the expert employs is generally accepted; whether the theory has been subjected to peer review and publication; whether the theory can be and has been tested; whether the known or potential rate of error is known or if known, acceptable; and whether there are standards controlling the technique’s operation. *Broussard*, 523 F.3d at 630. The hearing will be set by separate minute entry.

## 2. Diffusion Tensor Imaging (“DTI”)

According to Dr. Gonzalez–Toledo, *diffusion tensor imaging* (“DTI”) is “an MRI method that examines the microstructure of the white matter of the brain, allowing for the detection of microscopic pathology or abnormality of the white matter.” [Doc. 59–5, ¶ 7] More specifically:

DTI measures the direction of movement or flow

(known as diffusion) of water molecules through tissue. Water moves through damaged tissue at different rates and in different directions than it does [in] healthy tissue. DTI is based upon the basic physics of the flow of water. With no barriers to flow, water will move in isotropic distribution, which means it Will move equally in all directions. If there are barriers to flow, it will move anisotropically or unequally in all directions like a perforated sprinkler-hose. As the water molecules flow through brain tissue, the water molecules follow the nerve fibers, and so by reconstructing these trajectories, DTI can image the nerve fibers.

[Doc. 59–5, p. 5] “The majority of people who have sustained mild *traumatic brain injury* (mTBI) have normal MRI and CT findings, even when significant neurological impairments exist as a result of the *traumatic brain injury*.” [*Id.*] “DTI is a more sensitive technology that can reveal damage that is not visible on standard MRIs.” [*Id.* at ¶ 9] To perform DTI, Dr. Gonzalez–Toledo performs an MRI, and then inputs the data obtained from the MRI into software called “3D Slicer,” resulting in 3D reconstruction of the fiber tracts. [*Id.* at ¶¶ 32–35; Doc. 51–4, p. 2]

\*8 At this juncture, the Court must note defendants make no attack against the use of DTI until their reply brief. While they ask this Court to exclude both DTI and CTM evidence in their original and supplemental motion in limine, all arguments contained in those documents are addressed toward the use of the BrainSuite software (and thus, CTM). The majority of defendants’ argument against Dr. Gonzalez–Toledo’s methodology (*i.e.* DTI is not widely accepted for the diagnosis of TBI) is based upon a single article entitled *Guidelines for the Ethical Use of Neuroimages in Medical Testimony*. According to defendants, this article supports their position that “[t]he postprocessed images are vibrant and visually arresting, and likely to impress the average juror who will likely not understand how the images are created, what they actually show, and whether they are reliable.” [Doc. 80, p. 3]

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(Cite as: 2014 WL 5449732 (W.D.La.))

Defendants additionally note the article “cites concerns about bias, such as the hindsight bias, by which radiologists are more likely to detect an abnormality on imaging when they are told in advance to expect one,” as well as concerns that “ ‘in cases that use functional [neuroimaging](#) methods typically performed in the research setting, the expert may be influenced by a professional investment in promoting his or her research area or specific research findings.’ ” [Id.]

Defendants then state the same concerns “may very well be at play here....” [Id.] The Court finds these are all matters for cross-examination and not a basis for blanket exclusion of Dr. Gonzalez–Toledo's testimony.

Defendants note the article states DTI “results may vary by scanner field strength, scanner type, pulse sequence, and postprocessing.” [Id. at 3–4; Doc. 74–3, p. 3] However, Dr. Gonzalez–Toledo has provided all the relevant information necessary for defendants to explore this topic on cross-examination. [See Doc. 59–5, ¶¶ 31–33, 35–38] Defendants additionally assert Dr. Gonzalez–Toledo was “required” to include a disclaimer in his report, but failed to do so. [Doc. 80, pp. 4–5] First, the Court notes the disclaimer is “suggested”—not required. Second, the Court notes the disclaimer is addressed toward physicians and not jurors. [See Doc. 74–3, p. 4; 59–21, p. 5] Regardless, this issue can be fully addressed on cross-examination. The remainder of defendants argument against admission of DTI evidence is based upon defendants' expert's assertion of the ways in which he alleges Dr. Gonzalez–Toledo did not follow the “proposed” guidelines set forth in the referenced article. Again, all of these issues are matters for cross-examination, and not the basis for blanket exclusion of evidence.

Unlike CTM, the Court finds plaintiff has submitted sufficient evidence to show the reliability of DTI. In sum, the evidence submitted shows DTI has been tested and has a low error rate [Doc. 59–5, ¶¶ 12, 20–21, 30; Doc. 59–9]; DTI has been subject to peer

review and publication [Doc. 59–5, ¶ 30; Doc. 59–9]; and DTI is a generally accepted method for detecting TBI [Doc. 59–5 at ¶ 7–12, 14, 18–19, 21, 30–31]. [Daubert v. Merrell Dow Pharmaceuticals, Inc.](#), 509 U.S. 579, 593–94, 113 S.Ct. 2786, 125 L.Ed.2d 469. The Court additionally notes DTI testimony has been admitted by several courts. See e.g. [Ruppel v. Kucanin](#), 2011 WL 2470621 (N.D.Ind.); [Hammar v. Sentinel Ins. Co., Ltd.](#), No. 08–019984 (Fla.Cir.Ct.2010) [Doc. 59–11]; [Booth v. Kit](#), 2009 WL 4544743 (D.N.M.). Accordingly, the Court denies defendants' motion to the extent it seeks to exclude evidence and testimony regarding DTI.

#### V. Dr. Mark S. Warner

\*9 By this motion, defendants argue the evidence and testimony offered by plaintiff's neuropsychology expert, Dr. Mark S. Warner, should be excluded, or alternatively, limited. [Doc. 52, p. 1] In support of this position, defendants argue Dr. Warner's methodology is “flawed and unreliable,” as well as cumulative. [Doc. 52–2, p. 1] Defendants argue Dr. Warner's methodology is flawed because: (1) he never met or examined plaintiff; (2) “[h]is opinion is based solely upon the reported findings of other treating professionals and his general knowledge of the science surrounding traumatic [brain injury](#)”; and (3) because one of the expert opinions upon which Dr. Warner relies is that of Dr. Gonzalez–Toledo, who is the subject of a defense *Daubert* motion. [Id. at 4–5] Defendants argue Dr. Warner's testimony is cumulative, because defendants anticipate plaintiff will present testimony from his treating physicians (*i.e.* his treating neurosurgeon, neuropsychologist, and psychiatrist). [Id. at 2, 6]

As to defendants' argument Dr. Warner's methodology is flawed because he never examined plaintiff, and his opinion is based “solely upon the reported findings of other treating professionals and his general knowledge of the science surrounding traumatic [brain injury](#),” the Court notes defendants have provided no legal authority in support of this argument. Rather,

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(Cite as: 2014 WL 5449732 (W.D.La.))

“experts [,] particularly doctors[,] customarily rely upon third party reports from other experts such as pathologists and radiologists in whom the testifying expert places his trust.” *Bryan v. John Bean Division of FMC Corp.*, 566 F.2d 541, 546 (5th Cir.1978); see also *Daubert*, 509 U.S. at 592 (“Unlike an ordinary witness ..., an expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation”). **Federal Rule of Evidence 703** provides, “An expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed”. As the notes to **Fed.R.Evid. 703** make clear, the rule contemplates opinions based upon data provided to the expert “outside of court and other than by his own perception.” **Fed.R.Evid. 703** (1972 Notes). Furthermore, “[a]s a general rule, questions relating to the bases and sources of an expert’s opinion affect the weight to be assigned that opinion rather than its admissibility and should be left for the jury’s consideration.” “*U.S. v. 14.38 Acres of Land, More or Less Sit. in Leflore County, Miss.*, 80 F.3d 1074, 1077 (5th Cir.1996)(quoting *Viterbo v. Dow Chemical Co.*, 826 F.2d 420, 422 (5th Cir.1987)). Accordingly, defendants’ motion will be denied on the basis of this argument.

As to defendants’ argument Dr. Warner’s testimony should be excluded because it relies upon the opinion of Dr. Gonzalez–Toledo, the Court defers ruling until after the *Daubert* hearing regarding CTI testimony and Dr. Gonzalez–Toledo’s reliance thereon. Should it be found evidence of CTI is inadmissible, then the Court will exclude any opinions of Dr. Warner based *solely* upon his reliance of Dr. Gonzalez–Toledo’s CTM studies.

**\*10** The Court additionally defers addressing whether Dr. Warner’s testimony is cumulative until the evidence is heard at trial, but cautions plaintiffs, cumulative testimony will not be allowed. Defendants (as well as plaintiff) may object to cumulative testimony from any witness if and when such an event

occurs at trial.

## VI. Conclusion

In light of the foregoing reasons, the Court GRANTS plaintiffs’ motion to limit the testimony of George “Tracy” Latiolais [Doc. 47]; the Court DENIES IN PART and DEFERS IN PART defendants’ motion in limine/ *Daubert* challenge to Dr. Eduardo Gonzalez–Toledo [Doc. 51]; and the Court DENIES IN PART and DEFERS IN PART defendants’ motion in limine/ *Daubert* challenge to Dr. Mark S. Warner [Doc. 52].

W.D.La.,2014.

Andrew v. Patterson Motor Freight, Inc.

Slip Copy, 2014 WL 5449732 (W.D.La.)

END OF DOCUMENT

59 Misc.3d 233

Supreme Court, Suffolk County, New York.

Denise BROUARD and Gerald Brouard, Plaintiffs,  
v.  
James CONVERY, PV Holding Corp., and Avis  
Rent a Car System, Inc., Defendants.

028560/2005

Decided on February 9, 2018

### Synopsis

**Background:** Action was brought against defendant driver to recover for injuries sustained in automobile accident. Plaintiffs filed motion to take judicial notice of general acceptance and acceptability of certain technology and to preclude defendant from contesting related expert testimony. Defendant filed cross-motion to preclude plaintiff's evidence and seeking *Frye* hearing.

**[Holding:]** The Supreme Court, Suffolk County, James Hudson, J., held that **Diffusion Tensor Imaging** (DTI) technology did not satisfy *Frye* test for admissibility as the standard in clinical/medical treatment of individual patients being treated for traumatic brain injury (TBI).

So ordered.

West Headnotes (1)

[1] **Evidence**  
🔑 Results of experiments

**Diffusion Tensor Imaging** (DTI) technology does not have the general acceptance of the scientific and medical community, as required under *Frye*, to be used as the standard in clinical/medical treatment of individual patients who are being treated for traumatic brain injury (TBI).

[Cases that cite this headnote](#)

### Attorneys and Law Firms

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10006, Attorneys for Dependents.

### Opinion

James Hudson, J.

\*234 Based upon the papers submitted and the argument of counsel, it is

**ORDERED** that the Plaintiffs' motion (seq. no.:12) for the Court to take judicial notice of certain technology and for an order of preclusion is denied. Defendants cross-motion (seq. no.:13) for an order of preclusion concerning said technology is granted.

The matter at hand is an action for damages sounding in negligence. It arises from an automobile accident which occurred on December 14th, 2004 at an intersection in Stony Brook, County of Suffolk, State of New York. Plaintiffs Denise Brouard and Gerard Brouard, (hereinafter referred to as "the Brouards") allege, *inter alia*, that the Defendant, James Convery, was making a left-hand turn with his vehicle when he struck the front of Plaintiff Denise Brouard's car, causing mild **traumatic brain injury** ("MTBI"), as well as neck, back, shoulder and **knee injuries**.

Plaintiffs now move for an order from this Court for various relief: (1) to take judicial notice of the general acceptance and acceptability of technology known as **Diffusion Tensor Imaging** ("DTI") pursuant to *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923); and (2) to preclude Defendant from contesting any expert testimony put forth by Plaintiffs in this regard.

Defendants oppose the motion and cross-move pursuant

to CPLR § 4532-a for relief which consists of the following: (1) an order precluding certain neuroradiological studies including DTI to diagnose minor traumatic brain injury (“TBI”) based upon the *Frye* standard; or (2) to conduct a *Frye* hearing to determine the admissibility of methods, technologies and theories for determining minor traumatic brain injury allegations. Alternatively, the Defendants seek an order of preclusion on the basis that Plaintiffs failed to respond to a prior Court Order directing \*235 disclosure and for failing to comply with CPLR § 4532-a. If the Court declines to grant an order of preclusion, Defendants request an order directing Plaintiffs to disclose the actual data and information regarding the subject neuroradiological studies which Plaintiffs’ experts relied upon in coming to their conclusions.

In the event that the above requests for relief are not viewed with favor by the Court, the Defendants ask that the Court hold a *Parker* hearing on the question of the reliability of the advanced radiological studies techniques and methods utilized by Plaintiffs’ experts and whether there is sufficient probative value to allow its consideration by the jury.

The facts which have prompted the Plaintiffs to make the above referenced motion are that methodology and technology utilizing DTI was used to examine Plaintiff in 2008 and 2014. Plaintiffs claim that this specific technology enjoys general acceptance by the scientific and medical community and therefore passes the long-recognized rule contained in *Frye v. United States*, 54 App.D.C. 46, 293 F. 1013 (D. C. Cir. 1923). Given the status of DTI, Plaintiffs contend that the Defense must be precluded from adducing any expert testimony claiming that any MRI using DTI technology is not generally accepted by the scientific/medical community to investigate mild TBI’s.

Oral argument was held before this Court between the two very capable and eloquent attorneys, Michael Flomenhaft, Esq. for the Plaintiffs and Matthew I. Toker, Esq. for the Defendants. The Court would be remiss if it did not thank learned counsel for their scholarly advocacy.

The march of science is inexorable. This has created a challenge for trial courts in deciding what “scientific” evidence is truly worthy of the name. How is a Judge, a presumed expert in jurisprudence, but a lay person in science, to make such a determination? It is the Court’s solemn duty to winnow the proof, finding and separating the modern day alchemy from chemistry as a metallurgist would remove dross from gold. In the ninety-five years

since *Frye* was handed down to us, case law and medicine have both developed. Other jurisdictions have abandoned the *Frye* analysis and embraced the reasoning in *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993), (see FRE Rule 702 ). New York, however has continued to follow the *Frye* rule, wisely leaving innovation to scientists and legislators (e.g. *Parker v. Mobil Oil Corp.*, 7 N.Y.3d 434, 824 N.Y.S.2d 584, 857 N.E.2d 1114 [2006]; *People v. Wesley*, 83 N.Y.2d 417, 611 N.Y.S.2d 97, 633 N.E.2d 451 [1994] ).

As *Frye* evolved, its progeny added the refinement that the term “general acceptance” did not refer to a mere head-count of \*236 experts. Instead, it became clear that there should be a clinical (not just scientific) consensus, and that the proper foundation be laid as well as acceptable methods employed in each particular case (*Parker v. Mobil Oil Corp.*, *supra*, *Sadek v. Wesley*, 117 A.D.3d 193, 986 N.Y.S.2d 25 [1st Dept. 2014] *aff’d* 27 N.Y.3d 982, 32 N.Y.S 3d 42, 51 N.E.3d 553 [2016] ). This is the analysis we apply to the instant controversy.

This case began in 2005 and in the intervening passage of time, DTI technology and the scientific/medical literature discussing it has proceeded apace. Early indications of approbation, however, have given way to doubt regarding acceptance of DTI technology to evaluate mild brain trauma injuries.

A significant case cited by Plaintiffs is *LaMasa v. Bachman*, 56 A.D.3d 340, 869 N.Y.S.2d 17 [1st Dept. 2008]. The Appellate Court found that DTI technology met the *Frye* standard. At first glance this would seem to end the inquiry. On the contrary, *La Massa* was followed by a “white paper” in 2014 which cast the First Department holding into doubt (M. Wintermark, P.C. Sanelli, Y. Anzai, A.J. Tsiouris and C.T. Whitlow on behalf of the American College of Radiology Head Injury Institute, Imaging Evidence and Recommendations for Traumatic Brain Injury: *Advanced Neuro- and Neurovascular Imaging Techniques*, *American Journal of Neuroradiology*, November 2014 ). Immediately after its publication, it gained notoriety among the Neuroradiology community. This white paper (supported and endorsed by members of the scientific/clinical medical community) holds that new advances in neuro-imaging techniques are showing promising results in group comparison analyses (DTI, PET, Q EEG, etc.). Nevertheless, the article concludes that there is insufficient evidence supporting the routine clinical use of advanced neural imaging for diagnoses and/or prognostications at the individual patient level.

In deciding the significance of the white paper (whose authenticity is not questioned), the Court is guided by the recent holding in *Dovberg v. Laubach*, 154 A.D.3d 810, 63 N.Y.S.3d 417 [2nd Dept.2017].

*Dovberg* emphasized that the burden of proving general acceptance of scientific principles or procedures for the admissibility of expert testimony rests upon the party offering the disputed expert testimony. That general acceptance of scientific principles or procedures which are required for admissibility of expert testimony can be demonstrated through scientific or legal writings, judicial opinions, or expert opinions other than the proffered expert. In addition to the requirement that the \*237 technology be generally accepted (and supported by adequate documentation), the movant must meet the standards of *Parker v. Mobil Oil Corp.*, *supra*.

Applying the prior precedents in *Dovberg*, the Second Department found the proposed “expert testimony” to be inadmissible based on the Defendant not meeting his burden of proof. Specifically, the Second Department found that the expert testimony did not meet generally accepted scientific principles (*Frye*). The Court noted that the proffered evidence failed to make reference to any empirical data or any peer-reviewed journals, and did not provide the names of the authors and years of publication (*Parker*) [*Dovberg, supra* at 813–814, 63 N.Y.S.3d 417].

The parallels between this case and *Dovberg* are clear and dispositive. The white paper by M. Wintermark *et al.* makes it clear that DTI technology is not generally accepted as yet in the field of neurology for use in the clinical treatment of individual patients. The rule in *LaMasa v. Bachman, supra*, though superbly researched and written, has been outpaced by current scientific

knowledge. Accordingly, evidence of DTI technology must be shielded from the jury’s review.

Consequently, based on the issue of general acceptability in a given field, the Court finds that DTI does not (at the time of this writing) have a general acceptance to be used as the standard in clinical/medical treatment of individual patients who are being treated for TBI’s.

As additional arguments against Plaintiffs being permitted to have their expert testify that DTI technology is generally acceptable, Defendants proffer other arguments including Plaintiffs failure to respond to a prior Court Order to comply with CPLR § 4532–a, and a failure to produce the underlying data which Plaintiff’s experts relied on in which the Defendants’ experts would need to do an independent review of their own, for a possible “*Frye*” and/or a “*Parker*” hearing. We also find these arguments to be compelling. All of the foregoing obliges the Court to the following conclusion: Under the circumstances presented, the Court denies Plaintiff’s motion in its entirety. The Defendants’ cross-motion to preclude Plaintiff from using DTI technology by their expert is granted. While Defendant has other requests for relief which are meritorious, they are rendered moot by this Court’s decision and need not be further addressed.

The foregoing Memorandum Decision is also the Order of the Court.

#### All Citations

59 Misc.3d 233, 70 N.Y.S.3d 820, 2018 N.Y. Slip Op. 28035

2015 WL 417250 (N.Y.Sup.) (Trial Order)  
Supreme Court, New York.  
Part 10  
New York County

Nathaniel KLIPPER, Drew Doshier, Michael Hisler, Jeffrey Horan, Michael Carley and Christopher Kane,  
Plaintiffs,

v.

LIBERTY HELICOPTERS, INC., Liberty Helicopters, Inc. (NY), Liberty Helicopters, Liberty Helicopter Tours,  
Liberty Helicopter Tours of New York, Inc., Drew E. Schaeffer, Aegis Holdings Corporation, Meridan Consulting  
Co., Inc., Paul Tramontana and John Does 1-5, John Doe Corporations 1-5 and John Doe Companies 1-5,  
Defendants.

LIBERTY HELICOPTERS, INC., Liberty Helicopters, Inc. (NY), Meridan Consulting Co., Inc., and Paul  
Tramontana, Third-Party Plaintiffs,

v.

BANK OF AMERICA, N.A., Bank of America Corporation, Banc of America Investment Services, Inc., Merrill  
Lynch, Pierce, Fenner & Smith, Incorporated, Linda B. Williams, Elizabeth Ortiz, Alexander Gershkovich and  
Constructive Ideas, Ltd., and Lawrence Horan, as Guardian of the Person and Property of Jeffrey Horan,  
Incapacitated Person, Third-Party Defendants.

No. 110711-2003.  
January 12, 2015.

**Decision/Order**

Hon. [George J. Silver](#), Judge.

\*1 Recitation, as required by [CPLR § 2219](#) [a], of the papers considered in the review of this motion:

Papers.....	Numbered
Notice of Motion, Affirmation & Exhibits Annexed.....	1, 2, 3
Notice of Cross-Motion, Affirmation & Exhibits Annexed, Affirmation in Support of Cross-Motion, Memorandum of Law .....	4, 5, 6, 7, 8
Reply and Affirmation in Opposition to Cross-Motion & Exhibits Annexed .	9
Reply Memorandum of Law in Support of Cross-Motion & Reply Affirmation.....	10, 11

In this action for personal injuries, including alleged traumatic brain injuries, arising out of a helicopter crash, plaintiffs Drew Doshier and Jeffrey Horan (plaintiffs) move for an order precluding defendants' expert from denying at trial the general



acceptance and reliability of diffuse tensor imaging (DTI) performed on plaintiffs and from denying the existence of non-hemorrhagic brain white-matter lesions. Defendants' expert witness disclosure states that defendants' expert is expected to testify that DTI has not been recognized as a reliable technique to be utilized on individual patients due to the lack of any standardized and generally accepted methods for acquiring, analyzing and interpreting DTI data. Defendants cross-move for an order precluding the admission at trial the results of the DTI tests performed on plaintiffs and precluding any of plaintiffs expert witnesses from testifying regarding those results.

In support of the motion, plaintiffs counsel contends that DTI is a refinement of brain MRI that visualizes abnormalities in the connections between brain cells, also known as white brain matter. Plaintiffs contend that DTI has been found to be scientifically reliable in numerous judicial proceedings and therefore this court can take judicial notice of the reliability of the procedure without conducting a *Frye* inquiry. Plaintiffs also argue that DTI's reliability has been repeatedly affirm in various scientific and medical journals. With respect to the existence of non-hemorrhagic brain white-matter lesions, plaintiffs contend that defendants' expert's opinion that the pattern of white matter abnormalities on plaintiff Horan's MRI are not consistent with a traumatic brain injury because there is no evidence of micro-hemorrhages should be precluded because it is medically and scientifically incorrect.

\*2 In support of the cross-motion, defendants contend that DTI is not generally accepted within the medical community as a method of diagnosing traumatic brain injuries. Specifically, defendants argue that because there is no Court of Appeals or Appellate Division case law resolving the question of whether DTI is generally accepted in the medical community and because defendants' expert has opined that DTI is not generally accepted in the medical or radiological community to diagnose traumatic brain injury in individual clinical cases, the admission of plaintiffs' DTI results should be precluded. Defendants also contend that the scientific articles relied upon by plaintiffs do not establish that DTI testing is a generally accepted method for diagnosing traumatic brain injury.

New York courts, applying the *Frye* test (see *Frye v United States*, 293 F 1013, 54 App DC 46, [1923]), permit expert testimony based on scientific principles, procedures, or theories only after the principles, procedures, or theories have gained general acceptance in the relevant scientific field (see *People v Wesley*, 83 NY2d 417, 422, 633 NE2d 451, 611 NYS2d 97 [1994]). Under the *Frye* test, the burden of proving general acceptance rests upon the party offering the disputed expert testimony (see *Del Maestro v Grecco*, 16 AD3d 364, 791 NYS2d 139 [2005]; *Saulpaugh v Krafte*, 5 AD3d 934, 935, 774 NYS2d 194 [2004]; *Lara v New York City Health & Hosps. Corp.*, 305 AD2d 106, 757 NYS2d 740 [2003]).

The scientific articles submitted by plaintiffs, coupled with the fact that numerous courts in various jurisdictions, as well as in this state, have admitted DTI results in evidence, establish that there is general acceptance of DTI in the medical community as a means of diagnosing traumatic brain injury (see generally *People v Whitaker*, 289 AD2d 84 [1st Dept 2001]).

The question of whether defendants' expert's opinion regarding the existence of non-hemorrhagic brain white-matter lesions is medically correct is best explored on cross-examination by plaintiffs' counsel. Accordingly, it is hereby

ORDERED that plaintiffs' motion to preclude is granted, in part, in accordance with the foregoing; and it is further

ORDERED that defendants' cross-motion to preclude is denied; and it is further

ORDERED that the parties are to appear for a status conference on February 6, 2015 at 9:30 a.m. in room 422 of the courthouse located at 60 Centre Street, New York, New York 10007.

\*3 Dated: January 12, 2015

New York, County

<<signature>>

George J. Silver, J.S.C.



Slip Copy, 8 Misc.3d 1001(A), 2005 WL 1364515 (N.Y.Sup.), 2005 N.Y. Slip Op. 50882(U)  
**(Table, Text in WESTLAW), Unreported Disposition**  
**(Cite as: 2005 WL 1364515 (N.Y.Sup.))**

**H**

NOTE: THIS OPINION WILL NOT APPEAR IN A PRINTED VOLUME. THE DISPOSITION WILL APPEAR IN A REPORTER TABLE.

Supreme Court, New York County, New York.  
 Salvatore LAMASA and Ana G. Lamasa, Plaintiffs,

v.

John K. BACHMAN, Defendant.

No. 129996/93.

April 13, 2005.

**MARTIN SHULMAN, J.**

\*1 Defendant, John K. Bachman (“defendant” or “Bachman”), moves for an order seeking the following relief in relation to a jury verdict rendered on June 7, 2004 [FN1](#).

[FN1](#). Normally, a motion to challenge a jury verdict pursuant to CPLR § 4404(a) is governed by the 15-day time limit of CPLR § 4405. This Court permitted the parties to stipulate to extend their time to present written arguments. *See*, “(CPLR 2004; see, 4 Weinstein–Korn–Miller, N.Y. Civ Prac para. 4405.05) ...” [Brown v. Two Exchange Plaza Partners, 146 A.D.2d 129, 539 N.Y.S.2d 889 \(1st Dept., 1989\)](#).

1) dismissing the complaint; 2) setting aside the jury verdict as against the weight of the evidence (CPLR § 4404[a] ); 3) alternatively, seeking remittitur; 4) seeking defense costs and fees as against the plaintiffs, Salvatore LaMasa and Ana G. LaMasa (where appropriate: “plaintiff”, “Salvatore” or “plaintiffs”) in connection with plaintiffs' counsel's “withdrawal of his proffer of PET and QEEG evidence following the ruling of the Court precluding said evidence during the trial and for costs in connection with plaintiff's egregious discovery abuses.” Plaintiffs oppose the motion and cross-move

a) Past pain and suffering	\$240,000
b) Future pain and suffering	\$400,000 (over 20 years)
c) Past Lost Earnings	\$460,713
d) Future lost earnings	\$774,892 (over 13 years)
e) Past medical expenses	\$ 40,768

for additur.

The motion and cross-motion are consolidated for disposition.

Salvatore initiated what had become a protracted action against the defendant in November, 1993 for injuries he purportedly sustained as the driver of the stationary, front vehicle Bachman rear-ended during the early morning hours of November 25, 1992 at the intersection of Delancey and Clinton Streets just prior to entering the Williamsburg Bridge (the “Collision”). After being marked off the calendar at least three times, this matter was restored to the trial calendar and thereafter transferred to the New York County Civil Court on November 10, 1999 (see, [CPLR § 325\[d\]](#) ). After languishing for four years, the parties appeared at several pre-trial conferences and the case was eventually referred to the Supervising Judge of that court. [FN2](#)

[FN2](#). Due to the confusing procedural posture of the case and an inordinate number of complex *in limine* motions/issues as well as the potential value of the case (based upon a prima facie showing), the parties' counsel concurred that the matter should be re-transferred to the Supreme Court and this Court agreed to preside over the jury trial.

Jury selection began on May 4, 2004 and the trial ended on June 7, 2004. As noted on the Jury Verdict Sheet (Exhibit A to Bachman Motion), five out of the six members of the jury reached an agreement and preliminarily reported that defendant's negligence in causing the rear-end collision was a substantial factor in causing Salvatore's injuries. The same five members of the jury further reported that as a result of the Collision, plaintiff suffered a serious injury under the No-Fault Law, [Insurance Law § 5102\(d\)](#) (see, Jury Question Nos.: 1A–1C). Salvatore was then awarded the following damages:

Slip Copy, 8 Misc.3d 1001(A), 2005 WL 1364515 (N.Y.Sup.), 2005 N.Y. Slip Op. 50882(U)  
**(Table, Text in WESTLAW), Unreported Disposition**  
**(Cite as: 2005 WL 1364515 (N.Y.Sup.))**

f) Future Medical expenses	\$ 95,040 (over 20 years)
g) Past loss of medical insurance	\$ 38,985
h) Future loss of medical insurance	\$ 95,840 (over 13 years)
i) Future loss of social security	\$122,273 (over 7 years)

The jury also awarded Salvatore's spouse, Ana La-Masa, \$250,000 for past loss of services (on her derivative claim for loss of consortium) and awarded an identical sum for future loss of services (the latter to cover a period of 20 years).

It should be readily apparent that both parties had a full and fair opportunity to argue and brief the court (where necessary) and make their record, *inter alia*, concerning their respective *in limine* motions, evidentiary issues and procedural and substantive trial issues (e.g., the proper jury charges, verdict interrogatories, etc.). While this Court granted Bachman's counsel leave to make this post-verdict motion, nonetheless, to avoid any redundancy, this Court expressed an unwillingness to entertain any application addressing the liability issues and/or the varied evidentiary rulings made prior to and during the jury trial. However, this Court stated it would consider whether the jury awards were excessive and unreasonable ([CPLR § 5501](#)[c] ). Still, defendant took advantage of his right to move under CPLR § 4404(a) and “re-argued” almost every one his overruled objections and denied motions duly made on the record during the course of the trial and duly preserved for a potential appeal. In its post-verdict motion, defendant's counsel argues that: Salvatore's proof of injuries never met the statutory threshold to constitute a serious injury (i.e., no loss of consciousness and no complaints of pain and/or other physical or cognitive disabilities at the time of the Collision made to the police or his late brother-in-law, no loss of ambulation, no emergency room or hospital admission at the time of the Collision, no initial complaints of headaches, depression and/or anxiety at or close in time to the Collision, a normal neurological examination seven weeks post-Collision, no evidence of either temporary or permanent [traumatic brain injury](#) (“TBI”) at or close in time to the Collision and no objective findings of injuries to Salvatore's neck and back); plaintiff's proof was insufficient to show a causal connection between the Collision and Salvatore's alleged injuries (*viz.*, all of plaintiff's experts failed to opine on causation and any and all purported positive findings of TBI, [post-traumatic stress disorder](#) [“PTSD”] and neck and back injuries were reported years after the collision by medical experts retained by plaintiffs' counsel solely for trial); and plaintiffs' discovery abuses warranted

the extreme sanction of dismissal of the plaintiffs' complaint.

\*2 Defendant's post-verdict motion further took issue with various court rulings he deemed erroneous such as permitting plaintiff's expert neuroradiologist, Dr. Michael Lipton, to testify with respect to an innovative MRI modality utilizing [Diffusion Tensor Imaging](#) (“DTI”) <sup>FN3</sup> as this modality is not generally accepted in the field of radiology or neuroradiology to diagnose TBI or [diffuse axonal injury](#); precluding defendant's expert neurologist from testifying concerning Evoked Potential testing <sup>FN4</sup> which plaintiff argued was not addressed in defendant's expert witness disclosure notice; granting plaintiff a directed verdict on the issue of negligence; overruling certain objections to references about insurance made by various plaintiffs' witnesses; denying defendant's request for a missing witness charge with respect to various witnesses such as Dr. Wiseman (pain management specialist who treated Salvatore), Dr Leo J. Shea III (psychologist who treated Salvatore) and Mariusz Ziejewski, Ph.D. (accident reconstruction engineer); granting plaintiffs' counsel's application to modify certain no-fault interrogatories on the verdict sheet to eliminate the phrase, “[a]s a result of the accident” but otherwise accurately reciting the text of these no-fault questions in accordance with [PJI 2:88E, 2:88F](#) and [2:88G](#); and granting plaintiffs' counsel application to amend certain damages questions on the verdict sheet after completion of instructions to the jury to include a claim for loss of past and future medical insurance and future loss of social security benefits (or payments) and furnishing the jury with a supplementary charge with respect thereto.

<sup>FN3</sup>. DTI is an imaging technique used to study the random motion of hydrogen atoms within water molecules in biological tissue (e.g., brain white matter) and spatially map this diffusion of water molecules, *in vivo*. DTI provides anatomical information about tissue structure and composition. Changes in these tissue properties can often be correlated with processes that occur, among other causes, as a result of disease and trauma.

<sup>FN4</sup>. Evoked Potentials sometimes called

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evoked responses are tests that record the brain's responses to sound, touch and light. These tests help to evaluate a number of neurological conditions.

After the foregoing challenges, Bachman's motion then raises the issue of remittitur urging the court to either set aside or reduce the jury awards for past lost earnings (\$460,713) and future lost earnings (\$774,892) <sup>FN5</sup>, reduce the jury award for past medical expenses from \$40,780 to \$25,000, set aside the jury award for past and future medical insurance as being duplicative, set aside the jury award for future loss of social security retirement benefits as being totally speculative or alternatively reduce the \$122,273 award to \$80,700 and reduce the jury awards for loss of past and future services to Ana LaMasa from \$500,000 to \$50,000.

<sup>FN5</sup>. Specifically, defendant contends that Salvatore's pre-accident employment history reflects a patchwork of short-term jobs, that plaintiff's most recent employment before the accident at Ogden Allied was only for two and a half years, that Salvatore intended to leave Ogden Allied to become a Con Edison meter reader rendering plaintiff's expert economist's projections and calculations uncertain and speculative, that the calculation of the past and future lost earnings on an annualized basis erroneously utilized an increase rate of 3.5% rather than the union contract increase rate, that the economist failed to consider plaintiff's pre-accident health condition (i.e., scoliosis and degenerative disc disease), that the jury ignored testimonial evidence proffered by Dr. Remling, Salvatore's treating chiropractor, to the effect that plaintiff could return to work at a less demanding job or seek part time work, and that plaintiff's expert recognized that the rate of increase for future lost earnings could have been 3.5% rather than 4.5% justifying a reduction of this award by approximately \$50,000 or \$60,000.

Finally, due to plaintiff's purportedly frivolous efforts to seek the admission of QEEG <sup>FN6</sup> and PET scan <sup>FN7</sup> evidence, Bachman should be awarded attorney's fees pursuant to [22 NYCRR § 130-1.1](#) as well as defense expert witness expenses totaling approximately \$50,000.

<sup>FN6</sup>. EEG is the recording of electrical patterns at the scalp's surface showing cortical electrical activity or brain waves. This recording is called

an electroencephalograph, commonly referred to as an EEG. As a diagnostic tool, Quantitative EEG or QEEG provides a digital recording of the EEG which is apparently utilized to perform a comparative analysis of many EEG tracings of a patient suffering from brain disease or trauma against a normative data base of EEG tracings.

<sup>FN7</sup>. Positron Emission Tomography ("PET") is a medical imaging technique which scans a body's chemistry and function to detect cancer, Alzheimer's and other medical conditions.

Plaintiff's cross-motion seeks additur and through the following arguments tells a different story:

Testimonial and documentary evidence presented before the jury preponderated in favor of Salvatore establishing that he suffered serious injury ([Insurance Law § 5102](#)) including, but not limited to, neck and back injury, TBI <sup>FN8</sup>, [post-traumatic stress disorder](#) ("PTSD" <sup>FN9</sup>) and a non-permanent, medically determined injury, viz., non-performance of customary and daily activities for 90 of 180 days after the Collision. Each of these conditions standing alone, plaintiffs argue, would satisfy the statutory serious injury threshold;

<sup>FN8</sup>. Plaintiffs contend that treating specialists Dr. Lewis Weiner (Salvatore's treating neurologist), Dr. Steven Stein (neuropsychologist), Dr. Daniel Kuhn (Salvatore's treating psychiatrist) and Dr. Joshua Greenspan (pain management specialist), Dr. Rachel Yehuda (neuroendocrinologist/psychologist) and experts Dr. Nils Varney (neuropsychologist) and Dr. Lipton jointly and severally opined that LaMasa suffered TBI as a result of the Collision. Their findings, impressions and conclusions, counsel argues, were based on hundreds of clinical examinations performed and duly reported, treatment regimens (i.e. series of drug treatments administered for over 12 years, all proven unsuccessful), medical-ly accepted batteries of neuropsychological tests, MRI and/or DTI studies (the latter imaging studies revealed anatomical damage such as frontal lobe, hippocampus and para hippocampal atrophy and hemocitarin residue [from internal bleeding] consistent with frontal lobe injury).

<sup>FN9</sup>. Plaintiffs similarly contend that the severity of Salvatore's PTSD defies text book analysis.

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Salvatore's counsel, drawing from Dr. Yehuda's testimony, starkly captures a singular feature of what this specialist diagnosed as one her worse cases of this disorder: "[A]s a result of the immense psychological barriers inflicted by his PTSD, LaMasa remains psychologically frozen in time. He really has no present or future, since his PTSD holds him captive in a perpetual state of fear and terror, stuck in the moments surrounding the [Collision] ..." (Flomenhaft Aff. In support of Cross-Motion at ¶ 37 paraphrasing from the Yehuda trial transcript at pp. 16 and 42-45).

\*3 Unrefuted testimonial and documentary evidence presented before the jury established that as a result of the Collision, Salvatore suffered, and continues to suffer, from [panic disorder](#), severe depression accompanied by [suicidal ideation](#) and bouts of violence, electrical [dysfunction of the brain](#), [epilepsy](#), chronic severe headaches, sleep cycle disorder/insomnia <sup>FN10</sup>;

<sup>FN10</sup>. Studies done at Mt. Sinai Medical Center Sleep Laboratory revealed "abysmally abnormal qualities in Salvatore's sleep cycles and sleep oxygenation." (Flomenhaft Aff. in support of Cross-Motion at ¶ 32).

Defendant unnecessarily reiterates his objections to the many discovery issues fully argued and briefed prior to and during the trial, which the court ruled upon on the record <sup>FN11</sup> and requires no serious rebuttal. Moreover, defendant conveniently overlooked his counsel's own discovery "abuses" during the course of the trial;

<sup>FN11</sup>. To illustrate, plaintiff's counsel acknowledged defendant's understandable concern about the "eleventh hour" proffer of Grahme Fisher, an accident reconstruction specialist. Exercising its discretion to ameliorate any perceived prejudice and surprise, this Court afforded defendant's counsel ample opportunity to depose Mr. Fisher during the course of the trial and obtain all relevant data he relied upon to not only conduct effective cross-examination, but also to furnish an appropriate defense to the effect that the Collision was low-impact in nature and incapable of causing the mixed bag of injuries Salvatore claims to have suffered therefrom. In this context, plaintiffs' counsel retorted that the court ruling precluding defendant's neurologist from testi-

fying about Evoked Potentials testing was proper because the relevant [CPLR § 3101\(d\)](#) notice made no mention of this subject for testimony.

References to the word, "insurance", during the testimony of some of plaintiffs' witnesses were benign in context and non-prejudicial as most of the references to insurance were made in the context of discussing the payment of plaintiff's medical bills and did not warrant a mistrial;

This Court correctly granted plaintiffs a directed verdict on the issue of negligence, correctly denied defendant's request for a missing witness charge, vis-a-vis, Drs. Weissman, Shea and Ziejewski; correctly permitted the semantic changes to the no-fault interrogatories eliminating the introductory phrase, "[a]s a result of the accident", while retaining the text of each question in accordance with the PJI. After determining if plaintiff suffered a serious injury by responding affirmatively to the three no-fault questions, the jury properly determined the issue of causation by answering Question No.2, namely, "Was the collision involving the plaintiff and defendant a substantial factor in causing any of the injuries alleged by plaintiff?" (Exhibit A to Bachman Motion at p. 2)

Contrary to defendant's confusing assertions, the jury awards for past and future medical insurance costs were not duplicative of the awards for medical expenses, but rather awards for loss of income, that is to say, the replacement costs of health insurance Salvatore ostensibly would have to purchase in lieu of free union health care coverage he would have otherwise received had he continued working at Ogden Allied (Exhibit B-4 to Bachman Motion; Leiken trial transcript at pp. 24-30) <sup>FN12</sup>;

<sup>FN12</sup>. In explaining his calculation of this loss, the expert economist determined an annualized cost of health insurance for an individual to be \$5000 from 1995 (after the Collision, Salvatore's union continued to provide him with health insurance coverage for a few years) through age 65 and factored in an annual 6% increase thereto for a total cost of \$134,796 (past medical insurance cost of \$38,985 and future medical insurance cost of \$95,840).

Dr. Leiken similarly projected the loss of social security retirement benefits as an additional component of lost income to be \$170,000 (see, Exhibit B-4 to Bachman

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motion at pp. 26–30) and the jury further reduced this sum to \$122,273 over a seven year period. Defendant's counsel blurs this item of income loss with Bachman's right to pursue adjustments of the judgment at a post-verdict collateral source hearing;

Without proffering any economist to refute Dr. Leiken's assumptions, calculations and projections on behalf of plaintiffs, defendant's challenges to the past and future lost earnings awards rest on a selective and skewed analysis of the testimony, expert and other [FN13](#), thus, the jury awards were fair and reasonable;

[FN13](#). Counsel contends it was reasonable for Dr. Leiken to assume that LaMasa would have remained at Ogden Allied, because the Con Edison position, if taken, would have been in addition to his porter work at New York University. Counsel further argues that LaMasa's work history reflected plaintiff's ongoing desire to work regularly, that no part time work was available after the Collision and that even assuming some incremental improvement of his neck and back through chiropractic treatment, LaMasa still suffered from TBI and its concomitant psychiatric problems rendering him disabled from the time of the Collision.

\*4 Plaintiffs agree that the past medical expense award should be reduced from \$40,768 to \$25,000 based upon the evidence of record; and

The aggregate award of \$500,000 to Ana LaMasa for loss of services was fair and reasonable based upon her credible testimony (Mrs. LaMasa had to replace Salvatore as the head of the household raising their two sons and constantly had to care for her husband since the Collision and must continue to do so for the rest of his life).

Counsel's cross-motion further addressed the mean-spirited nature of defendant requesting costs referable to the potential proffer of testimony concerning QEEG and PET testing performed on Salvatore finding said request to be without merit as a matter of law.

Finally, plaintiffs seek additur to increase the total awards for past and future pain and suffering from \$640,000 to an appropriate seven-figure number. Counsel finds support from appellate case law involving similarly situated plaintiffs who suffered from TBI and [PTSD](#).

(Flomenhaft Aff. in support of Cross-Motion at pp. 34–41).

In reply, defendant's counsel factually distinguishes the case law plaintiffs rely upon for additur, reiterates her objection to the trial testimony of Salvatore's treating specialists questioning the value of their testimony due to purported gaps in time and in treatment (i.e., Dr. Greenspan did not see Salvatore until eleven years after the Collision, etc), and reiterates defendant's position as to the lack of record evidence of causation and serious injury. For ease of reference, defendant's counsel prepared a chart as part of his “wherefore” relief. Bachman therefore seeks an order vacating the jury award *in toto* and granting a new trial or, alternatively, reducing plaintiff's total lost earnings award to \$60,000, reducing plaintiff's past medical expenses award to \$25,000, reducing plaintiff's total past and future loss of medical insurance costs award to \$0, reducing plaintiff's future loss of social security benefits award to \$80,700 and reducing Ana LaMasa's total loss of services award to \$50,000.

#### *Discussion*

Preliminarily, this Court grants the unopposed branch of defendant's motion reducing the past medical expense award from \$40,768 to \$25,000.

Having otherwise carefully reviewed the relevant portions of the trial transcript furnished by the parties, this Court finds the jury verdict is supported by sufficient evidence as a matter of law. Stated differently, the verdict is not utterly irrational and there was sufficient evidence to raise issues of fact (i.e., causation and serious injury) for the jury to resolve. [Garricks v. City of New York, 1 NY3d 22, 769 N.Y.S.2d 152 \(2003\)](#). Further, there were valid lines of reasoning and permissible inferences for the jury to draw upon that would lead these rational jurors to reach their conclusions based upon the testimonial and other admitted evidence presented at trial and decide the triable issue of whether Salvatore suffered serious injury causally related to the Collision. [Cohen v. Hallmark Cards, Inc., 45 N.Y.2d 493, 410 N.Y.S.2d 282 \(1978\)](#). This ample trial record does not justify a judgment notwithstanding the verdict dismissing the complaint without re-submission of the action to another jury.

\*5 Having found sufficient evidence in the trial record to support the verdict, this Court must then inquire as to whether the conflicting medical and other expert testimonial evidence presented by the parties and which resulted in “a verdict for the plaintiff[s] ... so preponder-

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ate[d] in favor of the defendant that [the verdict] could not have been reached on any fair interpretation of the evidence ...” [Moffat v. Moffatt](#), 86 A.D.2d 864, 447 N.Y.S.2d 313 (2nd Dept., 1982) and quoted with approval with bracketed matter added in [Lolik et al., v. Big v. Supermarkets, Inc.](#), 86 N.Y.2d 744, 631 N.Y.S.2d 122 (1995). In conducting a factual inquiry of the trial record, this Court further finds no basis to set aside the verdict as against the weight of the evidence and direct a new trial.

The facts of the Collision are essentially undisputed, i.e., a rear-end collision of a stationary vehicle waiting for a light change which occurred on a wet roadway. And the issue of Bachman's negligence was resolved as a matter of law in favor of Salvatore when this Court granted plaintiffs' application for a directed verdict on the question of negligence.

This Court digresses to discuss the merits of that branch of Bachman's post-verdict motion rearguing his opposition to plaintiffs' application for a directed verdict on this issue. Bachman again makes reference to a pre-trial decision and order of the Hon. Joan A. Madden issued January 13, 1998 (Exhibit C to Bachman Motion) which denied plaintiffs' motion for summary judgment finding defendant's purported negligence to be a triable issue of fact. For reasons fully stated on the record at the close of the entire case and prior to summations, this Court made it clear that Justice Madden's decision and order did not mandate that the jury decide the issue of Bachman's negligence. It must be emphasized that “[a] denial of a motion for summary judgment is not necessarily *res judicata* or the law of the case that there is an issue of fact in the case that will be established at trial ...” [Sackman-Gilliland Corporation v. Senator Holding Corp.](#), 43 A.D.2d 948, 351 N.Y.S.2d 733 (2nd Dept., 1974). Further, the “proof offered to defeat a motion for summary judgment does not meet the standard of proof required to resolve an issue of fact at trial ...” [Cushman & Wakefield, Inc., v. 214 East 49th Street Corp.](#), 218 A.D.2d 464, 468, 639 N.Y.S.2d 1012, 1015 (1st Dept., 1996). Bachman's testimony and other supporting evidence in his defense neither included any non-negligent explanation for the Collision nor rebutted the presumption of negligence under all of the circumstances underlying the Collision. Defendant's excuse that the roadway was wet preventing him from stopping sufficiently in time to avoid the impact was wholly unavailing. [Mitchell v. Gonzalez](#), 269 A.D.2d 250, 703 N.Y.S.2d 124 (1st Dept., 2000). Thus, plaintiffs were not foreclosed from obtaining a directed verdict on the issue of negligence. See, [Gubala v.](#)

[Gee](#), 302 A.D.2d 911, 754 N.Y.S.2d 504 (4th Dept., 2003).

\*6 As to the issues of causation and the precise physical injuries Salvatore suffered from as a result of the Collision, the parties had numerous expert witnesses testifying and “in considering the conflicting testimony by the parties' respective expert witnesses, the jury was not required to accept one expert's testimony over that of another, but was entitled to accept or reject either expert's position in whole or in part ...” [Mejia v. JMM Audubon, Inc.](#), 1 AD3d 261, 767 N.Y.S.2d 427 (1st Dept., 2003). To reiterate, the verdict as to the Collision being a substantial factor in causing Salvatore “serious injury” as defined under the [Insurance Law § 5102\(d\)](#) was not against the weight of the evidence and will not be disturbed.<sup>FN14</sup>

<sup>FN14</sup> In answering Question # 2 on the verdict sheet (Exhibit A to Bachman Motion), the jury deliberated on the precise issue of causation and the wording of the question made it clear that it had to determine whether the Collision was a substantial factor in causing *any* of Salvatore's injuries. The Jury's answers to Questions 1A, 1B and 1C determined the no-fault threshold issue of whether Salvatore's injuries constituted a “serious injury”. This Court does not find that the deletion of the phrase, “[a]s a result of the accident”, from these three threshold questions prejudiced defendant in any way or ran afoul of the applicable “serious injury” PJI charges underlying these jury questions. In short, the jury squarely disposed of the separate and discrete issues of causation and serious injury under the no-fault statute.

Defendant's disguised reargument of certain *in limine* motions this Court denied and which defendant perceives, if granted, would have otherwise either resulted in a judgment of dismissal notwithstanding the verdict or its vacatur and a directive to conduct a new jury trial is without merit.

As to defendant's charge of discovery abuses <sup>FN15</sup>, it is essentially admitted that raw EEG epochs contained in the treatment records of Dr. Kuhn were belatedly turned over and similar records of Dr. Weiner were purportedly destroyed in the ordinary course of that physician's business. Yet, this Court ruled that Dr. Weiner could not testify about any alleged objective findings of TBI noted on such EEG data. As noted in the trial transcript, defendant



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was able to have an expert witness, Dr. Marc Nuwer, testify concerning Dr. Kuhn's data at trial, who offered a contrary interpretation of such data and, for that matter, a contrary opinion concerning the collision not being a competent producing cause of Salvatore's deteriorating physical condition. Defendant's motion stridently argues about the severe prejudice in belatedly receiving the respective [CPLR § 3101\(d\)](#) notices and reports/data of plaintiff's experts in the fields of neuropsychology (Nils Varney, Ph.D.), sleep medicine (Dr. Stasia Wieber) and accident reconstruction/engineering (Grahme Fisher, P.E.).

[FN15](#). Defendant claims plaintiff failed to produce and/or timely produce raw EEG data from certain treating physicians and laboratories, failed to produce neuropsychological testing records from psychologists and untimely served expert witness notices reflecting changes in the theory of Salvatore's case (i.e., mild TBI changed to "moderate to severe" TBI and a low speed collision changed to a moderate to high speed collision).

Nonetheless, this Court afforded defendant sufficient time and opportunity prior to, and during, the trial to review such notices, reports and data and consult with and produce their own expert witnesses in these respective fields for purposes of mounting an appropriate defense; all borne out by the extensive trial record. Moreover, this Court issued rulings which tailored certain of the plaintiffs' expert witnesses' testimony after considering certain defense arguments.[FN16](#)

[FN16](#). In written communications to this Court after the motion and cross-motion became *sub judice*, Plaintiff's counsel urged this Court to resolve an issue concerning the unanticipated costs plaintiffs incurred in obtaining the printout of raw data EEG data of Salvatore taken at the New York University School of Medicine, Department of Psychiatry as well as Dr. Wieber's raw sleep study data collected at Mt. Sinai School of Medicine which were ordered to be produced and turned over to defendant prior to and during the course of the trial. Consistent with this Court's discussions with respective counsel on this matter, this Court directs that these costs incurred in this data production should be shared by the parties.

Counsel has also reargued certain adverse rulings concerning the merits of defendant's *in limine* motions to preclude due to plaintiffs' failure to timely turn over and/or not turn over records of Dr. Leo J. Shea (neuropsychologist-treatment records), Dr. Charles Wetli (pathologist), Dr. Kenneth Alper (neurologist—QEEG records),

Dr. Monte Buchsbaum (psychiatry—[PET scan](#) data). Neither the potential testimony of these witnesses nor their records, reports and data were proffered during the course of the trial based on this Court's rulings and/or other considerations. Revisiting these issues again appears to be pointless. All of defendant's remaining challenges to this Court's rulings on the admission of evidence and/or at the formal charge conference are without merit and require no additional discussion.[FN17](#)

[FN17](#). However, one example should suffice. The mere mention of the word, "insurance", during the course of testimony and the context of how insurance was discussed was not prejudicial to defendant. No testimony was elicited which publicly noted that Bachman had liability insurance and the resources to satisfy any potential judgment. In this vein, this well-educated jury evidently could not have lost sight of the fact that Bachman was represented by two prominent law firms from New York and Washington D.C. with no less than three attorneys at the defense table each day of trial. Since Bachman was a retired airline pilot, the jury had ample reason to speculate where the source of funds for the enormous defense costs of this lengthy trial was coming from even if no witness ever mentioned the word insurance.

\*7 In continuing the requisite analysis as to the correctness of the verdict, [CPLR § 5501\(c\)](#) states, in relevant part:

In reviewing a money judgment in an action in which an itemized verdict is required in which it is contended that the award is ... inadequate and that a new trial should have been granted unless a stipulation is entered to a different award, the appellate division shall determine that an award is ... inadequate if it deviates materially from what would be reasonable compensation.

Trial courts may also apply this material deviation standard in overturning jury awards but should exercise

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its discretion sparingly in doing so. [Shurgan v. Tedesco](#), 179 A.D.2d 805, 578 N.Y.S.2d 658 (2nd Dept., 1992); [Prunty v. YMCA of Lockport](#), 206 A.D.2d 911, 616 N.Y.S.2d 117 (4th Dept., 1994); see also, [Donlon v. City of New York](#), 284 A.D.2d 13, 727 N.Y.S.2d 94 (1st Dept., 2001) (implicitly approving the application of this standard at the trial level). For guidance, a trial court will typically turn to prior verdicts approved in similar cases, but must undertake this review and analysis with caution not to rigidly adhere to precedents (because fact patterns and injuries in cases are never identical) and/or substitute the court's judgment for that of the jurors whose primary function is to assess damages. *Po Yee So v. Wing Tat Realty, Inc.*, 259 A.D.2d 373, 374, 687 N.Y.S.2d 99, 101 (1st Dept., 1999).

With the exception of the conceded reduction for past medical expenses, this Court finds that the jury were able to assess the severity of Salvatore's physical injuries, his physical and mental disorders, his historic and current treatment therefor and his poor prognosis. Accordingly, the pain and suffering and medical expenses awards did not deviate materially from what would be reasonable compensation under the circumstances. [Barrowman v. Niagara Mohawk Power Corp.](#), 252 A.D.2d 946, 675 N.Y.S.2d 734 (4th Dept., 1998). Thus, the branches of Bachman's post-verdict motion for remittitur and plaintiffs' cross-motion for additur as to these awards are respectively denied.

Plaintiffs' expert's *per se* calculations of Salvatore's past loss of earnings (\$460,713) and future loss of earnings (\$774,892) were essentially unchallenged. Plaintiff had sufficient job continuity as a porter for Dr. Leiken to properly rely on Salvatore's 1992 annualized salary of \$32,380 and it was perfectly reasonable for this economist to utilize a conservative rate of interest of 3.5% set by the U.S. Department of Labor to calculate annual salary increases (after 25 years, the U.S. Department of Labor set an increase rate of 4.5% which Dr. Leiken utilized for the year 2005 and going forward) to compute these losses. Bachman submitted no evidence of negotiated union contracts covering Salvatore's job title which contained annual salary increases which were lower than the percentage increases Dr. Leiken relied upon for his calculations. All of defendant's challenges to the loss of earnings awards are meritless and unsupported by trial evidence (e.g., Salvatore would have left his job as a porter to become a full-time Con Edison meter reader, etc.). In short, the expert's reliance on certain facts as well as certain fair and reasonable assumptions and his calculations based thereon

are fully supported by the extensive trial record. [Diaz v. West 197th Street Realty Corp.](#), 290 A.D.2d 310, 736 N.Y.S.2d 361 (1st Dept., 2002).

\*8 Concerning the jury's awards to Ana LaMasa for loss of services, the trial record amply established that since the Collision in 1992 and during the ensuing years, Salvatore's physical and mental condition precipitously declined and Ms. LaMasa was forced to assume his familial duties in addition to her own and to provide for her family's financial welfare. The jury has had the opportunity to assess her trial testimony and the corroborating testimony of her children as to the diminished quality of her life with Salvatore. And as borne out by expert testimony, Ana LaMasa must continue to spend the rest of her life providing "24/7" care to a spouse with, *inter alia*, severe psychiatric/psychological disorders, a role which renders her a "captiv[e][to] her marital responsibilities ..." (Flomenhaft Aff. in support of Cross-Motion at ¶ 94). Therefore, the \$500,000 total award to Ana LaMasa for loss of services similarly does not deviate from what would be reasonable compensation under her circumstances. *Cf.*, [Dooknah v. Thompson](#), 249 A.D.2d 260, 670 N.Y.S.2d 919 (2nd Dept., 1998).

In addition, the cost of medical insurance is a component of lost income and in Salvatore's case constituted a "soft dollar" benefit he had been receiving under his union contract and potentially would have been receiving had he continued working as a porter until age 65. The costs for obtaining medical insurance coverage and unreimbursed medical expenses are clearly not one and the same (see, [Schlachet v. Schlachet](#), 176 A.D.2d 198, 574 N.Y.S.2d 320 [1st Dept., 1991]). Accordingly, the expert's calculation of medical insurance costs were fair and reasonable and the jury awards based thereon do not constitute a double recovery for past and future medical expenses.

As noted earlier, Bachman took issue with this Court's somewhat novel ruling to amend the verdict sheet to add two additional categories of damages for past and future loss of medical insurance and future loss of social security benefits as components of lost earnings/income. Plaintiffs' counsel's request for this change was made immediately after summations and completion of the jury charge and just prior to deliberations. While conceding this amendment was unorthodox, nonetheless, Bachman has failed to show how the amendment to the verdict sheet prejudiced defendant's substantive and due process rights. First, defendant did not proffer his own expert

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economist to take issue with any of Dr. Leiken's testimony and particularly the calculations of these components of lost income. Second, defendant's counsel's closing argument did not even address any deficiencies, vis-a-vis, Dr. Leiken's trial testimony including his calculation of the past and future loss of earnings and their sub-categories. It cannot be said that Bachman's counsel relied on the pre-amendment version of the jury verdict sheet to structure his summation and therefore had been prejudiced by the inclusion of these new sub-categories of loss of earning damages on the verdict sheet ultimately introduced to, and considered by, the jury with additional jury instructions. Finally, defendant has neither shown that this verdict sheet amendment violated any trial rule or procedure nor constituted an abuse of this Court's discretion.<sup>FN18</sup>

<sup>FN18</sup>. Unlike the sub-category of loss of medical insurance, defendant's counsel apparently recognized some merit to the jury award for loss of social security benefits when, in the alternative, counsel requested the court to reduce this award from \$122,273 to \$80,700. (Murphy Aff. at ¶ 98 annexed to Bachman Motion).

\*9 To conclude this discussion, it is necessary to address defendant's requests for costs and attorneys' fees in mounting a vigorous defense opposing the potential admissibility of expert testimony about QEEG and [PET scan](#) studies plaintiff was relying upon to corroborate Salvatore's TBI caused by the Collision. While this Court ruled that the QEEG and [PET scan](#) studies did not meet the *Frye* standard to warrant their admission and granted Bachman's *in limine* motions to preclude such testimony with respect thereto, plaintiffs' counsel's trial strategy to proffer such data as evidence of TBI in low to moderate impact collisions was not beyond the pale and certainly not frivolous. Nor can QEEG and PET data be viewed as junk science. In addition, counsel's withdrawal of certain expert witnesses who would otherwise have testified utilizing QEEG and PET studies was directly due to this Court's bench colloquy and rulings on the record. Parenthetically, defendant's counsel overlooks the fact that this Court conducted a *Frye* inquiry relying on dueling expert affidavits and respective supporting scientific literature as well as dueling affirmations and memoranda of law; all without the need for either party to incur the exorbitant cost of producing experts for a formal *Frye* hearing. While this Court concluded expert testimony relying on these tests did not meet the *Frye* standard at this time; still, these tests and related research are "works in pro-

gress" as to their potential, broad-based applications in the diagnosis and treatment of disease. Thus, there is simply no legal/factual basis to invoke any [22 NYCRR § 130-1.1](#) sanction against plaintiffs and their counsel for attempting to proffer evidence of Salvatore's TBI utilizing QEEG and PET studies to support their case.

For the foregoing reasons, this Court grants the unopposed branch of defendant's post-verdict motion reducing the award for past medical expenses from \$40,768 to \$25,000. In all other respects, the remaining branches of defendant's motion and plaintiffs' cross-motion are respectively denied. Plaintiffs shall submit a proposed money judgment, on notice, for signature consistent with this Court's Decision and Order. This constitutes the Decision and Order of this Court. Courtesy copies of same have been provided to counsel for the parties.

N.Y.Sup.,2005.  
 Lamasa v. Bachman  
 Slip Copy, 8 Misc.3d 1001(A), 2005 WL 1364515  
 (N.Y.Sup.), 2005 N.Y. Slip Op. 50882(U)

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(Cite as: **89 A.D.3d 42, 929 N.Y.S.2d 264**)



Supreme Court, Appellate Division, Second Department, New York.

Jacob LUGO, etc., et al., appellants,  
v.

NEW YORK CITY HEALTH AND HOSPITALS  
CORPORATION, etc., respondent.

Sept. 13, 2011.

**Background:** After concluding that infant plaintiff's and his mother's expert testimony regarding causation was inadmissible, the Supreme Court, Kings County, [Allen Hurkin-Torres, J.](#), granted defendant hospital's motion for summary judgment dismissing the medical malpractice complaint based on hospital's alleged failure to timely diagnose and treat the hypoglycemia of both newborn patient and his mother, and plaintiffs appealed.

**Holdings:** The Supreme Court, Appellate Division, [Covello, J.](#), held that:

(1) patient's experts demonstrated that their theory of causation was reasonably permitted by a synthesis of the medical literature, and  
(2) genuine issue of material fact existed as to whether patient's brain damage was caused by his episode of neonatal hypoglycemia.

Reversed.

West Headnotes

**[1] Evidence 157** **555.2**

[157 Evidence](#)

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

[157k555](#) Basis of Opinion

[157k555.2](#) k. Necessity and sufficiency.

[Most Cited Cases](#)

Expert testimony based on scientific principles or procedures is admissible but only after a principle or procedure has gained general acceptance in its

specified field.

**[2] Evidence 157** **555.2**

[157 Evidence](#)

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

[157k555](#) Basis of Opinion

[157k555.2](#) k. Necessity and sufficiency.

[Most Cited Cases](#)

[Frye](#) decision governing admissibility of expert opinion testimony is not concerned with the reliability of a certain expert's conclusions, but instead with whether the expert's deductions are based on principles that are sufficiently established to have gained general acceptance as reliable; limited purpose of the [Frye](#) test is to ascertain whether the expert's conclusion is based upon accepted scientific principles, rather than simply the expert's own unsupported beliefs.

**[3] Evidence 157** **555.5**

[157 Evidence](#)

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

[157k555](#) Basis of Opinion

[157k555.5](#) k. Cause and effect. [Most](#)

[Cited Cases](#)

It is not necessary that the underlying support for an expert's theory of causation consist of cases or studies considering circumstances exactly parallel to those under consideration in the litigation; it is sufficient if a synthesis of various studies or cases reasonably permits the conclusion reached by the plaintiff's expert; fact that there is no textual authority directly on point to support the expert's opinion is relevant only to the weight to be given the testimony, but does not preclude its admissibility.

**[4] Evidence 157** **555.10**

[157 Evidence](#)

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

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[157k555](#) Basis of Opinion

[157k555.10](#) k. Medical testimony. [Most](#)

[Cited Cases](#)

### **Evidence 157** **556**

[157](#) Evidence

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

[157k556](#) k. References to authorities on subject. [Most Cited Cases](#)

In medical malpractice action based on allegations that hospital's failure to timely diagnose and treat the hypoglycemia of both newborn patient and his mother caused patient's brain damage and cerebral palsy, patient's experts demonstrated that their theory of causation was reasonably permitted by a synthesis of the medical literature; although none of the articles, read in isolation, provided conclusive support for the theory of causation, when considered in the aggregate for the limited purpose of applying the *Frye* test, and against the backdrop of the undisputed generally accepted principles concerning hypoglycemia set forth at the hearing, those articles established that the theory was properly based upon far more than theoretical speculation or a scientific "hunch," and the absence of medical literature directly on point with the circumstances of patient's case pertained to the weight to be given to the opinion testimony, but did not preclude its admissibility.

### **[5] Evidence 157** **555.5**

[157](#) Evidence

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

[157k555](#) Basis of Opinion

[157k555.5](#) k. Cause and effect. [Most](#)

[Cited Cases](#)

### **Evidence 157** **556**

[157](#) Evidence

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

[157k556](#) k. References to authorities on subject. [Most Cited Cases](#)

When *Frye* test is applied to an expert's theory of

causation, court's concern must be limited to making sure that within the scientific field in question, there is a substantive, demonstrable, objective basis for the expert's conclusion, and that the focus of the inquiry in such an instance should not be upon how widespread the theory's acceptance is, but should instead consider whether a reasonable quantum of legitimate support exists in the literature for the expert's views; purpose of the *Frye* test is not to preclude expert opinion testimony based upon reasonable extrapolations from conceded legitimate empirical data.

### **[6] Evidence 157** **555.2**

[157](#) Evidence

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

[157k555](#) Basis of Opinion

[157k555.2](#) k. Necessity and sufficiency.

[Most Cited Cases](#)

*Frye* inquiry into reliability of expert opinion is separate and distinct from the admissibility question applied to all evidence, whether there is a proper foundation, to determine whether the accepted methods were appropriately employed in a particular case; focus moves from the general reliability concerns of *Frye* to the specific reliability of the procedures followed to generate the evidence proffered and whether they establish a foundation for the reception of the evidence at trial.

### **[7] Evidence 157** **555.10**

[157](#) Evidence

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

[157k555](#) Basis of Opinion

[157k555.10](#) k. Medical testimony. [Most](#)

[Cited Cases](#)

### **Evidence 157** **556**

[157](#) Evidence

[157XII](#) Opinion Evidence

[157XII\(D\)](#) Examination of Experts

[157k556](#) k. References to authorities on subject. [Most Cited Cases](#)

Patient's experts proffered sufficient foundational

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evidence to support the admissibility of their testimony concerning their theory of causation in medical malpractice trial; experts made specific reference to the contents of numerous articles documenting brain MRI abnormalities in patients who had experienced hypoglycemia to support their opinion that there was a causal connection between patient's episode of hypoglycemia and the brain abnormalities later observed on his MRI film.

## **[8] Judgment 228** **181(33)**

### 228 Judgment

228V On Motion or Summary Proceeding

228k181 Grounds for Summary Judgment

228k181(15) Particular Cases

228k181(33) k. Tort cases in general.

### Most Cited Cases

(Formerly 170Ak2515)

Genuine issue of material fact existed as to whether patient's brain damage was caused by his episode of neonatal hypoglycemia, precluding summary judgment in favor of hospital on patient's medical malpractice claim based on hospital's failure to timely diagnose and treat the hypoglycemia of both newborn patient and his mother.

**\*\*266** Fitzgerald & Fitzgerald, P.C., Yonkers, N.Y. (John E. Fitzgerald, John M. Daly, Eugene S.R. Pagano, Mitchell L. Gittin, and John R. Langdell of counsel), for appellants.

Michael A. Cardozo, Corporation Counsel, New York, N.Y. (Edward F.X. Hart and Jane L. Gordon of counsel), for respondent.

REINALDO E. RIVERA, J.P., JOSEPH COVELLO, ANITA R. FLORIO, and PLUMMER E. LOTT, JJ.

COVELLO, J.

### **\*43** Introduction

New York courts apply the rule of Frye v. United States, 293 F. 1013 that expert testimony based on scientific principles **\*44** or procedures is admissible, but only after a principle or procedure has gained general acceptance in its specified field. In this medical malpractice action, the principal question presented on this appeal is whether the Supreme Court, in applying the Frye test, properly determined that the

opinion testimony of the plaintiffs' experts that the infant plaintiff's brain injuries were caused by an episode of severe neonatal hypoglycemia lasting 81 minutes was inadmissible. For the reasons set forth below, we answer this question in the negative.

### *Factual and Procedural Background*

#### *Factual Background*

In 2001, the plaintiff Brenda Almodovar (hereinafter the mother), who was pregnant with the infant plaintiff, Jacob Lugo, began receiving prenatal care at Woodhull Hospital (hereinafter Woodhull), a facility owned and operated by the defendant. On August 11, 2001, at 31 weeks of gestation, the mother was admitted to Woodhull for signs of preterm labor. During that admission, her blood glucose level was measured at 26 mg/dL, an abnormally low level, but was subsequently measured at a normal **\*\*267** level. The mother was discharged on August 13, 2001.

On September 2, 2001, at 34 weeks of gestation, the mother, who had a history of seizures dating back to childhood, was brought to Woodhull by emergency medical services (hereinafter EMS) personnel after experiencing a grand mal seizure. On that date, she was evaluated but not admitted.

On October 5, 2001, the mother gave birth to Lugo at Woodhull by normal spontaneous vaginal delivery at 11:39 A.M. Lugo's Apgar scores, 9 at one minute, and 9 at five minutes, were "excellent," and he initially appeared normal. However, by the time Lugo was 40 minutes old, he was experiencing tremors and, at 12:25 P.M., he was admitted to the neonatal intensive care unit.

According to the deposition testimony of Dr. Frantz Brea, the director of neonatology at Woodhull, tremors are a sign of hypoglycemia <sup>FNI</sup> in a newborn. At 12:25 P.M., when Lugo was admitted to the neonatal intensive care unit, his blood glucose level was measured, through a "heel stick" test, at less than 20 mg/dL, and laboratory testing of blood drawn from Lugo at that time later measured a glucose level of 3 mg/dL. According to Dr. Brea, a normal glucose level for an infant approximately 40 minutes old is about 40 mg/dL. Lugo was given a "glucose IV push" and a glucose infusion, and at 1:00 P.M., his blood glucose **\*45** level was measured at 71 mg/dL, within normal

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limits. Thereafter, Lugo's blood glucose level remained within normal limits until he was discharged from Woodhull on October 7, 2001.

[FN1](#). Hypoglycemia means low blood sugar.

In 2002, Lugo was referred to Woodhull for evaluation due to his delays in reaching certain developmental milestones. On April 29, 2003, Lugo underwent a brain [magnetic resonance imaging](#) (hereinafter MRI) examination at Brookdale Hospital, and the resulting MRI report set forth a finding of “non-specific white matter loss in parietal and occipital lobes with dilation of the occipital horn ... which suggests [periventricular leukomalacia](#), as can be seen with perinatal ischemia.” [FN2](#) Ultimately, Lugo was diagnosed with [cerebral palsy](#) ([spastic diplegia](#) type).

[FN2](#). According to expert testimony presented in this matter, perinatal ischemia-in the context of the instant action-is a decrease in the flow of blood and/or oxygen to the brain of a fetus.

#### *Commencement of this Action*

Lugo, by his mother, and the mother, suing derivatively, commenced this action, inter alia, to recover damages for medical malpractice. In their verified bill of particulars, the plaintiffs alleged that the defendant had departed from good and accepted medical practice by, among other things, failing to timely diagnose and treat the [hypoglycemia](#) of both the mother and Lugo. They alleged that Lugo's [hypoglycemia](#) had caused, among other things, his brain damage and [cerebral palsy](#).

#### *The Defendant's Motion for Summary Judgment or a Frye Hearing*

By notice of motion dated May 15, 2007, the defendant moved for summary judgment dismissing the complaint or, in the alternative, for a [Frye](#) hearing in the event that the plaintiffs, in opposition to the motion, proffered a sworn statement from an expert opining that Lugo's injuries were caused by the “possible transient episode” of maternal [hypoglycemia](#) on August 11, 2001, or the “transient episode” of [hypoglycemia](#) on October 5, 2001. As relevant here, the defendant supported its motion with the expert affirmation of Dr. Armando Grassi, who opined that Lugo's **\*\*268** episode of [neonatal hypoglycemia](#) did not cause his alleged injuries. According to Dr.

Grassi, the white matter loss shown on Lugo's April 2003 MRI was in the periventricular area and was a typical lesion resulting from a decrease in oxygenation or perfusion to the brain. In contrast, he affirmed, lesions typical of [hypoglycemia](#) are “diffuse lesions” in the brain and are not found in the periventricular area. Dr. Grassi opined that Lugo's [brain injury](#), as depicted on his MRI, was a result of decreased oxygenation to his brain at 32–34 weeks gestation, and was not caused by the “transient hypoglycemic episode” at his birth. Dr. Grassi asserted that it was not accepted in the **\*46** medical profession that “a short and promptly treated” episode of [hypoglycemia](#) in a newborn could cause brain damage in the periventricular area, as seen on Lugo's MRI film, and that Dr. Grassi had “never heard or read of a single case of [periventricular leukomalacia](#) caused by [hypoglycemia](#).”

In opposition, the plaintiffs argued, inter alia, that summary judgment was improper because there were triable issues of fact concerning, among other things, the nature and cause of Lugo's [periventricular leukomalacia](#) (hereinafter PVL) and [cerebral palsy](#). As relevant here, they submitted the expert affirmation of Dr. Rosario Trifiletti. Dr. Trifiletti opined that Lugo had been born with “profound [hypoglycemia](#),” and that the delay in diagnosis and treatment from 11:39 A.M. to 1:00 P.M. was a substantial factor in causing his brain damage. Dr. Trifiletti disagreed with Dr. Grassi's conclusion that the mother's seizure had caused Lugo's [brain injuries](#). According to Dr. Trifiletti, Lugo's normal appearance and good Apgar scores at birth, and the delay of the onset of his tremors until approximately 40 minutes after birth, were consistent with depletion of glucose stores after birth rather than a primary hypoxic injury. Dr. Trifiletti characterized Lugo's post-birth tremors as “subtle seizures” as defined in Volpe's Neurology of the Newborn (hereinafter the Volpe textbook), and he opined that Lugo's “tremors” or “subtle seizures” had been caused by his profound [hypoglycemia](#) at birth.

In Dr. Trifiletti's opinion, Lugo's MRI report was “essentially accurate” in its finding of PVL about the posterior (occipital) horns of the lateral ventricles, and he disagreed with Dr. Grassi's assertion that the pattern of injury it depicted was not characteristic of lesions caused by [hypoglycemia](#). Dr. Trifiletti affirmed that there is “substantial overlap” in the lesions resulting from [hypoxia](#) and from hypoglycemic

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injury. Citing Arie L. Alkalay, *et al.*, [Brain Imaging Findings in Neonatal Hypoglycemia: Case Report and Review of 23 Cases](#), 44 Clin Pediatr 783–790 (2005), an article published in the November/December 2005 edition of the journal Clinical Pediatrics, Dr. Trifiletti asserted that there was a tendency towards occipital injury (as was seen in Lugo's case) with [hypoglycemia](#). He saw nothing on Lugo's MRI film that excluded [hypoglycemia](#) as the etiology of the “obvious white matter loss and occipital horn dilation” and, in his experience of reviewing brain MRIs as part of his clinical practice over the years, he had seen “similar patterns of [brain injury](#) in comparable instances of perinatal [hypoglycemia](#).”

\*47 In its reply papers, the defendant proffered the expert affirmation of Dr. Steven Pavlakis. Dr. Pavlakis affirmed, among other things, that after performing a search on “Pub Med,” he found no evidence that the white matter damage seen on Lugo's MRI film could be caused by “short lived transient [hypoglycemia](#),” and that it was not generally accepted that a period of transient [neonatal hypoglycemia](#) such as that suffered by Lugo could cause \*\*269 his clinical outcome. Dr. Pavlakis disagreed with Dr. Trifiletti's opinion that Lugo had suffered from “subtle seizures” as defined in the Volpe textbook, and he asserted that the Alkalay article cited by Dr. Trifiletti did not discuss any patients who had experienced an episode of [hypoglycemia](#) similar to that experienced by Lugo.

In an order dated November 5, 2007, the Supreme Court granted that branch of the defendant's motion which was for a [Frye](#) hearing and held in abeyance that branch of the defendant's motion which was for summary judgment dismissing the complaint. The Supreme Court determined that the plaintiffs' experts had provided “scant reference” to medical or scientific literature to support their opinions, and that a [Frye](#) hearing should be held to determine whether their deductions were based on principles which were sufficiently established to have gained general acceptance.

#### *The Frye Hearing*

After additional motion practice not at issue on this appeal, the Supreme Court conducted a [Frye](#) hearing in April and May 2009. The first expert to testify for the plaintiffs was Dr. Michael Katz, a private practitioner who was board-certified in pediatric

neurology and neurodevelopmental disabilities. As background, Dr. Katz testified that the normal blood glucose range for newborns is between 40 and 60 mg/dL, that a level below 40 mg/dL is considered [hypoglycemia](#), that Lugo's measured blood glucose level of 3 mg/dL was “[p]rofoundly low,” and that [hypoglycemia](#) is a medical emergency which must be treated immediately because it is a toxic state which causes brain damage. Dr. Katz's working hypothesis was that Lugo's blood glucose level was 3 mg/dL from 11:39 A.M., when he was born, until 1:00 P.M., when his blood sugar was normalized. In Dr. Katz's opinion, Lugo's [brain injury](#) was caused by this episode of [hypoglycemia](#).

Dr. Katz testified that his opinion that an episode of [hypoglycemia](#) at a level of 3 mg/dL lasting 1 hour and 21 minutes could cause neurologic damage of the type sustained by Lugo was \*48 based on the following generally accepted scientific principles: (1) [hypoglycemia](#) causes [brain injury](#); (2) certain infants are more susceptible than others to neurologic injury secondary to [hypoglycemia](#); (3) [hypoglycemia](#) is a toxic and dangerous state; and (4) there is no safe level of [hypoglycemia](#). Dr. Katz testified that his opinion that [hypoglycemia](#) caused Lugo's [brain injury](#) was based on the fact that Lugo's MRI film showed a [brain injury](#), that Lugo had suffered from a period of proven and profound [hypoglycemia](#), and that there appeared to be nothing else in the record or around the time of Lugo's birth suggesting that anything besides [hypoglycemia](#) caused Lugo's injury. Dr. Katz did not believe that the mother's seizure at 34 weeks of gestation had injured Lugo in the nature of a hypoxic ischemic event resulting in brain MRI abnormalities because Dr. Katz had difficulty visualizing a mechanism by which a seizure during pregnancy could cause a decrease in blood flow in the infant's brain.

Dr. Katz addressed, at length, the medical literature upon which his theory of causation was based. He noted that the Volpe textbook indicated that [hypoglycemia](#) causes [brain injury](#) and brain damage. In addition, the Volpe textbook discussed neuropathic studies indicating that [hypoglycemia](#) is a precedent of PVL and that both perinatal ischemia and [hypoglycemia](#) could cause an identical [brain injury](#): namely, PVL. Dr. Katz explained that PVL is an injury to the white brain matter in the distribution around the ventricles.



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**\*\*270** Next, Dr. Katz discussed Arie L. Alkalay, *et al.*, *Plasma Glucose Concentrations in Profound Neonatal Hypoglycemia*, 45 Clin Pediatr 550 (2006), an article published in the July 2006 edition of the journal Clinical Pediatrics (hereinafter the Alkalay article). He explained that the authors had compiled 16 different studies in an attempt to define low thresholds of plasma glucose concentrations constituting treatable or profound [hypoglycemia](#), and they had concluded that plasma glucose levels of less than 25 mg/dL of several hours' duration may increase the relative risk for adverse neurologic outcome. Dr. Katz testified that a plasma glucose level is essentially the same as a whole blood glucose level, and that a plasma glucose level of 25 mg/dL is “much higher” than a whole blood glucose level of 3 mg/dL.

Dr. Katz acknowledged that one of the studies reviewed in the Alkalay article, Anne Kinnala, *et al.*, *Cerebral Magnetic Resonance Imaging and Ultrasonography Findings After \*49 Neonatal Hypoglycemia*, 103 Pediatrics 724–729 (1999) (hereinafter the Kinnala article), published in the April 1999 edition of the journal Pediatrics, had excluded infants who had experienced only one episode of [hypoglycemia](#) before six hours of age. However, he did not believe that this fact affected the overall conclusion of the Alkalay article, which had examined 15 other studies besides the Kinnala article. Dr. Katz noted that the Kinnala article included a patient who had shown evidence of neurologic injury on an MRI after experiencing a hypoglycemic episode lasting two hours where the lowest glucose level was 32 mg/dL, a level “dramatically” higher than Lugo's glucose level of 3 mg/dL.

Finally, Dr. Katz discussed Burns, *et al.*, *Patterns of Cerebral Injury and Neurodevelopmental Outcomes After Symptomatic Neonatal Hypoglycemia*, 122 Pediatrics 65 (2008) (hereinafter the Burns article), an article published in the journal Pediatrics in 2008. He explained that the authors had studied 35 term infants and had attempted to limit their study to symptomatic neonatal hypoglycemic patients, meaning those who had suffered from tremors, and to exclude [brain injuries](#) from other causes such as [hypoxic ischemic encephalopathy](#). Sixty-three percent of the patients studied in the Burns article had experienced only one episode of [hypoglycemia](#) which had resolved promptly with treatment, and 94% of all of

the patients studied had shown evidence of MRI abnormalities. The article also examined neurodevelopmental outcomes and determined that six of the subjects had developed [cerebral palsy](#) and three had developed mild motor delays.

Dr. Katz acknowledged that it was “unclear” exactly what duration and level of [hypoglycemia](#) causes neurologic injury in humans, and that there was no specific article, report, or study stating, in unambiguous terms, that an episode of [hypoglycemia](#) lasting 1 hour and 21 minutes at a level of 3 mg/dL had caused, or could cause, neonatal [brain injury](#). However, he testified that there was not a “whole lot” of medical literature on [hypoglycemia](#) because “it is really an impossible task to prospectively look at [hypoglycemia](#) in children.” Dr. Katz also acknowledged that there are a number of potential causes of PVL in addition to [hypoglycemia](#), including hypoxic ischemia, and that it was possible that Lugo had sustained his injury during the mother's seizure and been asymptomatic at the time of birth. Dr. Katz stressed, however, that Lugo had been symptomatic for [hypoglycemia](#), that Lugo's MRI results were consistent with **\*50**[hypoglycemia](#), that the medical literature indicates that low blood sugar causes brain damage, and that his opinion was based on **\*\*271** the “confluence” of the medical information he had discussed.

Dr. Robert Peyster, the chief of neuroradiology at Stony Brook University Medical Center, also testified for the plaintiffs. Dr. Peyster explained that PVL is not a specific term, but, rather, refers to damage to the deep white brain matter next to the ventricles that appears as an abnormality on a [CT scan](#) or an MRI, and that PVL can be caused by both [hypoglycemia](#) and perinatal [asphyxia](#). At the hearing, Dr. Peyster reviewed Lugo's MRI films in detail and testified that they depicted PVL. Based on Lugo's measured profound [hypoglycemia](#) and high Apgar scores, Dr. Peyster opined that the cause of Lugo's PVL was his episode of [hypoglycemia](#) and not perinatal [asphyxia](#). Although he acknowledged that a seizure during pregnancy could potentially be severe enough to damage the brain of a fetus by reducing blood flow across the placenta, he was unaware of any reported cases where a child who had experienced such an event had received normal Apgar scores at birth.

Like Dr. Katz, Dr. Peyster addressed relevant medical literature at length. He agreed with Dr. Katz

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that the Volpe textbook supported the position that [hypoglycemia](#) leads to PVL. Dr. Peyster testified that the Burns article was significant because it was the largest series to date addressing MRI findings and other issues in [neonatal hypoglycemia](#), because it had excluded patients who might have had hypoxic ischemia, and because 94% of the patients had shown white matter abnormalities on their MRI brain scans. He considered the Burns article to be a “good paper” and the best available article addressing generalized principles regarding [hypoglycemia](#) and injuries to infants. However, Dr. Peyster conceded that the Burns article had not been designed to test the relationship between the severity or duration of [hypoglycemia](#) and neurodevelopmental outcomes and had not found any such relationship, and that the subjects studied in the Burns article had received MRI brain scans at a much earlier age than Lugo had.

Dr. Peyster acknowledged that he had not located any articles or reports specifically addressing a patient who had experienced an episode of [hypoglycemia](#) of the same level and duration as Lugo's episode, but he testified that this fact did not change his opinion that Lugo's injuries were caused by [hypoglycemia](#) because the literature he had reviewed had studied cases representing a wide range of duration times, Lugo had PVL, and \*51 Lugo's glucose level had been measured at close to zero. Dr. Peyster testified that there was no threshold of duration and severity, generally accepted by most physicians, below which [hypoglycemia](#) could *not* cause abnormalities like those seen on Lugo's MRI.

After the plaintiffs' experts testified, the defendant presented the testimony of Dr. Caren Jahre, a private practitioner and an assistant professor of radiology at New York University School of Medicine. Dr. Jahre testified that Lugo's MRI films depicted a “classic pattern” of PVL seen in the context of [hypoxic encephalopathy](#) or perinatal ischemia at 26 to 34 weeks of gestation, and that the literature she had reviewed did not associate this specific pattern with [neonatal hypoglycemia](#). According to Dr. Jahre, medical literature indicated that the “hallmark” of brain damage resulting from [hypoglycemia](#) is cortical involvement, and some of that literature reported white matter damage caused by [hypoglycemia](#) either “out in the periphery” or against the ventricles, but limited to certain areas. In contrast, according to Dr. Jahre, the brain damage on Lugo's MRI film had a diffuse pat-

tern tracking \*\*272 along the ventricles and no cortical involvement. However, she acknowledged that she and Dr. Peyster disagreed on the precise appearance of the pattern depicted on Lugo's MRI film.

In Dr. Jahre's opinion, the Burns article was flawed because, based upon the medical records of the patients it had studied, the authors had failed to exclude patients who had suffered from health issues other than [neonatal hypoglycemia](#), including [hypoxic ischemic encephalopathy](#). Additionally, according to Dr. Jahre, none of the MRI images in any of the literature discussed at the *Frye* hearing looked “anything close to what [Lugo's] brain looks like.”

The defendant also presented the testimony of Dr. Steven Pavlakis, a professor of neurology and pediatrics at Mt. Sinai School of Medicine and the director of pediatric neurology at Maimonides Hospital. Dr. Pavlakis had performed a search and had found no literature on MRI changes resulting from [hypoglycemia](#) in newborns lasting less than two hours. He agreed that [hypoglycemia](#) can cause MRI abnormalities, that severe [hypoglycemia](#) can cause brain damage, and that Lugo's measured glucose level of 3 mg/dL was very low. In addition, he acknowledged that the scientific community does not recognize any specific level or duration of [hypoglycemia](#) which would *not* cause brain damage and that it was a generally accepted medical principle that individual susceptibility to toxic states varies.

\*52 According to Dr. Pavlakis, it was “relatively common” for newborns to have [hypoglycemia](#), low blood sugar was a common cause of tremors such as those experienced by Lugo, and such tremors were distinguishable from seizures and did not correlate to an underlying condition or particular outcome. Based on Lugo's normal appearance at birth and recovery with sugar infusions, Dr. Pavlakis did not believe that his episode of [hypoglycemia](#) had caused his brain damage. Dr. Pavlakis also excluded [hypoglycemia](#) as a cause of Lugo's injuries because “there's no case like him” of which Dr. Pavlakis was aware in the literature or in his practice.

According to Dr. Pavlakis, decreased oxygen or blood flow to a fetus between the ages of 28 to 40 weeks is the cause of PVL in “99.99 percent” of cases. He testified that PVL could be caused by anything that decreases oxygen or blood supply to a fetus un-

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der 40 weeks of gestation, including, hypothetically, a seizure like the one experienced by the mother. However, like the plaintiffs' expert Dr. Katz, Dr. Pavlakis was unaware of any instance in which such a seizure had actually resulted in PVL, and he could not opine, to a reasonable degree of medical certainty, that Lugo's PVL had been caused by the mother's seizure.

When asked whether the positions taken in the Burns article were “generally accepted in the scientific community,” Dr. Pavlakis responded by asserting that Lugo was not like the patients in the Burns article, who had “a lot of other issues going on,” and had not experienced a short episode of [hypoglycemia](#) lasting even 1 1/2 hours. Like Dr. Jahre, Dr. Pavlakis testified that the Burns article had not been entirely successful in selecting a group of patients suffering purely from [hypoglycemia](#), but he opined that the authors had done a good job of setting up their study and that he was not sure if a better study was possible.

Dr. Pavlakis testified that the medical literature discussed at the hearing, when considered in the aggregate, did not demonstrate that a child like Lugo who had a glucose level of 3 mg/dL for 1 hour and 21 minutes would develop PVL as a result, since none of the patients discussed in the **\*\*273** literature had experienced a relatively short period of [hypoglycemia](#) before being discharged from the hospital without further problems. Therefore, according to Dr. Pavlakis, the theory of causation offered by the plaintiffs' experts was not scientifically accepted.

A running theme throughout the [Frye](#) hearing was whether the experts considered the medical literature they had reviewed **\*53** to be “authoritative.” Although both Dr. Katz and Dr. Peyster testified that they did not consider any of the literature they had discussed to be “authoritative,” Dr. Katz testified that the Volpe textbook and the articles he had addressed were the sources he would consult for the current science in the areas discussed at the hearing. Dr. Peyster testified that he did not consider *any* medical literature, including his own book, to be “authoritative” because that term implied that everything in the article or study was correct and was not subject to any further changes. Dr. Peyster's reluctance to apply this label to medical literature was echoed by the defendant's expert Dr. Jahre, who agreed that this term

was not used frequently to describe medical literature and that doctors relied upon articles not considered to be “authoritative” to assess the state of the science.

#### *The Order and the Judgment Dismissing the Complaint*

In an order entered December 15, 2009, the Supreme Court granted that branch of the defendant's motion which was for summary judgment dismissing the complaint after concluding that the plaintiffs' expert testimony regarding causation was inadmissible. In the order, the Supreme Court framed the issues to be resolved as: (1) whether the scientific community generally accepts that a short episode of [hypoglycemia](#) can cause PVL such as that shown on Lugo's MRI; and (2) whether the plaintiffs' experts could reasonably opine that Lugo's episode of [hypoglycemia](#) actually caused his injury. With respect to the first issue, the Supreme Court concluded that the plaintiffs had failed to demonstrate that it is generally accepted that [hypoglycemia](#) can cause PVL “as suffered by [Lugo].” In arriving at this determination, the Court highlighted the testimony of the defendant's experts that the patients studied in the Burns article could have suffered from [hypoxic ischemic encephalopathy](#), and noted that the Volpe textbook stated that the topography of injuries associated with PVL differed “somewhat” from that observed with hypoxic ischemic injury. In addition, the Supreme Court concluded that Dr. Peyster's inability to label any of the medical literature he had reviewed as authoritative ran “counter” to a conclusion that the findings set forth therein were generally accepted in the scientific community.

With respect to the second issue, the Supreme Court asserted that “even if it were generally accepted that a hypoglycemic episode could cause [PVL], [the] plaintiff[s]' evidence fails to demonstrate a factual issue as to whether the hypoglycemic **\*54** episode suffered by [Lugo] caused his [brain injury](#).” Addressing the factors Dr. Katz cited in support of his conclusion that Lugo's episode of [hypoglycemia](#) caused his injury, the Supreme Court concluded that, based on the testimony of the plaintiffs' experts, although Lugo's MRI did not exclude [hypoglycemia](#) as the cause of his injury, it also did not rule out other possible causes, such as [hypoxia](#) or ischemia. In addition, the Supreme Court concluded that nothing in the plaintiffs' evidence “address[ed]” Dr. Pavlakis's testimony that [hypoxia](#) and/or ischemia are the predom-

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inant causes of PVL. The Supreme Court noted that none of the articles relied upon by the plaintiffs' experts addressed an episode\*\*274 of [hypoglycemia](#) lasting 1 hour and 21 minutes, like that suffered by Lugo, and that Dr. Katz had conceded that the question of what duration and severity of blood glucose levels caused neurologic injury in humans is unclear. The Supreme Court acknowledged that, according to the Volpe textbook, the presence of seizures is a major indicator that an episode of [hypoglycemia](#) will result in [neurological damage](#), but it rejected the assertion of the plaintiff's expert Dr. Trifiletti, set forth in his affirmation, that Lugo's post-birth tremors were consistent with subtle seizures as defined in the Volpe textbook, and that the seizures or tremors constituted evidence that the [hypoglycemia](#) caused [neurological damage](#).

Addressing Dr. Katz's testimony that it was generally accepted that susceptibility to [brain injury](#) at a certain blood sugar level varies from individual to individual, the Supreme Court determined that Dr. Katz had provided "no indication" that Lugo was particularly susceptible to suffering such an injury from [hypoglycemia](#). Additionally, the Supreme Court reasoned that although Dr. Katz testified that [hypoglycemia](#) is a toxic state that requires treatment regardless of the duration or blood sugar level, that testimony was inadequate to demonstrate causation in this matter. Finally, in response to Dr. Katz's testimony that there were no other possible causes of Lugo's injury, the Supreme Court noted Dr. Katz's concession that there were other possible causes of PVL, and that it was possible for Lugo to have been born with normal Apgar scores if the injury occurred in utero.

Based on the foregoing analysis, the Supreme Court concluded that the plaintiffs' experts had failed to demonstrate a foundation for their opinion that Lugo's episode of [hypoglycemia](#) caused his injury "in light of the evidence that perinatal ischemia or [hypoxia](#) is the overwhelming cause of [PVL]."

\*55 "At best, even if [the] plaintiff[s]' experts have raised the possibility that [hypoglycemia](#) caused his injury, their testimony fails to sufficiently rule out other more likely possible causes, such as perinatal ischemia or [hypoxia](#). It cannot be said, therefore, that [Lugo's] injury was, more likely than not, caused by the episode of [hypoglycemia](#)."

Thus, the Supreme Court reasoned that a jury verdict in favor of the plaintiffs would be "nothing more than speculation and guesswork," and the defendant was entitled to summary judgment dismissing the complaint because the plaintiffs had failed to raise a triable issue of fact regarding causation.

In a judgment entered February 1, 2010, upon the foregoing order, the Supreme Court dismissed the complaint. For the reasons that follow, we reverse the judgment.

### *Discussion*

#### *The Frye Test*

[1] In determining the admissibility of expert testimony, New York follows the rule of [Frye v. United States](#), 293 F. 1013 "that expert testimony based on scientific principles or procedures is admissible but only after a principle or procedure has 'gained general acceptance' in its specified field" ([People v. Wesley](#), 83 N.Y.2d 417, 422, 611 N.Y.S.2d 97, 633 N.E.2d 451, quoting [Frye v. United States](#), 293 F. at 1014; see [People v. Wernick](#), 89 N.Y.2d 111, 115, 651 N.Y.S.2d 392, 674 N.E.2d 322; [Lipschitz v. Stein](#), 65 A.D.3d 573, 575, 884 N.Y.S.2d 442; [Nonnon v. City of New York](#), 32 A.D.3d 91, 101, 819 N.Y.S.2d 705, *affd. on other grounds* 9 N.Y.3d 825, 842 N.Y.S.2d 756, 874 N.E.2d 720; [Zito v. Zabarsky](#), 28 A.D.3d 42, 44, 812 N.Y.S.2d 535; see also \*\*275 [Giordano v. Market Am., Inc.](#), 15 N.Y.3d 590, 601, 915 N.Y.S.2d 884, 941 N.E.2d 727). In [Frye](#), the United States Court of Appeals for the District of Columbia Circuit concluded that expert testimony as to the results of a "systolic blood pressure deception test" was inadmissible because the test had not yet gained general acceptance and scientific recognition among physiological and psychological authorities ([Frye v. United States](#), 293 F. at 1014). In so concluding, the [Frye](#) court articulated the following holding concerning expert opinion testimony based upon deductive reasoning:

"Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony de-

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duced from a \*56 well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs” (*id.*).

[2] In accordance with this holding, a *Frye* inquiry is directed at the basis for the expert's opinion and does not examine whether the expert's conclusion is sound. “*Frye* is not concerned with the reliability of a certain expert's conclusions, but instead with ‘whether the experts' deductions are based on principles that are sufficiently established to have gained general acceptance as reliable’ ” (*Nonnon v. City of New York*, 32 A.D.3d at 103, 819 N.Y.S.2d 705, quoting *Marsh v. Smyth*, 12 A.D.3d 307, 308, 785 N.Y.S.2d 440; see *Lipschitz v. Stein*, 65 A.D.3d at 576, 884 N.Y.S.2d 442; *Alston v. Sunharbor Manor, LLC*, 48 A.D.3d 600, 602, 854 N.Y.S.2d 402; *DieJoia v. Gacioch*, 42 A.D.3d 977, 979, 839 N.Y.S.2d 904; see also *Ellis v. Eng*, 70 A.D.3d 887, 892, 895 N.Y.S.2d 462). Put another way, “[t]he court's job is not to decide who is right and who is wrong, but rather to decide whether or not there is sufficient scientific support for the expert's theory” (*Gallegos v. Elite Model Mgt. Corp.*, 195 Misc.2d 223, 225, 758 N.Y.S.2d 777). “[G]eneral acceptance does not necessarily mean that a majority of the scientists involved subscribe to the conclusion. Rather it means that those espousing the theory or opinion have followed generally accepted scientific principles and methodology in evaluating clinical data to reach their conclusions’ ” (*Zito v. Zabarsky*, 28 A.D.3d at 44, 812 N.Y.S.2d 535, quoting *Beck v. Warner-Lambert Co.*, 2002 N.Y. Slip Op. 40431[U], \*6–7, 2002 WL 31107923).

Thus, the limited purpose of the *Frye* test is to ascertain whether the expert's conclusion is based upon accepted scientific principles, rather than simply the expert's own unsupported beliefs (see *DieJoia v. Gacioch*, 42 A.D.3d at 980, 839 N.Y.S.2d 904; *Zito v. Zabarsky*, 28 A.D.3d at 46, 812 N.Y.S.2d 535; see also *Rowe v. Fisher*, 82 A.D.3d 490, 491, 918 N.Y.S.2d 342). As Justice Catterson of the Appellate Division, First Department, stated in his concurrence in *Styles v. General Motors Corp.*, 20 A.D.3d 338, 799 N.Y.S.2d 38, “[t]he *Frye* ‘general acceptance’ test is intended to protect [ ] juries from being misled by expert opinions that may be couched in formidable scientific terminology but that are based on fanci-

ful theories” (*id.* at 342, 799 N.Y.S.2d 38 [internal quotation marks omitted] ). Similarly, as stated by Justice Saxe of the Appellate Division, First Department, in his concurrence in *Marsh v. Smyth*, 12 A.D.3d 307, 785 N.Y.S.2d 440, “[t]he appropriate question for the court at ... a [ *Frye* ] hearing is the somewhat limited question of whether the proffered expert \*57 opinion properly relates existing data, studies or literature to the plaintiff's situation, or whether, instead, it \*\*276 is ‘connected to existing data only by the ipse dixit of the expert’ ” (*id.* at 312, 785 N.Y.S.2d 440, quoting *General Elec. Co. v. Joiner*, 522 U.S. 136, 146, 118 S.Ct. 512, 139 L.Ed.2d 508).

Since 1923, when *Frye* was decided, New York courts have applied the *Frye* test to the results of scientific testing or measurement procedures (see e.g. *People v. Angelo*, 88 N.Y.2d 217, 644 N.Y.S.2d 460, 666 N.E.2d 1333 [polygraph test results]; *People v. Wesley*, 83 N.Y.2d 417, 611 N.Y.S.2d 97, 633 N.E.2d 451 [DNA profiling evidence]; *People v. Middleton*, 54 N.Y.2d 42, 444 N.Y.S.2d 581, 429 N.E.2d 100 [bite mark identification procedure]; *People v. Magri*, 3 N.Y.2d 562, 170 N.Y.S.2d 335, 147 N.E.2d 728 [use of radar device to measure speed]; *Styles v. General Motors Corp.*, 20 A.D.3d 338, 799 N.Y.S.2d 38 [procedure combining two separate automobile roof-stress tests] ). In addition, the *Frye* test has been applied to assess the reliability of psychological or physiological theories or syndromes (see e.g. *People v. LeGrand*, 8 N.Y.3d 449, 835 N.Y.S.2d 523, 867 N.E.2d 374 [expert testimony on the reliability of eyewitness identifications]; *People v. Wernick*, 89 N.Y.2d 111, 651 N.Y.S.2d 392, 674 N.E.2d 322 [neonaticide syndrome]; *People v. Taylor*, 75 N.Y.2d 277, 552 N.Y.S.2d 883, 552 N.E.2d 131 [rape trauma syndrome]; *Oppenheim v. United Charities of N.Y.*, 266 A.D.2d 116, 698 N.Y.S.2d 144 [multiple chemical sensitivity syndrome] ).

[3] New York courts have also applied the *Frye* test to assess the reliability of an expert's theory of causation in a particular case. For this category of expert opinion testimony, “it is not necessary ‘that the underlying support for the theory of causation consist of cases or studies considering circumstances exactly parallel to those under consideration in the litigation. It is sufficient if a synthesis of various studies or cases reasonably permits the conclusion

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reached by the plaintiff's expert' ” (*Zito v. Zabarsky*, 28 A.D.3d at 44, 812 N.Y.S.2d 535, quoting *Marsh v. Smyth*, 12 A.D.3d at 312–313, 785 N.Y.S.2d 440 [Saxe, J., concurring]; see *DieJoia v. Gacioch*, 42 A.D.3d at 979, 839 N.Y.S.2d 904). “The fact that there [is] no textual authority directly on point to support the [expert's] opinion is relevant only to the weight to be given the testimony, but does not preclude its admissibility” (*Zito v. Zabarsky*, 28 A.D.3d at 46, 812 N.Y.S.2d 535; see *DieJoia v. Gacioch*, 42 A.D.3d at 979, 839 N.Y.S.2d 904).

Accordingly, this Court has affirmed the preclusion of expert testimony as to causation in circumstances where there was a complete absence of any literature or studies supporting the particular causation theory espoused by the expert. For example, in *Cumberbatch v. Blanchette*, 35 A.D.3d 341, 825 N.Y.S.2d 744, the plaintiff's expert could cite to no relevant scientific data or studies to support his causation theory that fetal distress resulting\*58 from the compression of the infant plaintiff's head due to labor contractions, augmented by *Pitocin*, resulted in ischemia, which, in turn, resulted in an infarction, and he could cite to no instance when this type of injury had previously occurred in that manner (*id.* at 342, 825 N.Y.S.2d 744). Thus, this Court concluded that the opinion of the plaintiff's expert was scientifically unreliable (*id.* at 342–343, 825 N.Y.S.2d 744). Similarly, in *Lewin v. County of Suffolk*, 18 A.D.3d 621, 795 N.Y.S.2d 659, the plaintiffs' experts conceded that no scientific organization or national board has expressly recognized a causal relationship between in utero exposure to the pesticide Malathion and birth defects, and the peer-reviewed scientific articles and textbooks relied upon by the plaintiffs' experts did not establish the existence of such a relationship \*\*277(*id.* at 622, 795 N.Y.S.2d 659). Under those circumstances, this Court concluded that the methodology employed by the plaintiffs' experts in correlating such exposure to birth defects was “fundamentally speculative” and that the Supreme Court had properly precluded the plaintiffs' experts from testifying (*id.*). And in *Hooks v. Court St. Med., P.C.*, 15 A.D.3d 544, 790 N.Y.S.2d 679, the plaintiff's expert could not cite to any relevant scientific data or studies showing a causal link between the misuse of an electric muscle-stimulating unit and *glossopharyngeal neuralgia* to support his theory that the improper placement of electrodes of an electrical muscle-stimulating unit on the anterior neck of a patient can cause permanent nerve damage, and he could cite to

no instance when that type of injury had previously occurred in that manner (*id.* at 545, 790 N.Y.S.2d 679). Accordingly, this Court determined that the expert's opinion was scientifically unreliable (*id.*).

Standing in sharp contrast are cases in which the expert's opinion satisfied the *Frye* test because it was deduced from generally accepted scientific principles and supported by existing data or literature, although the expert could not point to a case or study involving circumstances exactly parallel to those at issue in the litigation to support his or her theory of causation. For instance, in *DieJoia v. Gacioch*, 42 A.D.3d 977, 839 N.Y.S.2d 904, the Appellate Division, Fourth Department, concluded that the Supreme Court had applied the *Frye* test too restrictively in precluding the plaintiff's experts from testifying that a *cardiac catheterization* in the plaintiff's groin was the cause of the plaintiff's aortic *thrombosis*, which led to an acute *spinal cord infarct* and paralysis (*id.* at 977–978, 839 N.Y.S.2d 904). Although the experts did not produce medical literature documenting a prior case study in which *cardiac catheterization* through the groin was the cause \*59 of aortic *thrombosis* that led to an acute *spinal cord infarct* and paralysis or linking a *cardiac catheterization* in the groin to these injuries, the conclusions of the plaintiff's experts were nonetheless deemed admissible under *Frye* because they were based on accepted scientific principles involving medicine and the vascular system and were not based solely upon the experts' own unsupported beliefs (*id.* at 979–980, 839 N.Y.S.2d 904). Similarly, in *Zito v. Zabarsky*, 28 A.D.3d 42, 812 N.Y.S.2d 535, the opinion testimony of the plaintiff's expert that there was a causal connection between an allegedly excessive dose of *Zocor*, a cholesterol-lowering drug, and the onset of *polymyositis*, was precluded by the Supreme Court, which concluded that the *Frye* test could not be satisfied without medical literature expressly reporting a connection between an excessive dose of *Zocor* and the onset of the disease (*id.* at 44–45, 812 N.Y.S.2d 535). This Court concluded that the Supreme Court's application of the *Frye* test was “overly restrictive” because the plaintiff's experts had supported their theory of a causal nexus between an excessive dose of *Zocor* and *polymyositis* with generally accepted scientific principles and existing data, including a case study documenting a patient who had been diagnosed with *polymyositis* after being prescribed a generic form of *Zocor* at a dosage different than that prescribed to the plaintiff (*id.* at 45, 812 N.Y.S.2d 535). This Court held that the theory of

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causation of the plaintiff's experts "was based upon more than theoretical speculation, or a scientific 'hunch,' " and that the lack of textual authority directly on point pertained to the weight to be given to the experts' testimony, but did not preclude its admissibility (*id.* at 46, 812 N.Y.S.2d 535).

\*\*278 [4] Here, too, the plaintiffs demonstrated that their experts' theory of causation was based upon generally accepted scientific principles, as was their burden (*see Del Maestro v. Grecco*, 16 A.D.3d 364, 791 N.Y.S.2d 139), and in concluding that this opinion testimony was inadmissible, the Supreme Court applied the Frye test too restrictively. At the *Frye* hearing, the plaintiffs' expert Dr. Katz explained that his conclusion that an episode of [hypoglycemia](#) lasting 81 minutes at a level of 3 mg/dL could cause neurologic damage of the type sustained by Lugo, i.e., PVL, was based on several generally accepted scientific principles: namely, that [hypoglycemia](#) causes [brain injury](#), that certain infants are more susceptible than others to neurologic injury, and that [hypoglycemia](#) is a toxic and dangerous state with no safe level. The defendant's experts did not dispute the general acceptance of the foregoing scientific principles. To the contrary, the defendant's \*60 expert Dr. Pavlakis confirmed that it was generally accepted that [hypoglycemia](#) can cause brain damage, that the scientific community does not recognize any level or duration of [hypoglycemia](#) considered safe and incapable of causing brain damage, and that individual susceptibility to toxic states varies among newborns.

In addition, the plaintiffs' expert Dr. Peyster explained that PVL was simply a term that refers to damage to the deep white brain matter next to the ventricles which appears as an abnormality on an MRI brain scan, and the evidence presented at the *Frye* hearing established general acceptance of the scientific principle that [hypoglycemia](#) can cause PVL. Both Drs. Katz and Peyster testified that their opinion that [hypoglycemia](#) can cause PVL was supported by the Volpe textbook, which discusses neuropathic studies indicating that [hypoglycemia](#) is a precedent of PVL. Dr. Katz characterized the Volpe textbook as a "well written outline" of certain neonatal neurologic principles, although he acknowledged that not everyone agreed with all of its conclusions, and Dr. Peyster characterized the Volpe textbook as the best text he knew of on the topic of pediatric neurology. These assessments of the Volpe textbook

were not challenged by the defendant's experts. In addition, Dr. Jahre's testimony that [hypoglycemia](#) can cause brain damage in the form of white matter damage against the ventricles provided further evidence of the acceptance of the general principle that [hypoglycemia](#) can cause PVL. Although the defendant's expert Dr. Pavlakis opined that PVL is almost always caused by a decrease of blood flow or oxygen to a baby between 28 and 40 weeks of age, he cited to no medical literature or case studies to support this specific assertion, and even he acknowledged that [hypoglycemia](#) can cause brain abnormalities discernable on an MRI film.

Concededly, the plaintiffs' experts failed to produce a case or study reporting an occurrence of PVL in circumstances exactly parallel to those at issue here—i.e., after a single episode of [neonatal hypoglycemia](#) at a level of 3 mg/dL lasting 81 minutes, or any literature expressly supporting their theory that such an episode of [hypoglycemia](#) could result in PVL. Nevertheless, the plaintiffs demonstrated that their theory of causation was reasonably permitted by a synthesis of the medical literature discussed at the hearing (*see DieJoia v. Gacioch*, 42 A.D.3d at 979, 839 N.Y.S.2d 904; *Zito v. Zabarsky*, 28 A.D.3d at 44, 812 N.Y.S.2d 535; *Marsh v. Smyth*, 12 A.D.3d at 312–313, 785 N.Y.S.2d 440). Although the Burns article was not designed to test the relationship between the severity or duration of \*61[hypoglycemia](#) and neurodevelopmental outcomes, it limited its study to patients who had experienced [neonatal hypoglycemia](#) and excluded those who had \*\*279 suffered from other conditions, such as hypoxic ischemia, and it determined that 94% of the subjects studied, 63% of whom had only experienced one episode of [hypoglycemia](#), had evidence of white matter abnormalities on their MRI brain scans. Although the Kinnala article had excluded infants who had experienced only one episode of [hypoglycemia](#) prior to six hours of age, it also documented a patient who had experienced an episode of [hypoglycemia](#) at seven hours of age which lasted two hours at a minimum glucose level of 32 mg/dL, a level "dramatically" higher than Lugo's glucose level of 3 mg/dL during his episode of [hypoglycemia](#). That patient had shown evidence of neurologic injury on an MRI, although that abnormality had subsequently resolved. Finally, the Alkalay article, which reviewed the Kinnala article and 15 others, concluded that plasma glucose levels of less than 25 mg/dL of several hours' duration—again, a level far higher than that experienced by Lu-

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go—may increase the relative risk for adverse neurologic outcome.

To be sure, none of the foregoing articles, read in isolation, provides conclusive support for the theory of causation espoused by the plaintiffs' experts. However, when considered in the aggregate for the limited purpose of applying the *Frye* test, and against the backdrop of the undisputed generally accepted principles concerning [hypoglycemia](#) set forth at the hearing, those articles establish that this theory was properly based upon far more than theoretical speculation or a scientific “hunch” (see *Zito v. Zabarsky*, [28 A.D.3d at 46, 812 N.Y.S.2d 535](#)). Synthesized, the materials produced by the plaintiffs' experts at the *Frye* hearing provided an objective basis for their opinion that a period of severe [hypoglycemia](#) of relatively short duration can cause neurologic injury reflected as PVL on a MRI brain scan. The absence of medical literature directly on point with the circumstances at bar pertains to the weight to be given to this opinion testimony, but does not preclude its admissibility (see *DieJoia v. Gacloch*, [42 A.D.3d at 979, 839 N.Y.S.2d 904](#); *Zito v. Zabarsky*, [28 A.D.3d at 46, 812 N.Y.S.2d 535](#)).

In concluding that the opinion testimony of the plaintiffs' experts did not satisfy the *Frye* test, the Supreme Court emphasized the fact that those experts were unable to characterize the literature upon which they relied as “authoritative.” Seemingly, the Supreme Court ascribed significance to the experts' willingness to apply this label while disregarding the \*62 hearing testimony that the term “authoritative” is not generally applied to medical literature and that the materials discussed at the hearing represented the current science with regard to [brain injuries](#) resulting from [neonatal hypoglycemia](#).

[5] We agree with Justice Saxe that when the *Frye* test is applied to a theory of causation, “the court's concern must be limited to making sure that within the scientific field in question, there is a substantive, demonstrable, objective basis for the expert's conclusion,” and that “[t]he focus of the inquiry in such an instance should not be upon how widespread the theory's acceptance is, but should instead consider whether a reasonable quantum of legitimate support exists in the literature for the expert's views” (*Marsh v. Smyth*, [12 A.D.3d at 312, 785 N.Y.S.2d 440](#)). In this case, the plaintiffs' experts amply

demonstrated the existence of such a basis for their theory of causation, and in precluding their opinion testimony, the Supreme Court applied the *Frye* test in an overly restrictive manner. Both the plaintiffs' experts and the defendant's experts agree that an episode of severe glucose deprivation in a newborn can cause neurologic\*\*280 damage; the principal dispute between them, which was emphasized by the testimony at the *Frye* hearing, is over how long such an episode must last before neurologic damage results. This factual disagreement should not have been resolved as a matter of law by the Supreme Court in the course of its *Frye* inquiry.

The purpose of the *Frye* test is not to preclude expert opinion testimony based upon reasonable extrapolations from conceded legitimate empirical data. It would be as unreasonable to preclude a 45-year smoker from seeking recovery if the only available empirical data addressed 50-year smokers as it was to preclude the instant plaintiffs' experts from testifying, based on their reasonable extrapolations from existing legitimate empirical data, that Lugo's severe episode of [neonatal hypoglycemia](#) caused his [brain injuries](#).

#### *Foundation*

[6] In addition, we disagree with the Supreme Court's conclusion that the theory of causation espoused by the plaintiffs' experts lacked an adequate foundation for admissibility. “The *Frye* inquiry is separate and distinct from the admissibility question applied to all evidence—whether there is a proper foundation—to determine whether the accepted methods were appropriately employed in a particular case” (*Parker v. Mobil Oil Corp.*, [7 N.Y.3d 434, 447, 824 N.Y.S.2d 584, 857 N.E.2d 1114](#); see *People v. Wesley*, [83 N.Y.2d at 428–429, 611 N.Y.S.2d 97, 633 N.E.2d 451](#); *Jackson v. Nutmeg Tech., Inc.*, [43 A.D.3d 599, 601, 842 N.Y.S.2d 588](#)). \*63 “The focus moves from the general reliability concerns of *Frye* to the specific reliability of the procedures followed to generate the evidence proffered and whether they establish a foundation for the reception of the evidence at trial” (*People v. Wesley*, [83 N.Y.2d at 429, 611 N.Y.S.2d 97, 633 N.E.2d 451](#)). “The foundation ... should not include a determination of the court that such evidence is true. That function should be left to the jury” (*id.* [at 425, 611 N.Y.S.2d 97, 633 N.E.2d 451](#)).



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[7] Here, the level (3 mg/dL) and duration (81 minutes) of Lugo's [hypoglycemia](#) episode were precisely quantified by the plaintiffs' experts at the *Frye* hearing (cf. *Parker v. Mobil Oil Corp.*, 7 N.Y.3d at 449–450, 824 N.Y.S.2d 584, 857 N.E.2d 1114), and the Supreme Court did not conclude that these measurements were unreliable. In addition, the plaintiffs' experts made specific reference to the contents of numerous articles documenting brain MRI abnormalities in patients who had experienced [hypoglycemia](#) to support their opinion that there was a causal connection between Lugo's episode of [hypoglycemia](#) and the brain abnormalities later observed on his MRI film (see *Jackson v. Nutmeg Tech., Inc.*, 43 A.D.3d at 602, 842 N.Y.S.2d 588). Under these circumstances, we conclude that the Supreme Court improvidently exercised its discretion in concluding that the plaintiffs' experts failed to proffer sufficient foundational evidence to support the admissibility of their testimony at trial.

The Supreme Court's conclusion that the opinion of the plaintiffs' experts lacked an adequate foundation rested largely on its findings that the evidence presented at the *Frye* hearing established that perinatal ischemia or [hypoxia](#) is the overwhelming cause of PVL and that the testimony of the plaintiffs' experts did not eliminate other “more likely possible causes” of Lugo's PVL. In relying upon such reasoning, the Supreme Court, in effect, rendered an assessment as to the ultimate merit of the opinion testimony of the plaintiffs' experts (see *People v. Wesley*, 83 N.Y.2d at 425, 611 N.Y.S.2d 97, 633 N.E.2d 451). Clearly, numerous factual disagreements between the parties' experts were highlighted\*\*281 at the *Frye* hearing, including, but not limited to, the specific appearance of Lugo's brain MRI abnormalities and their cause. However, these factual disagreements go to the weight to be accorded to the testimony of the plaintiffs' experts by the trier of fact, and not the admissibility of such testimony (see *Jackson v. Nutmeg Tech., Inc.*, 43 A.D.3d at 602, 842 N.Y.S.2d 588).

#### *Summary Judgment*

[8] Finally, in light of our determination that the theory of causation espoused by the plaintiffs' experts is admissible at trial, we conclude that the Supreme Court improperly granted that \*64 branch of the defendant's motion which was for summary judgment dismissing the complaint. Briefly, although the defendant's expert submissions established, prima facie,

that Lugo's brain damage was not caused by his episode of [neonatal hypoglycemia](#), the plaintiffs, in opposition, raised a triable issue of fact on this point through the submission of admissible expert opinion evidence (see generally *Alvarez v. Prospect Hosp.*, 68 N.Y.2d 320, 324, 508 N.Y.S.2d 923, 501 N.E.2d 572; *Zuckerman v. City of New York*, 49 N.Y.2d 557, 562, 427 N.Y.S.2d 595, 404 N.E.2d 718). Thus, under the particular circumstances of this case, the Supreme Court should have denied that branch of the defendant's motion which was for summary judgment dismissing the complaint.

The appeal from the intermediate order must be dismissed because the right of direct appeal therefrom terminated with the entry of judgment in the action (see *Matter of Aho*, 39 N.Y.2d 241, 248, 383 N.Y.S.2d 285, 347 N.E.2d 647). The issues raised on the appeal from the order are brought up for review and have been considered on the appeal from the judgment (see [CPLR 5501](#)[a][1]).

Accordingly, the judgment is reversed, on the law, that branch of the defendant's motion which was for summary judgment dismissing the complaint is denied, and the order is modified accordingly.

ORDERED that the appeal from the order is dismissed; and it is further,

ORDERED that the judgment is reversed, on the law, that branch of the defendant's motion which was for summary judgment dismissing the complaint is denied, and the order is modified accordingly; and it is further,

ORDERED that one bill of costs is awarded to the appellants.

[RIVERA](#), J.P., [FLORIO](#) and [LOTT](#), JJ., concur.

N.Y.A.D. 2 Dept., 2011.

Lugo v. New York City Health and Hospitals Corp.  
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(Cite as: 2011 WL 2470621 (N.D.Ind.))

**C**

Only the Westlaw citation is currently available.

United States District Court,  
N.D. Indiana,  
South Bend Division.  
Dale RUPPEL, Shelley Ruppel, Plaintiffs,  
v.  
Dragan KUCANIN, Fedex Ground Package System,  
Inc., Defendants.

No. 3:08 CV 591.  
June 20, 2011.

Robert J. Ehrenberg, Barry R. Conybeare, Conybeare  
Law Office PC, Saint Joseph, MI, for Plaintiffs.

Christopher J. Spataro, Carl A. Greci, Baker & Dan-  
iels, South Bend, IN, for Defendants.

**OPINION AND ORDER**

JAMES T. MOODY, District Judge.

\*1 Defendant Dragan Kucanin (“Kucanin”) a driver for defendant FedEx Ground Package System, Inc. (“FedEx”) drove his semi-tractor trailer rig into a semi-tractor trailer rig driven by plaintiff Dale Ruppel (“Ruppel”) when Ruppel was stopped in a construction zone. The accident between Ruppel and Kucanin occurred on Interstate 80/94 East in Calumet Township, Lake County, Indiana, on January 8, 2008. Both vehicles were damaged in the collision. (Pls.’ Exh. 2, DE # 57–2.) Ruppel and his wife Shelley Ruppel (collectively “the Ruppels”) sued FedEx and Kucanin for damages that he allegedly sustained as a result of the accident. (DE # 1.) Defendants have admitted that Kucanin was negligent in operating his semi-tractor trailer rig causing the crash with Ruppel’s semi-tractor trailer rig. (Responses to Plaintiffs’ Requests to Admit to Dragan Kucanin and FedEx Ground Package sys-

tem, Inc., Pls.’ Exh. 1, DE # 57–1 at 1.) They also admit that Ruppel has no comparative negligence. (*Id.*) Defendants have moved to exclude Ruppel’s evidence related to an alleged **diffuse axonal brain injury** under **FEDERAL RULE OF EVIDENCE 702** and for summary judgment on Ruppel’s claim for a **diffuse axonal injury**. (DE54–56.) As explained below, both motions will be denied.

Defendants argue that two pieces of Ruppel’s proposed evidence should be excluded under **FEDERAL RULE OF EVIDENCE 702**. First, they argue that Dr. Christine Pareigis (“Dr.Pareigis”) is unqualified to diagnose a **diffuse axonal injury** because she is not qualified to diagnose an injury. (DE # 56 at 13.) Second, they argue that Dr. Randall Benson’s (“Dr.Benson”) opinion as to Ruppel’s condition of a **diffuse axonal injury** and its causation is unreliable under **RULE 702** because it is based on two controversial methods: **diffusion tensor imaging** (“DTI”) and fractional anisotropy (“FA”) quantification from that imaging and because the wording of his opinion is not sufficiently certain. (*Id.* at 15.) Defendants argue that once this evidence is excluded, Ruppel will have no evidence as to his diagnosis of **diffuse axonal injury** or to its causation, and therefore, summary judgment should be granted against Ruppel on his claim related to **diffuse axonal injury**. The court will begin with an analysis of whether the contested evidence should be excluded under *Daubert*.

**I. MOTION TO EXCLUDE EVIDENCE**

To be admissible, expert testimony must satisfy the conditions of **FEDERAL RULE OF EVIDENCE 702** and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993). *United States v. Parra*, 402 F.3d 752, 758 (2005). **RULE 702** provides:

If scientific, technical, or other specialized

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knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

\*2 Under *Daubert*, the court must be satisfied, first, that the expert can testify based on *valid* scientific, technical or specialized knowledge, *i.e.*, whether the expert's testimony is reliable, and second, whether that testimony will be of assistance to the trier of fact. 509 U.S. at 592; *United States v. Welch*, 368 F.3d 970, 973 (7th Cir.2004); *Ammons v. Aramark Uniform Services, Inc.*, 368 F.3d 809, 816 (7th Cir.2004). The reliability issue requires the court to determine whether the expert is qualified in the relevant field and used a reliable methodology to arrive at his or her conclusions. *Zelinski v. Columbia 300, Inc.*, 335 F.3d 633, 640 (7th Cir.2003); *Smith v. Ford Motor Co.*, 215 F.3d 713, 718 (7th Cir.2000).

#### A. Dr. Pareigis's qualifications

FEDERAL RULE OF EVIDENCE 702 provides that a witness qualified as an expert “by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.” Defendants are correct that under RULE 702, a witness may only offer an expert opinion on an area within his or her field of specialized knowledge. (DE # 56 at 15 (citing *Jones v. Elec. Co.*, 188 F.3d 709, 723 (7th Cir.1999)).) To determine if a witness is an expert, the court must compare the area in which the witness has superior skill, knowledge, education, or expertise to the area of her proposed testimony. *Jones*, 188 F.3d at 723.

The parties contest whether Dr. Pareigis can testify as to Ruppel's diagnosis of *diffuse axonal injury*.

Defendants argue that Dr. Pareigis cannot testify as to Ruppel's diagnosis because she is an expert in rehabilitation, not diagnosis. (DE # 56 at 16.) Defendants also submit proposed testimony from their witness, neurologist Dr. John Talbott, that psychiatrists normally do not make a diagnosis of *diffuse axonal injury* in a “neurology field.” (John Talbott Dep. 37, Defs.' Exh. R, DE # 56–18.) In response, the Ruppels assert that Dr. Pareigis is “board certified in physical medicine and rehabilitation and is qualified by knowledge, skill, experience, training and education to testify in the form of opinion as to a diagnosis of closed *head injury* with diffuse axonal damage and the probable cause thereof.” (DE # 57 at 4.)

Dr. Pareigis is board certified in physical medicine and rehabilitation, a practice speciality which she stated “includes the evaluation, diagnosis, and treatment of *brain injury*.” (Dr. Christine Pareigis Aff., Pls.' Exh. 4, DE # 57–4 ¶ 5.) She is now the Medical Director of Rehabilitation at the Lakefront Medical Center in St. Joseph, Michigan. (*Id.* ¶ 2.) In that position, which she has held for 21 years, she regularly diagnoses, evaluates, and treats *brain injury*. (*Id.*) She also maintains a private practice in St. Joseph, Michigan where she regularly evaluates, diagnoses, and treats *brain injury*. (*Id.* ¶ 4.) Dr. Pareigis stated that she sees an average of ten new cases a year involving injuries like Ruppel's for a total of about two hundred cases over the course of her career. (Dr. Christine Pareigis Dep. 48, Defs.' Exh. D., DE # 56–4.)

\*3 She previously served as the Medical Director of Rehabilitation at New Medico / Visitors Hospital in Buchanan, Michigan. (Pareigis Aff. ¶ 3.) This institution is a *head injury* clinic, affiliated with a national program, that evaluates, diagnoses, and treats *head injury* patients. (*Id.*) As the Medical Director, 90% to 100% of Dr. Pareigis's practice involved the evaluation, diagnosis, and treatment of closed *head injury*. (*Id.*)

First, defendants appear to argue that Dr. Pareigis

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cannot testify as to Ruppel's diagnosis of [diffuse axonal injury](#) because her diagnosis was based in part on the results of DTI and she received help from a radiologist in deciding to run that scan. (Christine Pareigis Dep. 23.) They also take issue with that fact that she used the abbreviations SWY/DTI explaining that she needed to do so because they were radiology terms. (*Id.*) Dr. Pareigis testified that she ordered the [magnetic resonance imaging](#) (“MRI”) with SWY/DTI because she felt that it would give her “more evidence regarding [axonal diffuse injuries](#).” (Pareigis Dep. 23.) At the time of the deposition, she had not received the results of the DTI scan and she did not expect it to change the course of treatment, but she thought it might help her to understand Ruppel's injury a little better. (*Id.*)

Dr. Pareigis's testimony that she consulted with a radiologist in deciding to order the MRI does not disqualify her as an expert because she can base her conclusion on the opinions of others as long as they are the type of materials reasonably relied upon by experts in her field. [United States v. Gardner](#), 211 F.3d 1049, 1054 (7th Cir.2000). RULE 703, the corollary to [RULE 702](#), is instructive on this matter. RULE 703 states that an expert can rely on facts and data not admissible into evidence as long as the facts and data are “of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject.” The Advisory Committee notes to the 1972 amendments to RULE 703 state that “a physician in his own practice bases his diagnosis on information from numerous sources and of considerable variety including statements by patients and relatives, reports and opinions from nurses, technicians and other doctors, hospital records and X-rays.” Accordingly, the FEDERAL RULES OF EVIDENCE account for the reality that doctors, like Dr. Pareigis, rely on the opinions of other doctors in reaching their diagnoses.

Further, Dr. Pareigis did not rely on the DTI scan alone in making her diagnosis. In fact, she stated that

she thought the DTI scan would help her learn more about the injury but that it probably would not change her course of treatment. So her testimony is not unreliable because she consulted with another doctor in deciding the course of treatment for her patient. Instead, evidence that Dr. Pareigis consulted a radiologist to order the MRI would go to the weight that the jury may give her testimony.

\*4 Apart from her reliance on the DTI scan, defendants argue that Dr. Pareigis is not qualified to testify at all as to Ruppel's [diffuse of axonal brain injury](#) diagnosis because making a diagnosis is outside of her expertise. In making this argument defendants cite to two cases, *Jones* and *Cunningham v. Masterwear, Inc.* In both, the court determined that qualified experts cannot testify on subjects that are outside of their field of expertise. In *Jones*, the United States Court of Appeals for the Seventh Circuit found that the witness, a doctor in metallurgy, the study of metals, was not qualified to testify as to how manganese affects the human body and is processed by the lungs. [188 F.3d at 723](#). In his testimony, the witness admitted that toxicology and how the body absorbs certain substances was outside of his expertise. *Id.* Similarly in *Cunningham*, the court held that witness medical doctors could not testify as to whether a hazardous chemical caused the plaintiffs' illnesses because the witnesses did not have any training in epidemiology or toxicology. No. 1:04-cv-1616, [2007 WL 1164832](#), at \*10 (S.D.Ind. Apr.15, 2007).

In this case, Dr. Pareigis stated that the diagnosis of [brain injuries](#) is firmly within her area of expertise. The Seventh Circuit has noted that while “extensive academic and practical expertise” may be sufficient to qualify a witness as an expert, [RULE 702](#) “specifically contemplates the admission of testimony by experts whose knowledge is based on experience.” [Smith](#), [215 F.3d at 718](#) (internal quotations and citations omitted). As described above, in her affidavit <sup>FNI</sup> Dr. Pareigis stated that she has over thirty years of experience in diagnosing [brain injuries](#). This is the type of “exten-

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sive hands-on experience over a meaningful period of time” that qualifies someone as an expert under [RULE 702](#). *Jones*, 188 F.3d at 724. Thus the evidence before the court shows that Dr. Pareigis is qualified to testify as to Ruppel's diagnosis of a [diffuse axonal brain injury](#).<sup>FN2</sup>

**FN1.** Defendants argue that Dr. Pareigis's affidavit cannot be used to show her qualifications when her qualifications were not established through her deposition. It is true that an “affidavit cannot be used to create a genuine issue of material fact where the affidavit differs from the prior deposition testimony to the point that it is ble.” *Patterson v. Chicago Ass'n for Retarded Citizens*, 150 F.3d 719, 720 (7th Cir.1998). However, when “deposition testimony is ambiguous or incomplete ... the witness may legitimately clarify or expand upon that testimony by way of an affidavit.” *Shepherd v. Slater Steels Corp.*, 168 F.3d 998, 1007 (7th Cir.1999). Dr. Pareigis's affidavit does not contradict her deposition testimony. Rather, the deposition testimony did not cover her qualifications and experience related to brain injury diagnosis.

**FN2.** Defendants do not argue that Dr. Pareigis was not qualified to testify as to causation. Accordingly, plaintiffs have not produced much evidence that she is qualified to testify as to causation. However, medical doctors do testify as to the issue of specific causation. See e.g., *Cunningham*, 2007 WL 1164832, at \*10–11 (citing Mary Sue Henifin, Howard M. Kipen & Susan R. Poulter, *Reference Guide on Medical Testimony* 444–45, in REFERENCE MANUAL ON SCIENTIFIC EVIDENCE (2nd ed.2000)). Further, in her deposition, Dr. Pareigis testified that she had seen “a great number of people” who suffered brain injury

after motor vehicle accidents. (Christine Pareigis Dep. 47.) Thus her deposition testimony indicated that she does have experience in determining the specific causes of brain injury for her patients. Accordingly, at this time, the court will not exclude Dr. Pareigis's testimony as to the cause of diffuse axonal injury.

## **B. Dr. Benson's testimony**

### *1. Dr. Benson's reliance on DTI*

Defendants assert that Dr. Benson's expert testimony on [diffuse axonal injury](#) is unreliable under *Daubert* and [RULE 702](#) because he relies on DTI which defendants argue is an unreliable technology that has not gained acceptance and because his reliance on FA quantification based on DTI comparisons is not the most accurate way to diagnose [diffuse axonal brain injuries](#).

To begin, the court will give a brief overview of [diffuse axonal brain injury](#), closed [head injury](#), DTI, and how Dr. Benson used DTI to diagnose [diffuse axonal injury](#) in Ruppel. According to Dr. Benson, [brain injury](#) is classified as either focal or diffuse. (Dr. Randall Benson Aff., Pls.' Exh. 7, DE # 58–1 at ¶ 5.) A focal injury is a localized injury, such as that caused by a [stroke](#), a direct blow to the head, or a [aneurysm](#), and is typically a contusion on the surface of the brain, visible by conventional scanning. (*Id.*) On the other hand, a [diffuse axonal injury](#) involves scattered damage to the brain substance, particularly the white matter that is comprised of axon fibers. (*Id.*) A closed head (non-penetrating) [brain injury](#), the most common type of [traumatic brain injury](#), can include focal injury, diffuse injury, or both. (*Id.*) A [brain injury](#) can include only evidence of [diffuse axonal injury](#). when it is a result of “relatively little direct impact to the skull such as during a motor vehicular collision with a restrained passenger and little or no impact to the head.”

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(*Id.*)

\*5 According to Dr. Benson:

Diffuse axonal injury is the hallmark pathology in closed head injury and is not visible on conventional MRI imaging in milder cases. Diffuse axonal injury results from acceleration or deceleration of the head (skull) which causes deformations (stretch and strain) of the brain substance leading to shear injury of white matter fibers.

(*Id.*) A traditional MRI shows the structure of the brain and the majority of people with mild brain injury will have a normal MRI even if they have significant impairment. (*Id.* ¶ 6.) DTI is a more sensitive, three-dimensional type of MRI that examines the microstructure of the white matter in the brain. (*Id.* ¶¶ 7–8.) DTI can show reduction in fractional anisotropy (“FA”) meaning that the white matter in the brain has been damaged. (*Id.* ¶ 12.) Because the reduction in FA caused by a milder traumatic brain injury (“TBI”) cannot be seen by looking at a single scan standing alone, a TBI patient's imaging is evaluated for damage by comparing it to images of non-TBI control group's brains. (*Id.* ¶ 13.)

First, defendants cannot exclude Dr. Benson's opinion simply because DTI is not the most reliable way to diagnose a brain injury. They argue, and Dr. Benson testified, that the only definite way to identify a diffuse axonal brain injury is by autopsy. Barring that, they argue, as their expert Dr. Valerie Drnovsek (“Dr.Drnovsek”) explains, that reduced FA may be detected through analysis with fiber-tracking algorithms. (DE # 56 at 10.) As defendants acknowledge, it is not reasonable to expect that Ruppel would have to submit to an autopsy in order to provide proof of his injuries. Contrary to defendants' contentions, expert opinions may be admitted even if they are not stated with absolute certainty. Indeed, in *Daubert* the Court stated, “[o]f course, it would be unreasonable to con-

clude that the subject of scientific testimony must be ‘known’ to a certainty; arguably, there are no certainties in science.” *Daubert*, 509 U.S. at 590.

It is also unnecessary for Dr. Benson to have used fiber-tracking algorithms. The court's focus is on whether Dr. Benson's opinion is based on a reliable method, not on a method that defendants deem to be most reliable. *See e.g.*, *Cunningham*, 2007 WL 1164832, at \*3 (stating “as long as [plaintiffs' proposed witness] used a reliable method to come up with his conclusions, it is not a problem that he did not use the method that Defendants claim is ‘useful’ ”); *cf. Cooper v. Carl A. Nelson & Co.*, 211 F.3d 1008, 1020 (7th Cir.2000) (stating “[o]ur case law has recognized that experts in various fields may rely properly on a wide variety of sources and may employ a similarly wide choice of methodologies in developing an expert opinion.”).

Further, Dr. Drnovsek identified fiber tracking algorithms analysis as a way to address certain deficiencies with FA quantitative analysis. (Dr. Drnovsek Report 4, Defs.' Exh. H, DE # 56–8.) In his affidavit, Dr. Benson stated that is not necessary. But Dr. Benson contends that this is not necessary because the problems addressed by this method are presented by scans that look at gray matter, not those that look only at white matter such as the ones he employs. (Dr. Benson Aff. ¶ 34.) The difference in opinion between the two experts is something that can be addressed at trial and does not make Dr. Benson's method so unreliable that his opinion need be excluded.

\*6 As will be discussed, DTI and FA quantification based on comparative scans appear to be reliable methods for Dr. Benson to arrive at his expert opinion of both Ruppel's diagnosis of diffuse axonal injury and the cause of that injury. A district court has great latitude in determining not only how to measure the reliability of the proposed expert testimony but also whether the testimony is, in fact, reliable. *United States v. Pansier*, 576 F.3d 726, 737 (7th Cir.2009).

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The Seventh Circuit has advised that “[t]o determine reliability, the court should consider the proposed expert's full range of experience and training, as well as the methodology used to arrive [at] a particular conclusion.” *Id.* Defendants do not take issue with Dr. Benson's qualifications; they focus instead on the reliability of the methods he employed.

The Supreme Court, in *Daubert*, laid out four general criteria for determining the validity of an expert's methodology: (1) whether the theory has been or can be tested or falsified; (2) whether the theory or technique has been subject to peer review and publication; (3) whether there are known or potential rates of error with regard to specific techniques; and (4) whether the theory or approach has general acceptance. *Daubert*, 509 U.S. at 593–94. As “these factors do not establish a definitive checklist” for determining the reliability of expert testimony, the Seventh Circuit has described the *Daubert* test as a “non-exhaustive list of guideposts.” *Trustees of Chi. Painters and Decorators Pension v. Royal Int'l Dry-wall & Decorating Inc.*, 493 F.3d 782, 787 (7th Cir.2007); *Am. Honda Motor Co., Inc. v. Allen*, 600 F.3d 813, 817 (7th Cir.2010). Further, the Seventh Circuit has employed other benchmarks which appear in the 2000 Advisory Committee's Notes to [RULE 702](#) to gauge expert reliability, including whether the testimony relates to “matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying”; “[w]hether the expert has adequately accounted for obvious alternative explanations”; and “[w]hether the expert is being as careful as he would be in his regular professional work outside his paid litigation consulting.” *Id.* (alterations in *Allen* ).

In this case, defendants argue that the DTI and FA quantification used by Dr. Benson are unreliable because 1) DTI is not generally accepted; 2) DTI cannot be tested 3) Dr. Benson has not considered alternative explanations for the comparatively decreased FA

quantification found in the images; 4) Dr. Benson did not use proper methods and controls in his use of this imaging, especially considering that FA decreases with age; 5) Dr. Benson did not use the same level of intellectual rigor that is used by a regular expert in his field. (DE # 56 at 14.)

In response, the Ruppels argue that DTI is generally accepted in the relevant scientific community; DTI has been subjected to peer review and publication; DTI and FA quantification have low error rates; DTI and FA quantification was not developed for litigation; and DTI has been admitted by other courts. (DE # 57 at 20–23.) They also argue that defendants' experts lack the knowledge and qualifications to challenge the scientific reliability of DTI testing. (*Id.* at 25.) The court will now discuss the relevant factors in turn.

#### *a. General acceptance of DTI*

\*7 The evidence shows that while DTI is a relatively new technology it is gaining general acceptance as a method for detecting TBI. First, as explained in further detail below, there have been numerous validation studies, published in peer reviewed journals, on the use of DTI to detect [diffuse axonal injuries](#). (Dr. Benson Aff. ¶ 14.) Second, DTI is regularly used as a diagnostic tool at the Detroit Medical Center and at other locations throughout the country. (*Id.* ¶ 15.) Third, Dr. Benson, Dr. Pareigis, and Dr. Bradley Sewick, a neuropsychologist, all determined that DTI would be helpful in diagnosing Ruppel. (Dr. Bradley Sewick Aff. ¶ 10.) Fourth, the United States Army Telemedicine and Advanced Technology Research Command (“TATRC”) sponsored a “Diffusion MRI TBI Roadmap Development Workshop” at which it was acknowledged: “DTI has detected abnormalities associated with [brain trauma](#) at several single centers.” (Benson Aff. ¶ 4.) It was also stated that “the workshop seeks to identify and remove barriers to rapid translation of advanced [diffusion MRI](#) technology for TBI ... in order to expedite getting the benefits of diffusion MRI to reach those who need it most, espe-

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cially injured soldiers and veterans.” (*Id.*)

Fifth, in 2001, the Food and Drug Administration (“FDA”) approved the product “Diffusion Tensor Imaging Option for MRI” for marketing as a Class II Special Control device. (Pl.’s Exh. 8, DE # 57–8.) Ruppel, citing to 21 U.S.C. § 360c(a)(3)(A), states that the FDA tested the software for safety and effectiveness before granting marketing permission. (DE # 57 at 21.) The letter from the FDA does not say this specifically. However, 21 U.S.C. § 360c(a)(3)(A) provides that approved Special Control devices are determined to be effective:

on the basis of well-controlled investigations, including 1 or more clinical investigations where appropriate, by experts qualified by training and experience to evaluate the effectiveness of the device, from which investigations it can fairly and responsibly be concluded by qualified experts that the device will have the effect it purports or is represented to have under the conditions of use prescribed, recommended, or suggested in the labeling of the device.

So although the FDA letter itself does not address the effectiveness of DTI, but its approval for marketing by the FDA indicates that its effectiveness was determined pursuant to 21 U.S.C. § 360c(a)(3)(A). In fact, other courts that have found DTI to be a reliable method have noted that it is “FDA approved, peer reviewed and approved, and a commercially marketed modality which has been in clinical use for the evaluation of suspected head traumas including mild traumatic brain injury.” *Hammar v. Sentinel Ins. Co., Ltd.*, No. 08–019984 at \*2 (Fla.Cir.Ct.2010).

Sixth, Ruppel has pointed to several decisions in which trial court judges admitted DTI into evidence. *See e.g., Hammar*, No. 08–019984 at \*2 (allowing DTI evidence to be admitted under the *Frye* standard); *Whilden v. Cline*, No. 08–cv–4210 (Col.Ct.Dist. May

10, 2010) (allowing an expert witness to rely on DTI evidence when testifying as to the diagnosis of mild TBI and its possible causation from an automobile accident as long as the expert’s opinion was not based solely on DTI).

\*8 On the other side, defendants’ argument that DTI is not generally accepted is based primarily upon testimony that Dr. Benson provided in his deposition. (DE # 56 at 13 (citing Dr. Randall Benson Dep. 13, Defs.’ Exh. F, DE # 56–6).) Defendants point to this portion of Dr. Benson’s deposition:

Q: I think at the beginning of your question you said some insurance companies would cover [DTI] and some wouldn’t. Take your average hundred mild TBI patients, all things being equal, approximately how many of them after one or two regular MRIs showing no abnormalities would be able to get this more advanced MRI?

A: I think very few, and the reason is that this technique that we’re hoping will become a standard operating technique, it is clearly not something that is far enough along. I mean in terms of the commercialization of it, that insurance companies routinely will cover.

Now having said that, we add these sequences onto standard sequences, and insurance companies do pay for it. But if a patient has already had one or two negative MRIs, I think its going to be, it is going to be very very difficult, you know, to convince the insurance company, which is why we’re doing this work obviously.

(Dr. Benson Dep. 13–14.) This testimony focuses mostly on insurance companies’ acceptance of DTI. Surely insurance companies’ willingness to pay for a test is not dispositive of its reliability. Further, Dr. Benson also testified that some insurance companies would pay for DTI after an MRI showing no abnor-



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mality and some would not because “that is just kind of a state of where we're at with insurance these days.” (*Id.* at 12.) He did not say that insurance companies do not find DTI helpful, but only that they are reluctant to pay for it after a regular MRI shows no problems.

As shown above, DTI has been accepted within the medical community. It is regularly used at some hospitals even though it is not the regular standard of care at the average hospital. (*Id.* at 24.) Importantly, as discussed below, there are many articles published in peer-reviewed publications that cover the effectiveness of DTI in detecting mild TBI. All of the factors shown above weigh towards a finding that while DTI is a relatively new and developing technology, it is well on its way to gaining general acceptance in the scientific community as a tool for identifying mild TBI. Thus, the evidence shows that DTI and analysis of white matter in DTI images are generally accepted methods for determining mild TBI.

#### *b. Peer review and publication*

As of early 2010, there were 3,472 papers on DTI published in peer review journals. (Dr. Benson Aff. ¶ 17.) Eighty-three of these articles involved DTI in relation to TBI. (*Id.*) Of these 83 papers, a control group was used for the statistical analysis of 35 of them. (*Id.*) In the case that defendants rely upon to show the DTI has not been accepted by the courts, the trial judge determined that DTI could not be admitted to show mild traumatic brain injury in large part because the party moving to admit DTI evidence had not pointed to any articles showing that DTI was used for that purpose. *Bowles v. Pennington*, No. 06-cv-11030, at \*3-4 (Col.Ct.Dist. Aug. 14, 2009). As just explained, that problem does not exist here because the Ruppels have pointed to many articles that discuss how DTI is effective in detecting mild brain injury. In fact, Dr. Benson's affidavit includes quotes from fourteen peer-reviewed articles that discuss how DTI can help detect TBI. (Dr. Benson Aff. ¶ 18.) Eleven of these excerpts specifically address the effectiveness of DTI in detecting mild TBI (“mTBI”).

(*Id.*) Here is an example:

\*9 Detection of ultrastructural damage by using DT imaging is a major advance in diagnostic imaging. Several studies have supported the capability of FA to help identify white matter abnormalities in patients with traumatic brain injury including mTBI. As confirmed by our findings, abnormal FA is detected even in the absence of other imaging abnormalities.

Michael Lipton, *Diffusion-Tensor Imaging Implicates Prefrontal Axonal Injury in Executive Function Impairment Following Very Mild Traumatic Brain Injury*, RADIOLOGY, Sept. 2009, Vol. 252: No. 3. (Dr. Benson Aff. ¶ 18.f.) Another article stated, “Our study shows that DTI can be used to detect differences between patients with cognitive impairment after mild TBI and controls.” Calvin Lo, *Diffusion Tensor Imaging Abnormalities in Patients with Mild Traumatic Brain Injury and Neurocognitive Impairment*, COMPUT ASSIST TOMOGR, March/April 2009, Vol. 33, No. 2. (Dr. Benson Aff. ¶ 18.i.) Thus, there are peer-reviewed articles on the effectiveness of DTI and FA quantification based on comparative DTI scans for detecting diffuse axonal brain injury. Accordingly, the concern that drove the judge's decision in *Bowles* does not exist here.

#### *c. Ability of DTI and FA quantification to be tested and their error rate*

As to the ability to test DTI and the FA quantification based on it and their reliability, defendants' main arguments are that decreased FA in DTI scans cannot be challenged in an objective sense and cannot be replicated.<sup>FN3</sup> (DE # 56 at 13.) However, the Ruppels have presented evidence that the DTI scan and resulting FA quantification analysis can be tested and replicated and that the error rate is not higher than other methods commonly relied upon such as MRIs. (Dr. Benson Aff. ¶¶ 34-36.) According to Dr. Benson, DTI has “good test retest reliability.” (Dr. Benson Dep. 15.) He stated that DTI scans have shown high

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reproducibility. (Dr. Benson Aff. ¶ 34.) Dr. Benson explained the numerous steps he took to minimize the error rates in his DTI analysis and he stated: “Statistically speaking, the clusters of abnormal voxels found in areas of Dale Ruppel’s brain were there by chance is next to impossible.” (Dr. Benson Aff. ¶¶ 29–32.) He also stated that the quantitative analysis of FA is reproducible. (*Id.* ¶ 34.)

**FN3.** Dr. Drnovsek also concludes that Dr. Benson’s study of Ruppel is flawed because the DTI scan was performed 27 months after the accident at issue and that decrease in FA caused by mild TBI is not detectable after three months from the date of the cause of an injury. (Dr. Drnovsek Report 5.) Defendants do not appear to address this conclusion in their motion or reply. Still, the court notes that Dr. Drnovsek’s conclusion does not operate to block Dr. Benson’s testimony on DTI and FA quantification from coming in all together. Rather it is an argument that defendants can raise at trial as to the weight that the fact-finder should afford to Dr. Benson’s opinion.

As explained above, Ruppel has produced evidence that Dr. Benson’s methods can be tested and that the error rate is not higher than that of other commonly used methods. While defendants’ expert Dr. Drnovsek disagrees with Dr. Benson (Dr. Drnovsek Report 3), she does not have as much experience in this area as Dr. Benson. Dr. Benson is a behavioral neurologist who has been involved in research using advanced MRI methods for eighteen years. (Dr. Benson Aff. ¶ 4.) He has focused his research on TBI imaging for the past five years and has published a paper on how DTI scans of FA correlate with TBI severity. (*Id.*) On the other hand, Dr. Drnovsek, a neuroradiologist, does not do [diffusion tensor imaging](#) and before becoming involved in this case her only experience with DTI was a basic familiarity with the literature about DTI and attendance at conferences that “elaborate[d] on

[DTI] application in different pathologies, including traumatic [brain injury](#).” (Dr. Valerie Drnovsek Dep. 16–17, Pl.’s Exh. 15, DE # 57–15.) She has not done any personal research into DTI. (*Id.* at 17.) Her criticism of Dr. Benson’s methods was based on her reading of two articles on the subject. (*Id.* at 42.)

\*10 In *Wagoner v. Schlumberger Tech. Corp.*, a proposed expert witness, a neuroradiologist, had never reviewed a DTI scan before analyzing one for the trial and had only read one article on DTI. No. 07–CV–244, [2008 U.S. Dist. LEXIS 118764](#), at \*2, [2008 WL 5120750](#) (D. Wyo. June 20, 2008). The trial judge found that the witness did not have any special expertise on DTI and excluded any testimony from the expert about his opinion on the DTI scans. *Id.* Here, the Ruppels have not moved to exclude Dr. Drnovsek’s testimony. However, Dr. Drnovsek, like the expert in *Wagoner*, has not been shown to have special expertise in DTI and Dr. Benson has been shown to have this expertise. Therefore, the court will not exclude Dr. Benson’s testimony based on conflicting testimony from Dr. Drnovsek as to DTI’s error rate, testability, and replicability. This disagreement can be explored at trial.

*d. Alternative explanations for the decreased white matter in the DTI images*

Defendants argue that Dr. Benson should not be able to testify as to his determination that the DTI image indicated that Ruppel had [diffuse axonal brain injury](#) because it showed that Ruppel’s white matter had decreased in comparison to scans done of control patients because Dr. Benson did not consider alternative explanations, primarily aging, for the decreased white matter. However, this argument is not supported by the evidence. Dr. Benson testified that while Ruppel was 46 at the time of his DTI scan and the mean age of the control group was the 32, the analysis was corrected to account for age. (Dr. Benson Dep. 65.) He also stated that the age effect on FA is well-known and easily accounted for. (Dr. Benson Aff. ¶ 28.) He stated that he normalized the results to

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account for the effect of age. (Dr. Benson Dep. 36.) The Ruppels have also submitted a chart that shows the amount of FA in Ruppel's scan as compared to a group of 50 controls many of whom are his age or older. (DE # 58-1 at 18.) The effect of aging is certainly an issue that can be probed at trial, but it is not a basis for excluding Dr. Benson's opinion.

Defendants, pointing to Dr. Drnovsek's report, also argue that Dr. Benson did not account for alternative explanations such as the variations in FA in structures abutting the basal ganglia and thalamic nuclei. (Dr. Drnovsek Report 4.) However, Dr. Benson contends that these problems are presented by scans that look at gray matter, not those that look only at white matter such as the ones he employs. The difference in opinion between the two experts is something that can be addressed at trial and does not make Dr. Benson's method unreliable.

Further, defendants point to Dr. Benson's testimony that other diseases can affect FA quantification. (Dr. Benson Dep. 67-69.) However, Dr. Benson explains that many of these diseases are rare, and that some of the more common ones, such as [stroke](#) and MS, would also come up on a regular MRI scan if they would come up on a DTI scan. (*Id.* at 69.) Defendants also raise the issue that Ruppel's DTI scan could have been affected by the medications he was on. (Dr. Drnovsek Report 3.) This is an issue they can address during cross-examination.

\*11 Defendants also point to Dr. Benson's testimony that "So obviously you're going to have variance, okay, with any type of measurement, there is error, there's a number of different sources, some physiologic, some machine, right, and in this case, age is a factor as well." (Dr. Benson Dep. 35.) Defendants present their argument that Dr. Benson attributed this error just to FA quantification, but it appears that he thinks these errors can accompany any type of measurement. He stated: "I am going to always let's say err[ ] on the side of respecting the lack of absolute cer-

tainty that we have in our field. I mean it is the nature of medicine, not just science." Dr. Benson also corrected his results for motion during the scan. (*Id.* at 68.) In any case, Dr. Benson's deposition and affidavit testimony show that he was aware of possible alternative explanations of Ruppel's decreased white matter and that both the method and Dr. Benson's application of the method accounted for these possibilities. His conclusion took into account alternative explanations for his results and that the only way to diagnose [diffuse axonal injury](#) with complete certainty is autopsy. (*Id.* at 66.) Therefore, the possibility of alternative explanations does not bar Dr. Benson's testimony; rather it goes toward the weight to be given to his opinion. *See e.g., Cooper v. Carl A. Nelson & Co., 211 F.3d 1008, 1021 (7th Cir.2000).*

*b. Nature of Dr. Benson's opinion and how careful he was in reaching it*

In this case, it appears that Dr. Benson's opinion grew naturally and directly out of the research that he has conducted independently of the litigation and he has been as careful as he would be in his regular professional work outside his paid litigation consulting. First, the evidence shows that DTI and FA quantification is a regular focus of Dr. Benson's work and research. He has focused on TBI imaging for five years at the MR Research Center at Detroit Medical Center. (Dr. Benson Aff. ¶ 4.) He is also an investigator on a fifteen-year project entitled "Utility of MRI Techniques in Prediction of TBI Outcome" funded through a grant by the National Institute on Disability and Rehabilitation Research. (*Id.* ¶ 2.) In 2007, he published an article entitled *Global White Matter Analysis of Diffusion Tensor Images of Injury Severity in Traumatic Brain Injury* in the JOURNAL OF NEUROTRAUMA . (*Id.* ¶ 3.) In 2010, he testified before the United States House Judiciary about how DTI and other advanced imaging methods would improve the diagnosis and management of concussions in sports. (*Id.* ¶ 2.) Thus, the evidence shows that Dr. Benson regularly researches about and uses DTI and FA quantification to detect TBI. This is not a

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method or area of research that he has adopted just for litigation. It appears that as the Ruppels' retained expert, he only applied his methods to Ruppel and reached his opinion because of his involvement in this litigation. However, because the methods he employed grew out of and is consistent with his regular work, Dr. Benson's opinion as to Ruppel appears reliable.

\*12 Second, without pointing to any evidence, defendants accuse Dr. Benson of not using “the same level of intellectual vigor that characterizes the practice of an expert in the regular field.” However, Dr. Benson's expert report, deposition, and affidavit do not show that he was not careful in reaching his conclusion or that he lacked intellectual vigor. Thus, there is no evidence to show that his opinion should not be admitted on this basis. Defendants can use cross-examination and their own witnesses's testimony to raise at trial the issue of the level of intellectual vigor that Dr. Benson employed.

Overall it is important to note that DTI is just one component of Dr. Benson's diagnosis of [diffuse axonal injury](#) for Ruppel. In *Whilden*, a Colorado state trial court found that an expert could base his opinion on DTI as long as he also considered the patient's history. No. 08-cv-4210 at 4 (allowing an expert witness to rely on DTI evidence when testifying as to the diagnosis of mTBI and its possible causation from an automobile accident as long as the expert's opinion was not based solely on DTI). Here, Dr. Benson's opinion was based on four components: the patient's history, the neurologic examination of the patient, the patient's neuropsychological results, and the patient's [brain imaging](#) including DTI. (Dr. Benson Dep. 69.) Dr. Benson's clinical assessment was based on medically accepted neurological and mental status examination techniques. (Dr. Benson Aff. ¶ 8.) In his affidavit, Dr. Benson stated:

While DTI itself cannot diagnose the cause of white matter damage, the history of the motor vehicle ac-

cident as described by Dale Ruppel and medical records reviewed provide a solid basis to conclude that the damage shown on [diffusion tensor imaging](#) using fractional anisotropy was caused by the motor vehicle collision of January 8, 2008.

(*Id.* ¶ 33.) Thus, like the expert in *Whilden*, Dr. Benson did not use DTI alone to diagnose [diffuse axonal injury](#). In sum, DTI and comparative FA quantification based on DTI images are reliable methods and Dr. Benson's opinion will not be excluded under [RULE 702](#) and *Daubert*.

## 2. Wording of Dr. Benson's opinion

Defendants argue that Dr. Benson's opinion is invalid because he says that the evidence “suggests” that Ruppel has a [diffuse axonal brain injury](#) and that it was caused by the accident. (DE # 56 at 10–11.) It seems that this argument goes to whether Dr. Benson's testimony is relevant and whether it would assist the trier of fact. Defendants argument appears to be that Ruppel can only present evidence of his injury if he has evidence that shows with one hundred percent certainty that he has a [diffuse axonal brain injury](#). This is not the case. *Daubert*, 509 U.S. at 590; *United States v. Cyphers*, 553 F.2d 1064, 1072–73 (7th Cir.1977) (stating that there is no requirement that “an expert's opinion testimony must be expressed in terms of a reasonable scientific certainty in order to be admissible” and that the Seventh Circuit “adheres to the rule that an expert's lack of absolute certainty goes to the weight of his testimony, not to its admissibility”). The Seventh Circuit has stated, “we do not require utter certainty in medical opinions, nor would we expect dogmatic diagnoses from a careful scientist.” *Amax Coal Co. v. Beasley*, 957 F.2d 324, 328 (7th Cir.1992).

\*13 Indeed, courts regularly admit opinion evidence that falls short of a certain conclusion. *See e.g., Coachmen Indus., Inc. v. Kemlite*, 3:06-cv-160, 2008 WL 4858385, at \*8 (N.D.Ind. Nov.10, 2008) (admitting an expert's testimony that “specific changes made

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to the MA resin values were ‘most likely’ responsible for the distortions”); *Hardiman v. Davita Inc.*, No. 2:05-cv-262, 2007 WL 1395568, at \*6 (N.D.Ind. May 10, 2007) (finding that an expert's opinion that there was a 95% probability of causation was relevant and admissible); *Troutner v. Marten Trans., Ltd.*, No. 2:05-cv-40, 2006 WL 3523542, at \*4 (N.D.Ind. Dec.5, 2006) (admitting an expert's testimony when the conclusion in his expert report was that inadequate maintenance was “the most likely root cause of the failure and injury to” the plaintiff). Further, an expert may meet *Daubert's* relevancy requirement by offering a “hypothetical explanation of the possible or probable causes of an event [that] would aid the jury in its deliberations.” *Smith*, 215 F.3d at 719.

In the summary of findings section of his report, Dr. Benson stated that DTI revealed a low FA in the white matter regions of Ruppel's brain “suggesting axonal injury from trauma.” (Dr. Randall Benson, “Report of Findings of TBI Research Protocol,” Defs.' Exh. I, DE # 56–9.) However, Dr. Benson did not only use the word “suggest” in providing his opinion. He also stated:

The absence of focal injury (contusion) and the presence of bilaterally symmetric axonal injury to deep white matter structures suggests that the mechanism of injury was acceleration/deceleration rather than direct impact to the skull. His history of motor vehicle accident is consistent with the findings on his MRI study.

(*Id.*) Thus this excerpt of his report, by stating that axonal injury to the white matter of Ruppel's brain was present, more definitively stated Ruppel's injury. Also, in his report Dr. Benson wrote that Ruppel “appears to have suffered a close [head injury](#) as a result of being rear-ended.” (*Id.*)

Further, in his deposition, Dr. Benson explained that while he used the word “suggest” in his report, at

the time he “really felt strongly that all the evidence pointed to [diffuse axonal injury](#) .” (Dr. Benson Dep. 67.) Dr. Benson's “certainty is an issue for the jury and does not affect admissibility.” *Stutzman v. CRST, Inc.*, 997 F.2d 291, 296 (7th Cir.1993). Thus under federal evidentiary rules, Dr. Benson's opinion may be admitted under [RULE 702](#). Importantly, Dr. Benson's language in presenting his opinion does not render it inadmissible when it is based on reliable methods. The Seventh Circuit has concluded that “the Federal Rules do not contain any threshold level of certainty requirement. As long as a medical expert's qualifications are proper and the expert relies on appropriate types of information under [RULE 703](#), the district court does not abuse its discretion by admitting the medical expert's testimony.” *Id.* Dr. Benson's testimony is not speculation because, as determined above, he used scientifically reliable methods to reach his conclusion.

\*14 In sum, defendants' motion to exclude Dr. Benson's opinion as to [diffuse axonal injury](#) will be denied. Defendants' primary arguments for exclusion of Dr. Benson's testimony were his reliance on DTI to reach his result and his use of the word “suggest” for his diagnosis. As discussed above, DTI is a reliable method especially when used in conjunction with the other medically accepted methods relied upon by Dr. Benson. Beyond these two issues, defendants have not questioned Dr. Benson's qualifications to testify as to Ruppel's diagnosis and its causation and he appears qualified to do so. (*See* Dr. Benson Aff. ¶ 19; Dr. Benson Curriculum Vitae, DE # 58–1.) Dr. Benson may testify as to Dr. Ruppel's diagnosis of [diffuse axonal injury](#) and as to its causation.

## II. SUMMARY JUDGMENT

Summary judgment should be granted “if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to a judgment as a matter of law.” [FED. R. CIV. P. 56\(a\)](#). The party seeking summary judgment “bears the initial responsibility of informing the district court of the basis for its motion, and identifying” those materials

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listed in [RULE 56\(c\)](#) which “demonstrate the absence of a genuine issue of material fact.” *Celotex Corp. v. Catrett*, 477 U.S. 317, 323, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986).

Once the moving party has met its burden, the nonmovant may not rest upon mere allegations. Instead, “[t]o successfully oppose a motion for summary judgment, the nonmoving party must come forward with specific facts demonstrating that there is a genuine issue for trial.” *Trask–Morton v. Motel 6 Operating L.P.*, 534 F.3d 672, 677 (7th Cir.2008). “It is not the duty of the court to scour the record in search of evidence to defeat a motion for summary judgment; rather, the nonmoving party bears the responsibility of identifying the evidence upon which he relies.” *Horney v. Speedway SuperAmerica, LLC*, 526 F.3d 1099, 1104 (7th Cir.2008). Furthermore, when evaluating a motion for summary judgment, the court views the record and makes all reasonable inferences in a light most favorable to the nonmovant. *Popovits*, 185 F.3d at 731. If the non-moving party cannot establish an essential element of its claim, [RULE 56\(a\)](#) requires entry of summary judgment for that claim. *Massey v. Johnson*, 457 F.3d 711, 716 (7th Cir.2006) (citing *Celotex*, 477 U.S. at 322–23).

Defendants' summary judgment argument is that because all evidence of Ruppel's diagnosis of [diffuse axonal injury](#) and its causation are excluded under *Daubert* or for failure to comply with [FEDERAL RULE OF CIVIL PROCEDURE 26\(a\)\(2\)](#), he has no evidence to survive a motion for summary judgment.

The court will now address defendants' arguments related to [FEDERAL RULE OF CIVIL PROCEDURE 26\(a\)\(2\)](#). In their response to defendants' motion for summary judgment, the Ruppels presented affidavits of four physicians, Dr. Robert Ward, Dr. Bradley Sewick, Dr. Patrick Casey, and Dr. Pareigis, who treated Ruppel. (Pls.' Exhs. 3, 5, 6, DE57–3, 57–5, 57–6.) In reply, defendants argue that the first three physicians' proposed testimony, as set forth in

their affidavits, extends beyond what the plaintiffs had outlined in their reports and summaries pursuant to [FEDERAL RULE OF CIVIL PROCEDURE 26\(a\)\(2\)](#). Defendants, citing to *Doe v. Johnson*, 52 F.3d 1448, 1464 (7th Cir.1995), appear to be arguing that these doctors' testimony should be limited to the statements made in their medical records because anything beyond that was not disclosed under [RULE 26](#) and should be excluded under [RULE 37](#).

\*15 [RULE 26.2](#) of the LOCAL RULES OF THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF INDIANA provides that if a party seeks relief under [RULE 37](#), copies of the portions of the disclosures in dispute “shall be filed with the court contemporaneously with any motion filed under” that [RULE](#). Defendants did not file a copy of plaintiffs' [RULE 26](#) disclosures with their response. While this may not have been required since they did not move under [RULE 37](#) separately, it certainly would have assisted the court in evaluating their argument. Instead defendants argue that Dr. Ward's, Dr. Casey's, and Dr. Sewick's testimony is inconsistent with the statements made in their medical records. In a sur-reply, plaintiffs contend that Dr. Ward, Dr. Casey, and Dr. Sewick, as well as Dr. Pareigis, were “properly disclosed” in their [RULE 26](#) disclosures and their medical charts were provided to defendants with updates sent as Ruppel's treatment continued. (DE # 62 at 2.) They state that Dr. Ward, Dr. Casey, Dr. Sewick, and Dr. Pareigis are all treating physicians and none of them were retained or specially employed for this litigation. (*Id.*)

First, it appears that these witnesses were only required to give statements under [RULE 26\(a\)\(2\)\(C\)](#) and not expert reports under [RULE 26\(a\)\(2\)\(B\)](#). [RULE 26\(a\)\(2\)\(B\)](#) states that the disclosure of expert testimony must be accompanied by a written report when the witness is “one retained or specially employed in the case or one whose duties as the party's employee regularly involve giving expert testimony.” Effective December 1, 2010, [RULE 26](#) was amended

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to add section 26(a)(2)(C). This section provides that expert witnesses who are not required to submit a report under 26(a)(2)(B) must submit a statement that provides a summary of the facts and opinions to which the witness expects to testify. The commentary to this amendment states that it will frequently apply to “physicians or other health care professionals.” They also provide that under this subsection “[c]ourts must take care against requiring undue detail, keeping in mind that these witnesses have not been specially retained and may not be as responsive to counsel as those who have.” Defendants do not argue that Dr. Ward, Dr. Pareigis, Dr. Sewick and Dr. Casey were not Ruppel's treating physicians, or more importantly, that they were specially retained or employed for this litigation. Thus, they were only required to comply with RULE 26(a)(2)(C). See *Coleman v. Am. Family Mut. Ins. Co.* No. 2:10-cv-167, 2011 WL 2173674, at \*4 (N.D.Ind. June 2, 2011).

Second, the court has no reason to think that the proposed testimony is so inconsistent with the RULE 26(a)(2)(C) disclosures that it should be struck down under RULE 37. Defendants have not pointed to plaintiffs' RULE 26(a)(2)(C) disclosures, so the court cannot compare them to the proposed testimony and has no basis for excluding the testimony for noncompliance with RULE 26. Defendants argue that Dr. Ward, Dr. Pareigis, and Dr. Sewick cannot testify that Ruppel has diffuse axonal injury because in their medical records for Ruppel they only stated that he had closed head injury. Defendants, without pointing to any evidence from their expert medical witnesses or otherwise, assert that what the physicians have done is similar to “a doctor who makes a diagnosis of a broken bone, tenders x-rays and information relative only to a broken foot for 2 or 3 years, then later argues that the diagnosis should have covered diagnosis of a broken hand as well because they are both broken bones.” (DE # 61 at 2.)

\*16 In contrast, all five of plaintiffs' expert witness physicians offer testimony that a diffuse axonal

injury is a type of closed head injury. (Dr. Robert C. Ward. Aff. ¶ 4, Pls.' Exh. 3, DE # 57-3; Dr. Pareigis Aff. ¶ 7; Dr. Patrick Casey Aff. ¶¶ 5, 8, Pls.' Exh. 5, DE # 57-5; Dr. Bradley Sewick Aff. ¶ 5-6, Pls.' Exh. 6, DE # 57-6; Dr. Benson Aff. ¶ 5). Dr. Sewick's explanation is representative: “A diffuse axonal brain injury is often caused by a closed head injury or traumatic brain injury. A diagnosis of closed head injury and traumatic brain injury without evidence of focal injury is suggestive of diffuse axonal injury.” (Dr. Sewick Aff. ¶ 5.) Accordingly, the difference between statements of closed head injury in the medical records and a diagnosis of diffuse axonal injury may not be as stark as defendants suggest. Certainly, it does not appear to provide a basis to exclude the testimony under RULE 37. Rather, this appears to be an argument that defendants can delve into during cross examination at trial. Accordingly, these witnesses can offer testimony related to diffuse axonal injury at trial.

In evaluating whether the Ruppels have sufficient evidence as to his claim of diffuse axonal injury to allow it to survive summary judgment, the court has one remaining, and familiar, argument to address. As discussed above, defendants seem to argue that Dr. Benson's opinions as to the diagnosis and causation of diffuse axonal injury will not help Ruppel survive summary judgment because Dr. Benson uses the word “suggest.” While the court has already discussed that this opinion is admissible it must now address whether, under Indiana law, which applies to the substantive law questions in this case, Dr. Benson's testimony has enough probative value that Ruppel can use it towards his burden of proof for causation.

As defendants point out, in Indiana, “[w]hen the issue of cause is not within the understanding of a lay person, testimony of an expert witness on the issue is necessary.” *Daub v. Daub*, 629 N.E.2d 873, 877-78 (Ind.Ct.App.1994). To have probative value, the testimony must go beyond speculation and mere possibility. *Id.* When evaluating an expert's opinion, Indiana courts tend to look at whether the expert can tes-

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tify to a reasonable degree of medical certainty, but even an opinion that something is “possible” may be admitted if presented with other evidence. *Topp v. Leffers*, 838 N.E.2d 1027, 1033 (Ind.Ct.App.2005); *Colaw v. Nicholson*, 450 N.E.2d 1023, 1030 (Ind.Ct.App.1983) (“[E]xpert medical opinion couched in terms less than that of a reasonable degree of medical certainty; such as ‘possible,’ ‘probable,’ or ‘reasonably certain,’ are admissible and do have probative value. However, such medical testimony standing alone, unsupported by other evidence, is not sufficient to support a verdict.”) Therefore, an opinion does not need to be stated in terms of “medical certainty,” but to be admitted alone, it must be more conclusive than stating a “possibility.” *Longardner v. Citizens Gas & Coke Util.*, No. 49A02–511, 2006 WL 3230303, at \*7 (Ind.Ct.App. Nov.8, 2006); *Hardiman*, 2007 WL 1395568, at \*15.

\*17 Here, Dr. Benson's report stated that Ruppel “appears to have suffered a close [head injury](#) as a result of being rear-ended.” (Dr. Benson Report.) He also stated in his deposition that although he used the word “suggests” in his report he “really felt strongly that all the evidence pointed to [diffuse axonal injury](#).” (Dr. Benson Dep. 67.) Further, his opinion was based on scientifically reliable methods. He based his opinion on Ruppel's history, his neurologic examination of Ruppel, Ruppel's neuropsychological results, and his analysis of Ruppel's [brain imaging](#) including DTI. Dr. Benson's opinion is based on more than speculation and creates an issue of material fact as to both the diagnosis and causation of [diffuse axonal injury](#). *Hardiman*, 2007 WL 1395568, at \*17.

Even if Dr. Benson's testimony can not be admitted alone, there is other evidence of Ruppel's [diffuse axonal injury](#). Dr. Pareigis wrote in her initial evaluation of Ruppel on March 28, 2008, that her impression was that Ruppel had “[c]losed [head injury](#) with probable [diffuse axonal injury](#).” (Physicians Center of Physical Medicine's Medical Records for Dale Ruppel, Defs.' Exh. C, DE # 56–3 at 32.) Dr.

Pareigis and the three other treating physicians all indicate that they would testify as to Ruppel's [diffuse axonal injury](#) and its causation. Defendants own expert, Dr. Peter Carney has diagnosed Ruppel with [post-concussion syndrome](#) which appears to be related to closed [head injury](#). (Dr. Peter Carney Report Sections D and F2.1, Pl.'s Exh. 17,<sup>FN4</sup> DE # 64–1.) So the Ruppels have sufficient evidence to create a genuine factual dispute as to whether Ruppel suffered [diffuse axonal injury](#) and whether that injury was caused by the accident with Kucanin.

FN4. The Ruppels cite to and quote from this exhibit in their summary judgment response, but it was inadvertently omitted from that filing. The Ruppels have moved for leave to file this exhibit now. (DE # 64.) The report is from defendants' expert witness, so they have had access to it. Therefore, the motion is **GRANTED**, and the court had considered the parts of the report and deposition that were relied on in plaintiffs' response.

In conclusion, for the foregoing reasons defendants' motion to exclude evidence and motion for summary judgment (DE54–55) are **DENIED**.

#### **SO ORDERED.**

N.D.Ind.,2011.

Ruppel v. Kucanin

Not Reported in F.Supp.2d, 2011 WL 2470621 (N.D.Ind.), 85 Fed. R. Evid. Serv. 859

END OF DOCUMENT



2016 WL 462960

Only the Westlaw citation is currently available.  
United States District Court,  
D. Colorado.

Miriam White, Plaintiff,  
v.

Deere & Company, John Deere Limited, and John  
Does 1-5, Defendants.

Civil Action No. 13-cv-02173-PAB-NYW

|  
Signed February 8, 2016

#### Attorneys and Law Firms

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Jacqueline Ventre Roeder, Charles L. Casteel, Jordan Lee Lipp, Davis Graham & Stubbs, LLP, Denver, CO, for Defendants.

### ORDER

PHILIP A. BRIMMER, United States District Judge

\*1 This matter is before the Court on defendants' Motion to Exclude Randall Benson's Opinions Derived from Neuroimaging [Docket No. 103].

#### I. BACKGROUND

This is a products liability action that arises out of an accident that occurred on August 17, 2011 while plaintiff Miriam White was operating her Deere Model 4600 compact utility tractor and Model 460 loader. Ms. White claims that she suffered facial injuries and traumatic brain injury ("TBI") as a result of a hay bale falling onto her head while she was operating the tractor. Docket No. 103 at 1. Ms. White alleges that her tractor had design defects that created an unreasonable risk of injury from falling hay bales and that her injuries resulted from these defects. Docket No. 150 at 2-3.

Ms. White has designated Randall Benson, a board-certified neurologist, as a medical expert. Docket No. 103 at 1. Dr. Benson opines that Ms. White suffered a [traumatic brain injury](#) as a result of the August 17, 2011 incident. Docket No. 116-3 at 18. He bases his opinion, in part, on results derived from a [Magnetic Resonance Imaging](#) ("MRI") sequence called [diffusion tensor imaging](#) ("DTI"). *Id.* at 20-21. Defendants move to exclude Dr. Benson's DTI findings on two grounds. First, defendants argue that Dr. Benson's DTI findings are unreliable. Docket No. 103 at 3. Second, defendants argue that Dr. Benson's DTI findings will not assist the trier of fact to determine whether Ms. White's alleged [brain injuries](#) were caused by the August 17, 2011 accident. *Id.* at 4.

#### II. FEDERAL RULE OF EVIDENCE 702

[Rule 702 of the Federal Rules of Evidence](#) provides that:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.

[Fed. R. Evid. 702](#). As the rule makes clear, while required, it is not sufficient that an expert be qualified based upon knowledge, skill, experience, training, or education to give opinions in a particular subject area. Rather, the Court must "perform[ ] a two-step analysis." [103 Investors I, L.P. v. Square D Co.](#), 470 F.3d 985, 990 (10th Cir. 2006). After determining whether the expert is qualified, the specific proffered opinions must be assessed for reliability. *See id.*; [Fed. R. Evid. 702](#) (requiring that the testimony be "based on sufficient facts or data," be the "product of reliable principles and methods," and reflect a reliable application of "the principles and methods to the facts of the case").

Rule 702 imposes on the district court a “gatekeeper function to ‘ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.’ ” *United States v. Gabaldon*, 389 F.3d 1090, 1098 (10th Cir. 2004) (quoting *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993)). To perform that function, the Court must “assess the reasoning and methodology underlying the expert’s opinion, and determine whether it is both scientifically valid and applicable to a particular set of facts.” *Dodge v. Cotter Corp.*, 328 F.3d 1212, 1221 (10th Cir. 2003) (citing *Daubert*, 509 U.S. at 592-93). Where an expert relies on experience, the expert “ ‘must explain how that experience leads to the conclusion reached, why that experience is a sufficient basis for the opinion, and how that experience is reliably applied to the facts.’ ” *United States v. Medina-Copete*, 757 F.3d 1092, 1104 (10th Cir. 2014) (quoting Fed. R. Evid. 702, advisory committee notes).

\*2 Although it is not always a straightforward exercise to disaggregate an expert’s method and conclusion, when the conclusion simply does not follow from the data, a district court is free to determine that an impermissible analytical gap exists between premises and conclusion. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). In examining an expert’s method, however, the inquiry should not be aimed at the “exhaustive search for cosmic understanding but for the particularized resolution of legal disputes.” *Daubert*, 509 U.S. at 597. It is the specific relationship between an expert’s method, the proffered conclusions, and the particular factual circumstances of the dispute that renders testimony both reliable and relevant.

In addition to the expert having appropriate qualifications and methods, the proponent of the expert’s opinions must demonstrate that the process by which the expert derived his or her opinions is reliable. *United States v. Crabbe*, 556 F. Supp. 2d 1217, 1220 (D. Colo. 2008). When assessing reliability, “the court may consider several nondispositive factors: (1) whether the proffered theory can and has been tested; (2) whether the theory has been subject to peer review; (3) the known or potential rate of error; and (4) the general acceptance of a methodology in the relevant scientific community.” *103 Investors I*, 470 F.3d at 990 (citing *Daubert*, 509 U.S. at 593-94). These considerations are not exhaustive. Rather, “the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable.” *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999). Ultimately, the test requires that the expert “employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” *Id.*

While plaintiff, as the proponent of the challenged testimony, has the burden of establishing admissibility, the proffer is tested against the standard of reliability, not correctness; she need only prove that “the witness has sufficient expertise to choose and apply a methodology, that the methodology applied was reliable, that sufficient facts and data as required by the methodology were used and that the methodology was otherwise reliably applied.” *Crabbe*, 556 F. Supp. 2d at 1221.

Once the standard of reliability “is met, the court will still consider other non-exclusive factors to determine whether the testimony will assist the trier of fact: (1) whether the testimony is relevant; (2) whether it is within the juror’s common knowledge and experience; and (3) whether it will usurp the juror’s role of evaluating a witness’[ ] credibility.” *United States v. Rodriguez-Felix*, 450 F.3d 1117, 1123 (10th Cir. 2006).

In sum, assuming an objection is properly made, expert testimony must be excluded if the expert is unqualified to render an opinion of the type proffered, if the opinion is unreliable, if the opinion will not assist the trier of fact, or if the opinion is irrelevant to a material issue in the case.

### III. ANALYSIS

Defendants do not challenge Dr. Benson’s qualifications, the application of MRI techniques other than DTI,<sup>1</sup> or the four sources of data other than DTI on which Dr. Benson bases his conclusions. Defendants’ challenge focuses squarely on Dr. Benson’s use of DTI and his opinions based on DTI. The Court’s Practice Standards regarding Rule 702 objections require that the party seeking to exclude an opinion of an opposing expert identify the opinion sought to be excluded. See Practice Standards (Civil Cases), Judge Philip A. Brimmer, § III.G. The only specific opinion that defendants identify in their motion is Dr. Benson’s fifth piece of evidence regarding brain imaging, including DTI. Docket No. 103 at 2. The Court therefore assumes that the opinion defendants seek to exclude is that finding in Dr. Benson’s report that states as follows: “DTI voxel-wise analysis revealed a large number of white matter tracts with abnormally reduced FA.” Docket No. 116-3 at 20. Dr. Benson also refers to these findings later in his report in support of his conclusion that the DTI “reveals axonal injury predominantly in bilateral frontal lobes.” *Id.* at 21-22.

#### A. Reliability of DTI for Identifying a TBI

\*3 Defendants argue Dr. Benson should be precluded

from presenting his opinions based on DTI because DTI is unreliable as a means for diagnosing individual patient injuries. Docket No. 103 at 3. Defendants cite a November 2014 research paper by Wintermark et al. that finds DTI to be suitable only for research and concludes that there is insufficient evidence to support its routine clinical use at the individual patient level. Docket No. 103 at 3-4; Docket No. 103-1 at 76.

Plaintiff responds that the non-exclusive *Daubert* reliability factors establish that Dr. Benson's opinions based on DTI are admissible. Docket No. 116 at 11-14. While the Wintermark article may undermine the weight of Dr. Benson's DTI findings, plaintiff cites articles that support DTI's reliability. *See, e.g.*, Docket No. 116-1 at 7, ¶ 10; Docket No. 116-6. The articles cited by plaintiff appear to support the conclusion that DTI is a generally accepted diagnostic measure for TBI. One peer-reviewed article cited by plaintiff reviews the last decade of research conducted on DTI and finds that "[a] unifying theme can be deduced from this large body of research: DTI is an extremely useful and robust tool for the detection of TBI-related brain abnormalities. The overwhelming consensus of these studies is that low white matter FA [fractional anisotropy] is characteristic of TBI." M.B. Hulkower et al., *A Decade of DTI in Traumatic Brain Injury: 10 Years and 100 Articles Later*, 34 AM J NEURORADIOL 2064, 2071 (2013). This article also found "an overwhelming consensus that imaging abnormalities detected with DTI are associated with important clinical outcomes. This further validates DTI as a meaningful measure of clinically important brain injury." *Id.* Another peer-reviewed article cited by plaintiff states that the "overwhelming consensus of a substantial body of scientific inquiry supports DTI for detecting pathology in [mild TBI ("mTBI")] patients," Docket No. 116-6 at 4, and directly challenges the criticisms of DTI proffered by defendants' expert, Dr. Hal Wortzel. *Id.* at 2 ("The misleading and often entirely unsubstantiated opinions and positions of Wortzel, Tsiouris, and Filippi (2014), in opposition to diffusion tensor imaging (DTI) as a useful measure in mTBI, are at odds with the clear consensus of the scientific literature regarding [mTBI], its clinical assessment, and its natural history."). The Court notes that the November 2014 research paper cited by defendants acknowledges that "there is evidence from group analyses that DTI can identify TBI-associated changes in the brain across a range of injury severity, from mild to severe TBI. Evidence also suggests that DTI has the sensitivity necessary to detect acute and chronic TBI-associated changes in the brain, some of which correlate with injury outcomes." Docket No. 103-1 at 78. Thus, the Court finds that defendants have not shown that the November 2014

research paper, or other evidence, establishes that DTI is an unreliable technology to detect mild TBI-associated changes in the brain.

In his affidavit, Dr. Benson discusses some of the testing that he has conducted "to demonstrate the clinical validity and reliability of DTI in TBI" as part of his work with the U.S. Army Telemedicine and Advanced Technology Research Command at a "Diffusion MRI TBI Roadmap Development Workshop." Docket No. 116-1 at 11-12, ¶ 18. As part of his research for his presentation at that workshop, Dr. Benson found "excellent correlation between DTI and injury severity" and "repeatability of DTI for a single mTBI case scanned in two different cities." *Id.* Dr. Benson also notes that "[o]ther speakers presented data showing the correlations of DTI with neurocognitive outcome and experience using DTI on Iraq war veterans." *Id.* Dr. Benson states the known rate of error for DTI analysis is .4%, Docket No. 116-1 at 14, ¶ 28; however, he provides no support for this rate.

\*4 Application of the four non-dispositive *103 Investors* factors supports plaintiff's argument that DTI is a reliable methodology. *See 103 Investors I*, 470 F.3d at 990 (citing *Daubert*, 509 U.S. at 593-94). Regarding whether DTI can be and has been tested, Dr. Benson's affidavit discusses the testing he has conducted to confirm DTI results. Docket No. 116-1 at 11-12, ¶ 18. The publications and workshops cited by Dr. Benson support the conclusion that DTI has been subjected to peer review and is generally accepted in the medical community as a tool for detecting TBI. *Id.* at 10-12, ¶¶ 16, 18. While plaintiff has not supported her argument that DTI has a known error rate, no single *103 Investors* factor is dispositive. *See 103 Investors I*, 470 F.3d at 990 (citing *Daubert*, 509 U.S. at 593-94). The Court notes that DTI findings have been admitted by multiple courts. *Andrew v. Patterson Motor Freight, Inc.*, 2014 WL 5449732, at \*8 (W.D. La. Oct. 23, 2014) ("In sum, the evidence submitted shows DTI has been tested and has a low error rate; DTI has been subject to peer review and publication; and DTI is a generally accepted method for detecting TBI.") (citation omitted); *Ruppel v. Kucanin*, 2011 WL 2470621, at \*6 (N.D. Ind. June 20, 2011) (finding DTI to be a reliable method); *Booth v. KIT, Inc.*, 2009 WL 4544743, at \*3 (D.N.M. Mar. 23, 2009) (denying motion to exclude expert testimony regarding findings from DTI). Accordingly, the Court finds that plaintiff has carried its burden of showing that DTI is a reliable technology and that Dr. Benson applied a reliable methodology in arriving at his challenged opinion.

## **B. "Fit" of Dr. Benson's DTI Findings**

Defendants argue that Dr. Benson's opinions derived from DTI do not "fit" this case. Docket No. 103 at 4; *see Bitler v. A.O. Smith Corp.*, 400 F.3d 1227, 1234 (10th Cir. 2004) ("A trial court must look at the logical relationship between the evidence proffered and the material issue that the evidence is supposed to support to determine if it advances the purpose of aiding the trier of fact. Even if an expert's proffered evidence is scientifically valid and follows appropriately reliable methodologies, it might not have sufficient bearing on the issue at hand to warrant a determination that it has relevant 'fit.' ") (citing *Daubert*, 509 U.S. at 591). Defendants assert that Dr. Benson's DTI findings show that plaintiff has only one or two white matter lesions and that Dr. Benson has not adequately addressed other possible causes for such findings in light of Ms. White's medical history, specifically, her injuries after being kneed in the head by a horse. Docket No. 103 at 5-6. On June 10, 2012, Ms. White was hit on the left side of her face by a horse's knee. Docket No. 81-3 at 6. After emergency medical services arrived and evaluated Ms. White, they determined that she should be transferred to the Medical Center of the Rockies. *Id.* There, Chris Cribari, M.D., noted that Ms. White was admitted with a diagnosis of a concussion and that the EMTs said she was repeating herself, had [retrograde amnesia](#), and was slow to respond. *Id.* Defendants claim that these are signs of [brain trauma](#) that Dr. Benson ignores. Docket No. 103 at 5. Defendants also argue that Dr. Benson does not "adequately consider or explain why the white matter lesions are so definitively attributable to the 2011 incident and not to [p]laintiff's psychiatric issues." *Id.* at 6. The Court notes that both the June 10, 2012 incident and plaintiff's psychiatric history are mentioned in Dr. Benson's report. *See* Docket No. 81-3 at 6, 8. Defendants also argue that "a fact-finder needs to determine ...whether [p]laintiff's alleged [brain injury](#) was caused by the 2011 incident at issue in this case" and claim that Dr. Benson's DTI findings are not relevant to the issue of causation. Docket No. 103 at 5.

In support of his conclusion that "[i]t is probable that [Ms. White's] permanent cognitive, emotional, and physical symptoms...are the direct result of the 8/17/11 injury and not the subsequent injury of 6/10/12," Dr. Benson relied on five sources of data: (1) the available biomechanical information regarding the August 17, 2011 injury event; (2) Ms. White's symptoms following the August 17, 2011 injury event; (3) findings from a neurobehavioral examination; (4) findings from a [neuropsychological assessment](#); and (5) Ms. White's [neuroimaging](#). Docket

No. 81-3 at 18-20. Thus, DTI is not the only source of information Dr. Benson uses to diagnose TBI. The [neuroimaging](#) he relies upon consists of FLAIR, SWI, and Gradient Echo imaging in addition to DTI. *Id.* at 20. Dr. Benson pairs the [neuroimaging](#) results with the [neuropsychological assessment](#), which notes impaired processing speed and working memory and delayed verbal memory, coding, and symbol search, to determine the presence of brain damage. *Id.* at 21. The reasons Dr. Benson articulates for identifying the August 17, 2011 incident as the source of plaintiff's traumatic [brain injury](#) are not based on DTI, and Dr. Benson readily admits that "[n]o standalone imaging technique allows for unequivocal determination of etiology absent clinical information." Docket No. 116-1 at 6. Dr. Benson compares the imaging findings to the other data sources and states that the "imaging findings match the biomechanics, chronic symptoms, neurobehavioral and neuropsychological findings." Docket No. 116-1 at 9. Applying the differential diagnosis procedure, Dr. Benson asserts that Ms. White's "injury/accident of 8/17/11 was the much more significant injury and rendered her vulnerable to the more mild[ ] concussion of 6/10/12." Docket No. 116-4 at 6. He also states that the "injury of 6/10/12, while inducing a [mild concussion](#), does not explain her clinical deficits that began when her head was crushed under the weight of a heavy hay bale on 8/7/11." *Id.*

\*5 The Court finds that defendants present no basis to exclude Dr. Benson's causation opinions on the grounds of the alleged unreliability or irrelevance of DTI for identifying a TBI suffered by Ms. White.

#### IV. CONCLUSION

For the foregoing reasons it is

**ORDERED** that defendants' Motion to Exclude Randall Benson's Opinions Derived from [Neuroimaging](#) [Docket No. 103] is **DENIED**.

#### All Citations

Slip Copy, 2016 WL 462960

#### Footnotes

<sup>1</sup> In their reply, defendants appear to broaden their argument to include Dr. Benson's conclusions drawn from Susceptibility Weighted Imaging (SWI) and Fluid Attenuated Inversion Recovery (FLAIR) imaging. Docket No. 130 at 3.

Defendants admit that SWI and FLAIR are “methodologically sound.” *Id.* A party generally may not raise an issue for the first time in a reply brief. See [Ulbarri v. City & Cty. of Denver](#), No. 07-cv-01814-WDM-MJW, 2011 WL 1336388, at \*2 (D. Colo. April 6, 2011) (citing [Hill v. Kemp](#), 478 F.3d 1236, 1250 (10th Cir. 2007)); [LNV Corporation v. Hook](#), No. 14-cv-00955-RM-CBS, 2015 WL 5679723, at \*3 (D. Colo. Sept. 25, 2015) (citing [Conroy v. Vilsack](#), 707 F.3d 1163, 1179 n.6 (10th Cir. 2013)). Accordingly, the Court will not consider defendants’ arguments related to SWI and FLAIR imaging.

28 Misc.3d 425, 900 N.Y.S.2d 639, 2010 N.Y. Slip Op. 20176  
(Cite as: 28 Misc.3d 425, 900 N.Y.S.2d 639)

**C**

Supreme Court, Kings County, New York.  
Cynette WILSON, Plaintiff,  
v.  
CORESTAFF SERVICES L.P. and Edwin Medina,  
Defendants.


May 14, 2010.

**Background:** Temporary employee asserted claim under New York City and State Human Rights Law against employment agency, alleging that she was retaliated against after she reported inappropriate action by fellow employee at work site. Cross-motions regarding exclusion of expert testimony were filed.

**Holding:** The Supreme Court, Kings County, Robert J. Miller, J., held that expert testimony regarding witness's submission to and results of Functional Magnetic Resonance Imaging (fMRI) test was inadmissible.


Defendants' motion granted; Plaintiffs' motion denied.

West Headnotes

**[1] Evidence 157**  **546**


157 Evidence  
157XII Opinion Evidence  
157XII(C) Competency of Experts  
157k546 k. Determination of question of competency. [Most Cited Cases](#)

The admissibility and limits of expert testimony is primarily in the discretion of the trial court.


**[2] Evidence 157**  **508**

157 Evidence  
157XII Opinion Evidence  
157XII(B) Subjects of Expert Testimony  
157k508 k. Matters involving scientific or

other special knowledge in general. [Most Cited Cases](#)


**Evidence 157**  **535**

157 Evidence  
157XII Opinion Evidence  
157XII(C) Competency of Experts  
157k535 k. Necessity of qualification. [Most Cited Cases](#)

**Evidence 157**  **555.2**

157 Evidence  
157XII Opinion Evidence  
157XII(D) Examination of Experts  
157k555 Basis of Opinion  
157k555.2 k. Necessity and sufficiency.  
[Most Cited Cases](#)

New York courts permit expert testimony if it is based on scientific principles, procedures or theory only after the principles, procedures or theories have gained general acceptance in the relevant scientific field, proffered by a qualified expert and on a topic beyond the ken of the average juror.

**[3] Trial 388**  **140(1)**

388 Trial  
388VI Taking Case or Question from Jury  
388VI(A) Questions of Law or of Fact in General  
388k140 Credibility of Witnesses  
388k140(1) k. In general. [Most Cited Cases](#)


Credibility is a matter solely for the jury.

**[4] Evidence 157**  **506**

157 Evidence  
157XII Opinion Evidence  
157XII(B) Subjects of Expert Testimony  
157k506 k. Matters directly in issue. [Most Cited Cases](#)

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(Cite as: 28 Misc.3d 425, 900 N.Y.S.2d 639)

Unless the jurors are unable or incompetent to evaluate the evidence and draw inferences and conclusions, the opinion of an expert, which intrudes on the province of the jury, is both unnecessary and improper.

**[5] Evidence 157**  **508**


157 Evidence

157XII Opinion Evidence

157XII(B) Subjects of Expert Testimony

157k508 k. Matters involving scientific or other special knowledge in general. [Most Cited Cases](#)

Expert testimony is proper only when it would help to clarify an issue calling for professional or technical knowledge possessed by the expert and is beyond the ken of the typical juror.

**[6] Evidence 157**  **506**

157 Evidence

157XII Opinion Evidence

157XII(B) Subjects of Expert Testimony

157k506 k. Matters directly in issue. [Most Cited Cases](#)

Employee's expert opinion regarding credibility of fact witness in retaliation action against employment agency was of collateral matter, and thus expert testimony regarding witness's submission to and results of Functional Magnetic Resonance Imaging (fMRI) test was inadmissible; credibility was matter solely for jury and was clearly within ken of jury.

**\*\*640** [David Zevin](#), Esq., for plaintiff.

Davis & Gilbert, LLP, by [Jessica Golden Cortes](#), Esq., and [Guy R. Cohen](#), Esq., of counsel, for defendants.

ROBERT J. MILLER, J.

**\*426** In this pretrial motion *in limine*, the defendants Corestaff Services L.P. and Edwin Medina (Defendants) move to preclude plaintiff's expert witness from testifying regarding plaintiff's witness Ronald Armstrong's (Armstrong) submission to and the results of a [Functional Magnetic Resonance Imaging](#) (fMRI) test.

Plaintiff Cynette Wilson (Wilson) opposes the motion and cross moves to “be allowed a *Frye* Hearing concerning, the results of functional [Magnetic Resonance Imaging](#) testing which indicate that the witness Ronald K. Armstrong is being truthful when he states that defendant Edwin Medina told him not to place plaintiff Cynette Wilson in temporary work assignments because she complained of sexual harassment”. Wilson disclosed pursuant to [CPLR § 3101\(d\)](#) her intent to call an expert, Steven Laken, Ph.D. (Laken) President and CEO of Cephos Corporation. The intention is to use Laken as an expert to testify that Armstrong, was not lying because the fMRI could show “that to a very high probability” that Armstrong “is being truthful when he testifies”.

Essentially, plaintiff seeks to utilize the fMRI test to bolster the credibility of a key witness in this case. Plaintiff Wilson asserts a claim under New York City and State Human Rights Law that she was retaliated against by the defendants after she reported an inappropriate action by a fellow employee at the work site. The defendant Corestaff is a temporary employment agency that placed Wilson at an investment banking firm (the Bank). While on assignment, an employee of the Bank faxed an offensive nude photo to the plaintiff's work station. Wilson reported the incident to both Corestaff and the Bank. Armstrong is the only witness who will testify as to an alleged retaliatory statement made by Corestaff employee Medina. As such, his credibility is a key issue in the case.

**[1]** The admissibility and limits of expert testimony is primarily in the discretion of the trial court. ([People v. Wiggins](#), 89 N.Y.2d 872, 653 N.Y.S.2d 91, 675 N.E.2d 845 [1996], [Frye v. United States](#), 293 F. 1013 [D.C. 1923] ), is the seminal case followed by New York courts in determining the admissibility of scientific evidence at trial. ([People v. Wernick](#), 89 N.Y.2d 111, 651 N.Y.S.2d 392, 674 N.E.2d 322 [1996]; **\*\*641** [People v. Wesley](#), 83 N.Y.2d 417, 611 N.Y.S.2d 97, 633 N.E.2d 451 [1994] ).

A review of the facts in *Frye* demonstrates that attempts by parties to bolster the credibility of witnesses is a not recent development. In *Frye*, a 1923 case, a defendant in a criminal **\*427** trial wanted to use an expert witness to testify to the result of a “deception test” made upon the defendant. The “deception test” measured systolic blood pressure which

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(Cite as: 28 Misc.3d 425, 900 N.Y.S.2d 639)

allegedly is influenced by change in the emotions of the witness. The *Frye* court summarized the theory as follows:

In other words, the theory seems to be that truth is spontaneous, and comes without conscious effort, while the utterance of a falsehood requires a conscious effort, which is reflected in the blood pressure. The rise thus produced is easily detected and distinguished from the rise produced by mere fear of the examination itself. In the former instance, the pressure rises higher than in the latter, and is more pronounced as the examination proceeds, while in the latter case, if the subject is telling the truth, the pressure registers highest at the beginning of the examination, and gradually diminishes as the examination proceeds.

The *Frye* court refused to allow the testimony of the expert as to the results of the deception test. The Court found:

We think the systolic blood pressure deception test has not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development, and experiments thus far made.

[2] New York courts have restated and followed the principles of *Frye* and set forth a test as to the admissibility of the expert testimony relating to scientific theory. New York courts permit expert testimony if it is based on scientific principles, procedures or theory only after the principles, procedures or theories have gained general acceptance in the relevant scientific field, proffered by a qualified expert and on a topic beyond the ken of the average juror. *People v. LeGrand*, 8 N.Y.3d 449, 835 N.Y.S.2d 523, 867 N.E.2d 374 [2007].

Apparently, there is no reported case in New York or in the rest of the country which deals with the admissibility of the results of fMRI test. The Court inquired of counsel for both parties if they were aware of any reported cases and both advised that this is a case of apparent first impression. However, long established precedent under *Frye* as well as long established principles of jurisprudence provide the Court with ample precedent and guidelines.

As the Court of Appeals noted in *People v. Williams*, 6 N.Y.2d 18, 187 N.Y.S.2d 750, 159 N.E.2d 549 [1959] where rejecting the use of an expert who was to testify as to the alleged lack of credibility of heroin addicts:

\*428 But the expert testimony proffered here is not unusual at all. It is not as to a fact in issue, as such, but as to collateral matter, viz., the credibility of a witness. Credibility is, as the cases have repeated and insisted from the dawn of the common law, a matter solely for the jury. Cases frequently turn upon what credence the jury gives to a particular witness. In a case such as this where only one witness has testified to the crime, the case stands or falls according to the jury's opinion of his credibility.

\* \* \* \* \*

How complex and confusing would a trial become for the jury if it were faced with conflicting expert opinions, each \*\*642 with scientific authority to support it, upon the collateral matter of credibility. The first question would be the credibility of the experts, and then the credibility of the witness. The battle of the experts might well be such that the jury would lose sight of the issues or, at the very least, would tend to regard the opinion of the expert as determinative of the credibility of the witness rather than to consider it only as one factor of many to be considered in concluding whether a witness is telling the truth.

[3] As the *Williams* court observed, our common law tradition provides that credibility is a matter solely for the jury. Anything that impinges on the province of the jury on issues of credibility should be treated with a great deal of skepticism.

[4][5] It is for this reason that courts have advised that the threshold question under *Frye* in passing on the admissibility of expert's testimony is whether the testimony is "within the ken of the typical juror". ( *People v. Cronin*, 60 N.Y.2d 430, 470 N.Y.S.2d 110, 458 N.E.2d 351 [1983] ) Expert testimony offered to bolster the credibility of a fact witness has been appropriately excluded. (*Water Wheel Inn, Inc. v. Exchange Ins. Co.*, 261 A.D.2d 535, 690 N.Y.S.2d 622 [2d Dept.1999].) Furthermore, it is well established that unless the jurors are unable or in-



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competent to evaluate the evidence and draw inferences and conclusions, the opinion of an expert, which intrudes on the province of the jury, is both unnecessary and improper (*Kulak v. Nationwide Mut. Ins. Co.*, 40 N.Y.2d 140, 386 N.Y.S.2d 87, 351 N.E.2d 735 [1976].) Expert testimony is proper only when it would help to clarify an issue calling for professional or technical knowledge possessed by the expert and is beyond the ken of the typical juror. (*De Long v. County of Erie*, 60 N.Y.2d 296, 469 N.Y.S.2d 611, 457 N.E.2d 717 [1983] ) The proffered \*429 fMRI test is akin to a polygraph test which has been widely rejected by New York State courts. (*People v. Shedrick*, 66 N.Y.2d 1015, 499 N.Y.S.2d 388, 489 N.E.2d 1290 [1985]; *Water Wheel Inc v. Exchange Inc., Co.*, 261 A.D.2d 535, 690 N.Y.S.2d 622 [2d Dept.1999] ).

[6] Here the opinion to be offered by Laken is of a collateral matter, i.e. the credibility of a fact witness. Since credibility is a matter solely for the jury and is clearly within the ken of the jury, plaintiff has failed to meet this key prong of the *Frye* test and no other inquiry is required. However, even a cursory review of the scientific literature demonstrates that the plaintiff is unable to establish that the use of the fMRI test to determine truthfulness or deceit is accepted as reliable in the relevant scientific community. The scientific literature raises serious issues about the lack of acceptance of the fMRI test in the scientific community to show a person's past mental state or to gauge credibility.

Accordingly, defendants' motion *in limine* to exclude the testimony of the fMRI expert is granted and plaintiff's motion for a *Frye* hearing is denied.

The foregoing constitutes the decision and Order of the Court.

N.Y.Sup.,2010.  
Wilson v. Corestaff Services L.P.  
28 Misc.3d 425, 900 N.Y.S.2d 639, 2010 N.Y. Slip Op. 20176

END OF DOCUMENT

## **CURRICULUM VITAE**

**NAME:** JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA

**PRESENT TITLE:** Clinical Professor of Psychiatry (Ret.)  
Rutgers Medical School

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**OFFICE ADDRESSES:** 1036 Park Avenue  
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3085 N.E. 163<sup>rd</sup> Street  
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**TELEPHONE NUMBERS/E-MAIL ADDRESS:** Florida: (305) 974-0200  
New York: (212) 570-5039  
Cell: (973) 219-7776  
Email: [jbrown@drjeffreyabrown.com](mailto:jbrown@drjeffreyabrown.com)

**ADMINISTRATIVE OFFICE HEADQUARTERS:** 10 Tindall Road  
Suite 5  
Middletown, NJ 07748  
Contact person: Mary Thompson, Office Manager  
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**CITIZENSHIP:** United States

### **EDUCATION:**

A. Undergraduate

University of Rochester  
Rochester, NY  
B.A. (Psychology, with high distinction)  
1967

B. Graduate and Professional

University of California School of Public Health  
Berkeley, CA  
M.P.H. (Health Planning and Administration)  
1971

Stanford Medical School  
Stanford, CA  
M.D.  
1973

Yale Medical School  
New Haven, CT  
Psychiatry Residency  
Completed in 1977

Yale Law School  
New Haven, CT  
J.D.  
1976

**ACADEMIC APPOINTMENTS:**

Rutgers Medical School  
Clinical Professor of Psychiatry  
7/1/15-10/31/17

University of Medicine and Dentistry of New  
Jersey/Rutgers Medical School  
Clinical Associate Professor  
1996-2015

University of Medicine and Dentistry of New  
Jersey - New Jersey Medical School  
Clinical Assistant Professor  
1992-1996

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

Curriculum Vitae

Page 3

University of Connecticut School of Social Work  
Adjunct Assistant Professor  
1977-1981

### **HONORS AND AWARDS:**

Selected for Marquis Who's Who's Top Professional Series

(<http://marquistopdoctors.com/2018/06/29/jeffrey-brown/>)

2018

Selected for Marquis Who's Who's Albert Nelson Marquis Lifetime Achievement Award Winner "reserved for biographies who have demonstrated leadership, excellence, and longevity within this respective industries and professions."

2018

Listed as New York Top Doc

2018

Listed as "Top Doctor in NY" and "based on your education, training, malpractice & license background check, accolades/awards along with patient reviews."

New York and New Jersey: USA Top Docs

2018

American Law Society, 2018

Listed as "Top Doctor in NY" and "based on your education, training, malpractice & license background check, accolades/awards along with patient reviews."

New York and New Jersey: USA Top Docs

2017

Listed in The Leading Physicians of the World

New York: International Association of Care Professionals

2017

Listed as one of "America's Top Psychiatrists and Neuropsychiatrists" in 2016 by Consumer's Research Council of America (Washington, DC)

Listed in The Leading Physicians of the World

New York: International Association of Care Professionals

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

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2016

Listed as one of “America’s Top Neuropsychiatrists, 2015,” listed in Guide to America’s Top Psychiatrists (Washington, DC: Consumers’ Research Council of America, 2015)

Listed as “Top Doctor in NY” and “based on your education, training, malpractice & license background check, accolades/awards along with patient reviews.”

New York and New Jersey: USA Top Docs

2015

Nominated for Rutgers Medical School Golden Apple Award For Excellence in medical school teaching

Rutgers Medical School Student Counsel

February, 2015

Listed in The Leading Physicians of the World

New York: International Association of Care Professionals

2015

Healthgrades Honor Roll

Healthgrades Recognized Doctor

Healthgrades.com

2014-2015

Listed in The Leading Physicians of the World

New York: International Association of Care Professionals

2014

Listed as “Top Neuro-Psychiatrist in Manhattan, NY & Aventura, FL”

New York: International Association of Health Care Professionals

2014

Distinguished Service Award, Darien Education Association (1977)

Seymour Lustman Research Award (Medicine) for Best Research of First Year Psychiatric Resident

Yale Medical School Department of Psychiatry

May 1975

Honors in 43 of 62 graded course units

Yale Law School

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

Curriculum Vitae

Page 5

1974-1977

Alumni Scholar  
Stanford Medical School  
1973

Dean Alway Award  
Stanford Medical School  
1973

Bennett Prize in Political Science  
University of California at Berkeley  
1971

A.A.M.C. International Public Health Fellow  
Stanford Medical School and Tel Hashomer Hospital  
Tel Aviv, Israel  
1971

New York City Health Department /Columbia University School of Public Health Fellow  
Stanford Medical School  
1968

Awarded Russell Sage Fellowship in Medicine and Behavioral Sciences  
Stanford Medical School  
1967-1970

Elected to Phi Beta Kappa; highest premed GPA; graduated "With High Distinction" in  
Psychology  
University of Rochester  
1967

**HOSPITAL APPOINTMENTS:**

Department of Psychiatry  
St. Barnabas Medical Center  
Livingston, New Jersey  
Emeritus/Honorary  
1997-present

Department of Psychiatry  
Natividad Hospital  
Salinas, California  
Attending Staff (Locum Tenens)  
2003-2007

Department of Psychiatry  
St. Barnabas Medical Center  
Livingston New Jersey  
Attending Staff  
1991-1997

Department of Psychiatry  
Elizabeth General Medical Center  
Elizabeth, New Jersey  
Attending Staff  
1991-1997

Hall-Brooke Psychiatric Hospital  
Westport, Connecticut  
Unit Chief, MacFarland Hall  
1977-1978

Department of Psychiatry  
Norwalk Hospital  
Norwalk, Connecticut  
Attending Staff  
1977-1981

**OTHER EMPLOYMENT OR MAJOR VISITING APPOINTMENTS:**

Of Counsel  
Adam L. Shapiro & Associates  
Forest Hills, NY  
2010-2014

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

Curriculum Vitae

Page 7

Of Counsel\*                                      \*(One brief medico-legal consultation on a  
Finkelstein & Partners                      pharmaceutical case and nothing before or afterwards)  
Newburgh, NY  
2010

Of Counsel  
Davis, Saperstein & Salomon  
New York, New York and Teaneck, New Jersey  
2004-2007

Of Counsel  
Elliott Gourvitz, P.A.  
Springfield, New Jersey  
2001-2004

Vice President, Strategic Planning  
MedSonics, Inc.  
New York, NY and Newark, NJ  
2001-2009

Medical Director  
Cogent Clinical Compliance Systems, Inc.  
Fort Lauderdale, FL  
2000-2012

Co-Founder  
Cross Over Care, L.L.C. (acquired on 9/18/13 by Actelion Pharmaceuticals, LTD.)  
Radnor, PA  
1999-2013

Co-Founder and Vice President, Strategic Planning  
MedAppeal, Inc.  
Santa Monica, CA  
1998-2003

Chief Executive Officer  
The Hospital Planning and Rescue Company  
Short Hills, NJ  
1992-1998

Executive Vice President and Coordinator,



**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

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Medical-Legal Seminar and International Medical School Travel  
Ultimate Prestige Travel  
Short Hills, NJ  
1989-1998

Managing Partner  
Brown & Greenfield  
Short Hills, NJ  
1989-1996

Director, Group Medical Services  
The Prudential Insurance Company  
Parsippany, NJ  
1988-1989

President, Professional Recovery Network  
Santa Monica, CA  
1987-1988

Chairman and Chief Executive Officer  
Quality Health International, Inc.  
Santa Monica, CA  
1985-1987

Of Counsel  
Fraser, Bello & Lapine  
Stamford, CT  
1984-1988

Medical Director  
Psychiatric and Counseling Associates  
Stamford, CT  
1978-1979

Chief Psychiatric Consultant  
Society to Advance the Retarded  
Norwalk, CT  
1977-1986

Chief Psychiatric Consultant

Child Abuse Research and Demonstration Project  
State of Connecticut  
1977-1979

Medical-Psychiatric Outpatient Liaison  
Norwalk Hospital  
Norwalk, CT  
1977-1978

Unit Chief, MacFarland Hall  
Hall-Brooke Hospital  
Westport, CT  
1977

Special Consultant  
Department of Children and Youth Services  
State of Connecticut  
Hartford, CT  
1976-1979

**PRIVATE PRACTICE:**

Florida  
2008-10/31/17

New York  
1999-10/31/17

New Jersey  
1989-1999

Connecticut  
1977-1988

**DATES OF ACTIVE LICENSURE:**

Medicine (\*=date when renewal required):

Physician's License Certificate, Florida  
#ME 92122  
2004-1/31/19\*

Medicine and Surgery License, New York State  
#125871  
1975-7/30/19\*

Physician's and Surgeon's Certificate, California  
#G31375  
1976-6/30/20\*

Physician's License Certificate, New Jersey  
1988-1997

Physician's and Surgeon's License, Connecticut  
1976-1988

Law:

New York Bar  
#4001236  
2001-6/30/19

New Jersey Bar  
#J582465  
1999-2016  
(Ret.)

Florida Bar  
2010-2016  
(Ret.)

Connecticut Bar  
1984-1988  
(Inactive)

**CERTIFICATIONS:**

Diplomate, American Board of Psychiatry and Neurology  
1978

**MEMBERSHIPS, OFFICES AND COMMITTEE ASSIGNMENTS IN PROFESSIONAL  
COMMITTEE ASSIGNMENTS:**

Life Fellow  
American Psychiatric Association  
2016-present

Fellow  
American Psychiatric Association  
2012-2015

Life Fellow  
American Orthopsychiatric Association  
2010-present

Fellow  
American Orthopsychiatric Association  
2008-2010

Member  
American Orthopsychiatric Association  
1978-2008

Florida Bar Association  
Member  
2010-2016

Brain Injury Association of Florida  
Member  
2010-present

Florida Psychiatric Society  
Life Fellow  
2016-present

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

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Page 12

Florida Psychiatric Society

Fellow

2010-2015

Florida Justice Association

Member

2010-2012

The New York City Medical Reserve Corps

Member

2008-2014

American Neuropsychiatric Association

Member

2006-present

North American Brain Injury Society

Charter Member

2004-present

New York State Counsel on Divorce Mediation

2003-2008

Association for Conflict Resolution

2003-2008

New York State Bar Association

Member, Committee on Children and the Law

2003-2004

American Association for Justice

Member

2001-2012

Essex County Medical Society

Member, Mental Health Committee

1999-2003

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

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Saint Barnabas Medical Center  
Chair, Policy and Procedures/Psychiatric Staff By-Laws Committee  
1997-1999

Unity Group (Battered Women Protection and Advocacy)  
Board of Trustees  
1996-1999

Community Health Resources of New Jersey  
Chairman  
1992-1998

New Jersey State Bar Association – Family Law Section  
Member, Child Abuse Committee  
1990-1994

Community Health Law Project of New Jersey  
(Advocacy for the Disabled, the Mentally Ill, the Elderly, and Victims of Domestic Violence)  
Board of Trustees, Co-Chair, Lawyers for Law Project Committee, Chair, Fundraising  
Resources Committee Advisory Panel, Community Advance Directives Program  
1989-1999

Academy of Medicine of New Jersey  
Fellow  
1988-2007

American College of Forensic Psychiatry  
Member  
1988-1996

American College of Physician Executives  
Member  
1987-1996

American Arbitration Association  
Member, Commercial and Labor Panels  
1977-1987

Whiting Forensic Institute

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**  
Curriculum Vitae  
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Director Research Committee  
1976-1977

**COMMUNITY SERVICE INCLUDING ON BOARDS OF DIRECTORS/TRUSTEES:**

Unity Group (Battered Women Protection and Advocacy)  
Board of Trustees  
1998-1999

New Jersey Diabetes Association North Central Regional Council  
Board of Trustees  
1996-1998

Tri-County Chapter, New Jersey Psychiatric Association  
Executive Board (Essex County Representative)  
1996 -1997

Community Health Law Project Of New Jersey  
(Advocacy for the Disabled, the Mentally Ill, the Elderly, and Victims of Domestic Violence)  
Board of Trustee, Co-Chair, Lawyers for Law Project Committee  
1989-1999

**SERVICE ON MAJOR COMMITTEES:**

A. International:

Chair  
International Health Network Society  
Hamilton, Bermuda  
March 17-20, 1995

Co-Founder and Chairman  
The International Health Network Society  
1994-2010

Chairman and Chief Executive Officer  
Quality Health International, Inc.  
Santa Monica, CA  
1985-1987



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B. National:

Co-Chair  
360 Advocacy Institute  
Denver, Colorado  
December 4-6, 2011

Co-Chair  
Strategic Research Institute  
New York, New York  
April 24 & 25, 1995

Co-Chair  
Strategic Research Institute  
New York, New York  
March 21 & 22, 1994

Chair  
Mass Torts Made Perfect  
Las Vegas, Nevada  
October 11, 2012

C. Medical School/University:

President, Stanford Medical School Student Association and  
Student Member of Admissions Committee  
Stanford Medical School  
1970-1971

Third Year Class President and Liaison to Medical School Dean and  
Student Member of Admissions Committee  
Stanford Medical School  
1970

D. Hospital:

Risk Management Committee  
Saint Barnabas Medical Center  
1997-1999

E. Department:

Quality Assurance Committee  
St. Barnabas Medical Center  
1997-1999

**SERVICE ON GRADUATE SCHOOL COMMITTEES:**

Vice President, Psychiatric Residents Association  
1974-1975

Secretary, Psychiatric Residents Association  
Yale Medical School  
1973-1974

Member, Chancellor's Committee on Medical Education  
University of California (Berkeley)  
1970-1971

**SERVICE ON HOSPITAL COMMITTEES:**

Member Whiting Forensic Institute Search Medical School  
Yale Medical School  
1972

**SERVICES TO THE COMMUNITY:**

National Alliance On Mental Illness, Including Miami-Dade County Chapter  
Member  
2012-present

1000 Island Boulevard Association  
Member, Finance Committee  
2009-2014

Union County Superior Court  
Pro Bono Work with Clients Related to Mental Illness and Domestic Violence  
2003-2007

Unity Group (Battered Women Protection and Advocacy)  
Vice President  
1998-1999

Community Health Resources of New Jersey  
Chairman  
1992-1998

Chair, Fundraising Resources Committee  
Advisory Panel, Community Advance Directives Program  
1989-1998

Alpha Phi Omega Service Fraternity President (twice),  
University of Rochester  
1966-1967

**TEACHING RESPONSIBILITIES:**

University of Medicine and Dentistry/Rutgers Medical School  
Second Year Medical Interview Course  
(1992-2017)

Preceptor of “The Chronically Ill and Dying Patient,”  
Course Co-Sponsored by Yale Schools of Medicine, Law, Public Health and Divinity  
Approximately four hours a week  
(1974-1977)

University of Medicine and Dentistry of New Jersey  
Preceptor, Mock Psychiatry Board Examination  
April 11, 2003 and others

**PUBLICATIONS:**

**A. Refereed Original Articles in Journals:**

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

Curriculum Vitae

Page 19

1. Brown, Jeffrey A., "How Recent Legislation Will Affect the Future of C.R.N.A. Professionalism." 44(1) *AANA Journal* 54, 1976.
2. Brown, Jeffrey A., "Towards Managing Conflict on the Anesthesia Care Team," 45(1) *AANA Journal* 15, 1977.
3. Brown, Jeffrey A., "Core Issues of Unionization: Your Ten Most Frequently Asked Questions Answered," 48(1) *AANA Journal* 26, 1980.
4. Brown, Jeffrey A. and Greenfield, Daniel P., Editorial: "What About Prozac?" 89 (6) *New Jersey Medicine*: 445-446, (June) 1992.
5. Brown, Jeffrey A., Witt, Philip H., Greenfield, Daniel P., Editorial: "The Diagnosis and Management of Depression: An Overview," 89 (5) *New Jersey Medicine*, 395-400, (June) 1992.
6. Brown, Jeffrey A. and Greenfield, Daniel P., "Alcoholism and Depression: Three Case Studies," 6 (4) *Clinical Advances in the Treatment of Psychiatric Disorders*: 1-3, 11, (October) 1992.
7. Brown, Jeffrey A. and Greenfield, Daniel P., "What to Expect from a Psychiatric Consultation," 90 (2) *New Jersey Medicine*: 139-141 (February) 1993.
8. Brown, Jeffrey A. and Greenfield, Daniel P., "Psychological Aspects of Hysterectomy: A Case Study," 2 (2) *Women's Psychiatric Health*: 1-2, 12, (Spring) 1993.
9. Brown, Jeffrey A. and Greenfield, Daniel P., "The Use of Triazolam," 7 (2) *Clinical Advances in the Treatment of Psychiatric Disorders*: 4-6 (April) 1993.
10. Brown, Jeffrey A. and Greenfield, Daniel P., "Medicolegal Aspects of Treating Drug and Alcohol Addiction," *New Jersey Medicine*: 11 (90), (November) 1993.
11. Brown, Jeffrey A. and Greenfield, Daniel P., "Physician Compensation: What Doctors Want," *The Journal of Medical Practice Management* 12(6):1-7 (May/June) 1997.
12. Mahalick, David M., Carmel, Peter W., Greenberg, John P., Molofsky, W., Brown, Jeffrey A., Heary, Robert F., Marks, David, Zampella, Edward, Hodosh, Richard, and von der Schmidt, Edward, "Psychopharmacologic Treatment of Acquired Attention

Disorders in Children with Brain Injury,” *Pediatric Neurosurgery*, 29(3):121-126 (September) 1998.

13. Brown, Jeffrey A. and Scott-Roiter, Alexis E., “Physician Practice Management Companies: Should Physicians Be Scared?” *The Journal of Medical Practice Management*, 14(5):245-249, March/April 1999.
14. Brown, Jeffrey A. and Dayle, Randy, “The ISSAC Cognitive Prosthetic System and Its Usefulness in Neurofunctional Rehabilitation,” 15(1) *Rehab Pro*: 32-33 (2007).

**B. Books, Monographs, and Chapters:**

1. Brown, Jeffrey A., Roseman, Cyril, Kaufman, S. Joel, and Savitsky, Elaine R., State Legislative Action for Promoting Systematic Change in Health Care Delivery, Sacramento, California, Assembly Office of Research, 1971.
2. Brown, Jeffrey A., "Diagnosing and Rehabilitating the Medical Marketplace," Bennett Political Science Prize-winning research paper on the “Business and Politics of Health Care in America,” University of California (Berkeley) Archives, May 1971.
3. Brown, Jeffrey A., Public Utility Regulation of Health Maintenance Organizations in Connecticut, New Haven, Connecticut, Yale Legislative Services, 1974.
4. Brown, Jeffrey A., “Interprofessional Conflict and Cooperation,” Seymour Lustman Research Prize-winning paper, Yale Medical School Department of Psychiatry, May 1975.
5. Brown, Jeffrey A., "Towards Managing Conflict on the Anesthesia Care Team," 45(1) AANA Journal 15, 1977.
6. Brown, Jeffrey A. and Greenhouse, Lorrie, Approaching the Bench: A Practice Book for Connecticut Protective Services, Storrs, Connecticut: University of Connecticut Press, 1978.
7. Brown, Jeffrey A. and Greenfield, Daniel P., "Current Medicolegal Status of Prescribing Benzodiazepines: A Special Case," in Greenfield, Daniel P., Prescription Drug Abuse and Dependence: How Prescription Drug Abuse Contributes to the Drug Abuse Epidemic (Springfield, Illinois: Charles C. Thomas, 1995).
8. Brown, Jeffrey A. and Greenfield, Daniel P., "Interviewing the Difficult Patient," in Greenfield, Daniel P. (ed.), Prescription Drug Abuse and Dependence: How

Prescription Drug Abuse Contributes to the Drug Abuse Epidemic (Springfield, Illinois: Charles C. Thomas, 1995).

9. Brown, Jeffrey A. and Greenfield, Daniel P., "Psychopharmacology," published in Price, David R. (ed.), The Insurer's Handbook of Psychological Claims (Washington, D.C.: Insurance Week Publications, 1995).
10. Boston, Gerald W., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 1998).
11. Boston, Gerald W., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 1999-2000 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2000).
12. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2002 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2002).
13. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2003 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2003).
14. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2004 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2004).
15. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2005 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2005).
16. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2006 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2006).
17. Stern, Bruce and Brown, Jeffrey A., Litigating Brain Injuries (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2006).
18. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2007 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2007).

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

Curriculum Vitae

Page 22

19. Stern, Bruce and Brown, Jeffrey A., Litigating Brain Injuries: 2007 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2007).
20. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2008 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2008).
21. Stern, Bruce and Brown, Jeffrey A., Litigating Brain Injuries: 2008 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2008).
22. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2009 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2009).
23. Stern, Bruce and Brown, Jeffrey A., Litigating Brain Injuries; 2009 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2009).
24. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2010 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2010).
25. Stern, Bruce and Brown, Jeffrey A., Litigating Brain Injuries; 2010 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2010).
26. Dotson, Mark A., Kline, David B. and Brown, Jeffrey A., Emotional Injuries: Law and Practice: 2011 Supplement (Eagan, Minnesota: Thomson-Reuters West Publishing Company, 2011).
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135. Brown, Jeffrey A., "Civil Forensics: Competency, Custody, and Brain Catastrophes," presented to the Beth Israel Hospital - Albert Einstein Medical School Post-Graduate Forensic Psychiatry Program, Manhattan, NY, 7 December 2004.
136. Brown, Jeffrey A., "For the Defense: Punch and Counterpunch," presented to the Brain Injury Association of America, Amelia Island, FL, 24 September 2005.
137. Brown, Jeffrey A., "Dealing with Defenses: Avoiding Predictable Blunders," presented to the Brain Injury Association of America, Miami Beach, FL, 16

September 2006.

138. Brown, Jeffrey A., “Dealing with Plaintiffs and Treating Testifiers in Traumatic Brain Injury Cases,” presented to Crum and Foster Insurance Company, Morristown, NJ, 23 February 2007.
139. Brown, Jeffrey A., “Respecting the Defense: Objective Pathways to Settlement,” presented to the North American Brain Injury Society, New Orleans, LA, 2-4 October 2008.
140. Brown, Jeffrey A., “Malingering and Misperception in Traumatic Brain Litigation,” presented to French & Casey, LLP, New York, NY, 01 April 2009.
141. Brown, Jeffrey A., “The Coming Great Synthesis of Neuropsychiatry and the Law,” presented to the 2009 North American Brain Injury Society Medical-Legal Conference on Brain Injury, Austin, TX, 16 October 2009.
142. Brown, Jeffrey A., “Medication Adherence and Cognitive Assistive Technology for the 21<sup>st</sup> Century,” presented to the International Health Network Society, Southampton, Bermuda, 07 November 2009.
143. Brown, Jeffrey A., “Separating the Wheat from the Chaff in TBI Litigation: When to Fight and How to Settle,” presented to the Nassau/Suffolk County Trial Lawyers Association, Westbury, NY, 25 March 2010.
144. Brown, Jeffrey A., “The Pleasures – and Pitfalls – of Being an Expert Witness,” presented to the University of Medicine and Dentistry of New Jersey’s second, third, and fourth year resident groups, Newark, NJ, 27 August 2010.
145. Brown, Jeffrey A., “Being Caught in Child Custody Disputes: A Primer for Child Psychiatrists,” presented to the University of Medicine and Dentistry of New Jersey, child psychiatry fellows and senior psychiatry residents, Newark, NJ, 1 September 2010.
146. Brown, Jeffrey A., “Ten Blunders Plaintiff Attorneys Make in Litigating Brain Injury Cases” presented at Mass Torts Made Perfect, Las Vegas, NE, 14 April 2011.
147. Brown, Jeffrey A., “How 21st Century Neuroscience Will Transform TBI Litigation From The Molecular Level Up,” presented to the Central Florida Trial Lawyers Association, Orlando, FL, 7 September 2011.

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

Curriculum Vitae

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148. Brown, Jeffrey A., "How Cutting-Edge Neuroscience Will Transform Traumatic Brain Injury Litigation," presented to the North American Brain Injury Society, New Orleans, LA, 15 September 2011.
149. Brown, Jeffrey A., "Understanding Causation and Maximizing Damages by Proving Critical Clinical Interactions in Mild Brain Injury Cases," presented to the 360 Advocacy Institute, Las Vegas, NE, 24 October 2011.
150. Brown, Jeffrey A., "Ten Blunders Plaintiff Attorneys Make in Litigating Brain Injury Cases," presented to the Law Firm of Edward Garfinkel, Brooklyn, NY, 3 December 2011.
151. Brown, Jeffrey A., "The Future of Brain and Emotional Injury Litigation," presented to the Traumatic Brain Injury and Emotional Injury Summit: Winning With 21<sup>st</sup> Century Neuroscience, Denver, CO, 4 December 2011.
152. Brown, Jeffrey A., "Predicting and Defeating Future Malingering Defenses," presented to the Traumatic Brain Injury and Emotional Injury Summit: Winning With 21<sup>st</sup> Century Neuroscience, Denver, CO, 6 December 2011.
153. Brown, Jeffrey A., "Using 21<sup>st</sup> Century Ethics and 21<sup>st</sup> Century Neuroscience to Cross Examine Defense Experts" presented to the Florida Justice Association, Orlando, FL, 22 March 2012.
154. Brown, Jeffrey A. and DeVito, William N., "Wielding the Cutting Edge: Welding 21st Century Brain Injury Medicine and the Law," presented to the Chartis Insurance Company's In-House Counsel, Jericho, NY, 27 August 2012.
155. Brown, Jeffrey A., "Neuropsychiatry and the Law: Psychiatric Essentials for Future Board Examinees," presented to the University of Medicine and Dentistry of New Jersey Psychiatry Resident Seminar, Newark, NJ, 29 August 2012.
156. Brown, Jeffrey A., "Tarasoff and Duty to Warn: Hot Off the Presses Issues," presented to the University of Medicine and Dentistry of New Jersey Psychiatric Resident Seminar, Newark, NJ, 29 August 2012.
157. Brown, Jeffrey A. and DeVito, William N., "Wielding the Cutting Edge: Welding 21st Century Brain Injury Medicine and the Law," presented to the Chartis Insurance



Company's Senior Adjustors and Staff Counsel, New York, NY, 13 September 2012.

158. Brown, Jeffrey & Wu, Joseph, "Psychiatric Injury and Neurobehavioral Science in Gas Drilling-Toxic Tort Cases – Brain Injury and Methane/Fracking Chemicals," presented to the Gas Drilling/Fracking Litigation Project Group, Las Vegas, NE, 10 October 2012.
159. Brown, Jeffrey & Wu, Joseph, "Objectifying Toxic Exposure: Neuropsychiatric Injuries and Damages," presented to Mass Torts Made Perfect, Las Vegas, NE, 11 October 2012.
160. Brown, Jeffrey A. and DeVito, William N., "Wielding the Cutting Edge: Welding 21<sup>st</sup> Century Brain Injury Medicine and the Law," presented to the Law Offices of Alan I. Lamer, Elmsford, NY, 17 October 2012.
161. Brown, Jeffrey A. and DeVito, William N., "Wielding the Cutting Edge: Welding 21st Century Brain Injury Medicine and the Law," presented to the Law Offices of Edward Garfinkel, Brooklyn, NY, 22 October 2012.
162. Brown, Jeffrey A., "Predicting and Preventing Homicide, Suicide and Posttraumatic Stress Disorder: Clinical Interventions and Post Tarasoff Legal Obligations," presented to the University of Medicine and Dentistry of New Jersey's Psychiatric Residency Program, Newark, NJ, 23 January 2013.
163. Brown, Jeffrey A. and Jacoby, Jacob H., "Conducting Neuropsychiatric Fact Investigations in Will Contest Cases," presented at Rutgers University Law School, Newark, NJ, 12 March 2014.
164. Brown, Jeffrey A., DeVito, William N., Jacoby, Jacob H., and Rothenberg, Alan L., "Truth and Self-Deception in Brain Injury Cases: Ethical Challenges for Both Attorneys and Medical Experts in Traumatic Brain Injury Cases," presented at Rutgers University Jewish Law Students Association, Rutgers University Law School, Newark, NJ, 12 March 2014.
165. Brown, Jeffrey A., "Deciding Who Should Be On Your Team," presented at the Defense Association of New York seminar, "The Cutting Edge 2014: Understanding Brain Injuries & Building the Best Defense," New York, NY, 20 May 2014.
166. Brown, Jeffrey A., "Deciding What Your Adversaries and Their Experts Will Do," presented at the Defense Association of New York seminar, "The Cutting Edge 2014:

Understanding Brain Injuries & Building the Best Defense,” New York, NY, 20 May 2014.

167. Brown, Jeffrey A., “Deciding How to Diffuse Diffusion Tensor Imaging,” presented at the Defense Association of New York seminar, “The Cutting Edge 2014: Understanding Brain Injuries & Building the Best Defense,” New York, NY, 20 May 2014.

168. Brown, Jeffrey A., “Deciding How to Counterattack with Functional Resilience” presented at the Defense Association of New York seminar, “The Cutting Edge 2014: Understanding Brain Injuries & Building the Best Defense,” New York, NY, 20 May 2014.

169. Brown, Jeffrey A., “Deciding Potential Exposure and How Hard to Fight,” presented at the Defense Association of New York seminar, “The Cutting Edge 2014: Understanding Brain Injuries & Building the Best Defense,” New York, NY, 20 May 2014.

170. Brown, Jeffrey A. and Kardos, Mark, “How to Overcome Defenses in Traumatic Brain Injury Cases,” presented at the National Business Institute’s Continuing Legal Education Seminar, “Traumatic Brain Injury Cases: Doctor and Attorney Perspectives,” Philadelphia, PA, 30 October 2014.

(Note: The audience was 50% percent plaintiff attorneys and 50% defense attorneys who were all present at all talks.)

171. Brown, Jeffrey A. and Bruderle, Stephen, “Defense Tactics Unique to Brain Injury Cases,” presented at the National Business Institute’s Continuing Legal Education Seminar, “Traumatic Brain Injury Cases: Doctor and Attorney Perspectives,” Philadelphia, PA, 30 October 2014.

(Note: The audience was 50% percent plaintiff attorneys and 50% defense attorneys who were all present at all talks.)

172. Brown, Jeffrey A. and Mahalick, David M., “Investigating Closed Head Brain Injuries,” presented at the National Business Institute’s Continuing Legal Education Seminar, “Traumatic Brain Injury Cases: Doctor and Attorney Perspectives,” Philadelphia, PA, 30 October 2014.

**JEFFREY A. BROWN, M.D., J.D., M.P.H., LFAPA, LFAOPA**

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173. Brown, Jeffrey A., “Winning Defense Expert Approaches,” presented at the Defense Association of New York’s Continuing Legal Education Seminar, “The Cutting Edge 2015: Cutting Deeper into TBI Law and Science,” New York, NY, 12 March 2015.
174. Brown, Jeffrey A., Key Note Address for Basic Science Graduates: “The Pleasures and Challenges of Coming to America to Practice Medicine,” presented to The American University of Integrative Sciences, St. Maarten School of Medicine, Cole Bay, St. Maarten, 15 April 2015.
175. Brown, Jeffrey A., “Six Ethical Questions Every Brain Injury Expert Must Ask,” presented to the AIG Group, Jericho, NY, 09 June 2015.
176. Brown, Jeffrey A., “The Emerging Role of Resilience and Its Relationship to Diffusion Tensor Imaging Studies,” presented to the AIG Group, Jericho, NY, 09 June 2015.
177. Brown, Jeffrey A., “Misperception, Specificity, Localization Limits, and Resilience: The New TBI Defense Frontiers,” presented to the AIG Insurance Company (Luxington Group), Boston, MA, 27 July 2015.
178. Brown, Jeffrey A., DeVito, William N., Mahalick, David M., “New 21<sup>st</sup> Century Neuroscience Implications for the Future of Brain Injury Litigation,” presented to the AIG Insurance Company, Brooklyn, NY, 16 September 2015.
179. Brown, Jeffrey A., DeVito, William N., Mahalick, David M., “New 21<sup>st</sup> Century Neuroscience and Behavioral Implications for Traumatic Brain Injury Litigation,” presented to the AIG Insurance Company, Westchester, NY, 24 September 2015.
180. Brown, Jeffrey A., DeVito, William N., “Proving Injuries and Incurable, Serious and Worthy of Compensation,” presented at the National Business Institute Audio Seminar, Aventura, FL, 28 January 2016.
181. Brown, Jeffrey A., Identifying the Neuropsychiatric and Neurological Aspects: Doctor’s Perspective,” presented at the National Business Institute Audio Seminar, Aventura, FL, 28 January 2016.
182. Brown, Jeffrey A., DeVito, William N., “Neuropsychiatric Evidence Supporting the TBI Diagnosis and Long-Term Impacts (SPECT, DTI, GCS and more),” presented at

the National Business Institute Audio Seminar, Aventura, FL, 28 January 2016.

183. Brown, Jeffrey A., “Issues of Patient Non-Compliance and Contributory Negligence,” presented at the National Business Institute Audio Seminar, Aventura, FL, 28 January 2016.
184. Brown, Jeffrey A., “Emerging Defenses and Trojan Horses in Trucking Cases,” webinar presented to the Trucking Industry Defense Association, New York, NY, 8 June 2016.
185. Brown, Jeffrey A., “How to Use The Latest Science and Your Understanding of Brain Injuries to Help You Work Constructively with Your Adversary to Settle Cases,” presented to the New York Defense Association, New York, NY, 22 September 2016.
186. Brown, Jeffrey A., “Critical Aspects of a Neuropsychiatric IME: Using Twenty-first Century Neuroscience to Help You Decide to Fight and How to Settle in Brain Injury Cases,” presented to the IAD (International Association of Defense Counsel) Webinar, Chicago, IL, 14 December 2016.
187. Brown, Jeffrey A., “Lessons From a Lifetime of Courtroom Adventures of a Plaintiff and Defense TBI Expert,” to be presented to the New York Defense Association, New York, NY, 16 October 2018.

Revised 9/6/18

November 26, 2014

Professor Petros Levounis, MD, MA  
Chair  
Department of Psychiatry  
Rutgers New Jersey Medical School  
183 South Orange Avenue, Room F-1436  
Newark, New Jersey 07103

Dear Dr. Levounis,

I am pleased to write a letter for Jeffrey Brown, M.D. in support of his promotion to the rank of Clinical Professor (Voluntary) in the Department of Psychiatry at Rutgers New Jersey Medical School. I am a professor at Rutgers Law School and worked closely with Dr. Brown last year when he generously volunteered to help design and participate in a simulation in my course on Fact Investigation. This exercise was the most important aspect of a semester-long simulation in which my students conducted investigation in a contested will case in which a party claimed that her aunt lacked testamentary capacity, suffered from one or more insane delusions, and was unduly influenced at the time she wrote her will. The simulation with Dr. Brown involved the students consulting with him in order to develop the most appropriate theories on behalf of their clients; to understand the significance of the evidence the students had discovered thus far; and to identify critical evidence that the students needed in order for Dr. Brown to be able to arrive at an informed opinion about the above issues.

I have done this same exercise with different psychiatrists for more than 20 years, and Dr. Brown was brilliant - by far the best expert we have ever worked with. His legal expertise and experience as an actual expert witness in many cases allowed him to interact with the students much more effectively than any of the psychiatrists we have worked with in the past. With respect to all three of the issues noted above, Dr. Brown had critical insights that none of the prior experts who worked with my students on the same simulation had ever mentioned. In particular, one of the most difficult aspects that lawyers face in working with experts from various disciplines is finding a common language and common way of approaching the case from the perspectives of two very different fields. For example, one legal standard for invalidating a will is that the deceased lacked testamentary capacity at the time she executed the will. But, of course, "testamentary capacity" is a specifically defined legal concept, not a medical condition. Because Dr. Brown is a true expert in in both professions, he was able not only to function as an expert with tremendous facility, but was able to teach the students how to bridge the two worlds themselves. That is an essential skill for litigators and Dr. Brown taught my students how to do this as artfully as anyone I have ever seen. This was my students' favorite project of the semester because of Dr. Brown's involvement. And, as no good deed goes unpunished, I am about to invite Dr. Brown to participate in a trial simulation in my Trial Presentation course this semester and in various capacities in an advanced course I'm teaching next semester on working with

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experts. Dr. Brown's expertise in both law and medicine makes him a rare and invaluable resource as an educator.

I reviewed Dr. Brown's c.v. at the time I worked with him last year, and I reviewed it again in preparation for writing this letter. His vast experience and many accomplishments leap out from the pages; but, of course, as a law professor, I am not able to offer meaningful comment about the nature or quality of his clinical practice or scholarship. I can say that as both a practicing trial attorney for almost 40 years and a law professor for more than 30, I have never worked with a smarter or more capable doctor or educator, in any field, than Dr. Brown. I recommend him for promotion to the rank of Clinical Professor (Voluntary) in your Department with the greatest possible enthusiasm. A comparable record of achievement in the field of law would be more than sufficient to justify promotion to the rank of Clinical Professor at Rutgers Law School, where I teach. With the burgeoning recognition of the importance of interdisciplinary collaboration in so many fields, especially law and medicine, Dr. Brown is in the position to be as superb an educator as any professor I have known, in my own field as well as others.

Please feel free to contact me if I can be of any further assistance with respect to your evaluation of Dr. Brown.

Sincerely,

Louis S. Raveson  
Professor of Law and  
Alfred C. Clapp Public Service Scholar  
Rutgers Law School – Newark

All Press Releases for June 12, 2018 (/press\_releases\_by\_date/20180612)

# Jeffrey A. Brown Presented with the Albert Nelson Marquis Lifetime Achievement Award by Marquis Who's Who

Dr. Brown has been endorsed by Marquis Who's Who as a leader in the fields of healthcare management, medicine and law

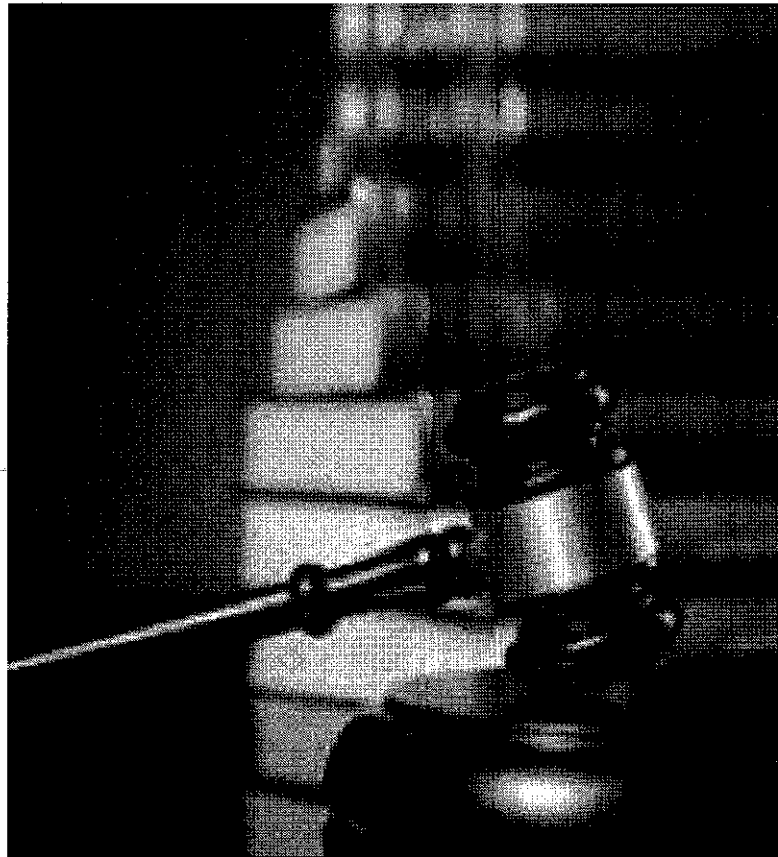
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NEW YORK, NY, June 12, 2018 **/24-7PressRelease/** -- Marquis Who's Who, the world's premier publisher of biographical profiles, is proud to present Jeffrey A. Brown, MD, JD, MPH, LFAPA (Life Fellow, American Psychiatric Association), LFAOPA (Life Fellow, The American Orthopsychiatric Association), with the Albert Nelson Marquis Lifetime Achievement Award. An accomplished listee in many fields who previously has been included in several editions of Who's Who in American Law, Who's Who in the East, and Who's Who of Emerging Leaders in America, we now celebrate Dr. Brown's many years of experience in his healthcare management, medical, and legal networks. Over the past forty years, he has been recognized internationally for his multiple multidisciplinary achievements, leadership and entrepreneurial qualities, and the many credentials and awards he has accrued in all three of his areas of expertise.

As in all Marquis Who's Who biographical volumes, individuals profiled are selected on the basis of current reference value. Factors such as position, noteworthy accomplishments, visibility, and prominence in a field are all taken into account during the selection process.

After first earning his undergraduate degree in psychology with High Distinction as well as being elected to Phi Beta Kappa and having the highest premed GPA at the University of Rochester in 1967, Dr. Brown then was selected to enter Stanford Medical School that year as a Russell Sage Fellow in Medicine and Behavioral Sciences. While in medical school, he was invited to get a Masters of Public Health in Health Administration and Planning at the **University** of California at Berkeley in 1971, where he also was awarded the Bennett Prize in Political Science and selected to be a member of the Chancellor's Committee on Medical Education.

He then returned to Stanford to assume significant clinical responsibilities in cardiac surgery, pediatrics, and internal medicine and then simultaneously pursued a Juris Doctor degree at Yale Law School (which was awarded in 1976) while at the same time completing his residency in psychiatry and behavioral medicine at Yale Medical School in 1977.

While at Stanford, Dr. Brown had had the distinction of being awarded both the Dean Alway Award and the Stanford Medical Alumni Association Award for his excellence in character, academic performance, and leadership. He also had been elected President of the third-year class and President of the Stanford Medical Students Association. ^

While at Yale, he also had earned the Seymour Lustman award for best research by a first-year resident and had been elected Vice President of the Yale Psychiatric Residents Association.

After completing his joint training in law and medicine at Yale, Dr. Brown continued to be professionally recognized in many leadership as well as public and community service positions. These have included his being Chief Psychiatric Consultant both for the State of Connecticut's Department of Children and Youth Services as well as for the federal government's Child Abuse Research and Demonstration project; Consultation-Liaison Coordinator between the Departments of Psychiatry and Primary Care at Norwalk Hospital; and Chief Consultant to Child Study Teams in Connecticut which led to his being recognized by being given the Distinguished Service Award by the Darien Education Association.

His other leadership and public service activities had included his having been chosen to be a New York City Health Department Fellow and subsequently an American Association of Medical Colleges International Public Health Fellow; chosen to be Vice President and a member of the Board of Trustees of the Millburn, New Jersey's Unity Group battered women's protection and advocacy group; elected to the Board of Trustees of the New Jersey Diabetes Association North Central Regional Council; chosen to be appointed to be an Executive Board Member of the New Jersey Psychiatric Association; and for a decade had been a member of the Board of Trustees of the Community Health Law Project of East Orange, New Jersey, a multidisciplinary advocacy group for the rights of the disabled and the elderly.

His executive and entrepreneurial activities have included his have been Director of Group Medical Services of the Prudential Insurance Company of Parsippany, New Jersey; Co-Founder and Chief Executive Officer of The Hospital Planning and Rescue Company of Short Hills, New Jersey; Co-Founder of a pharmaceutical company designed to help terminally ill patients, Cross Over Care, LLC of Radnor, Pennsylvania; Chair of the International Health Network Society of New York, New York; Co-Chair of programs centering on rescuing troubled hospitals and healthcare facility management presented by the Strategic Research Institute of New York, New York; Vice President and Director or Strategic Planning of MedSonics, Inc. of New York, NY; Chair of the Mass Torts Made Perfect ^ conference of Las Vegas, Nevada; Chairman and Chief Executive Officer of Quality Health

International, Inc. of Santa Monica, California; Co-Founder and President of the Professional Recovery Network of Santa Monica, California; Co-Founder of MedAppeal, Inc. of Santa Monica, California; and Co-Founder and Medical Director of Cogent Clinical Compliance Systems, Inc. of Ft. Lauderdale, Florida.

After four decades of clinical practice and a twenty-five-year career on the faculty of UMDNJ/Rutgers Medical School where he taught first and second year medical students as well as law students about clinical interviewing, interdisciplinary work amongst different medical specialties as well as between lawyers and physicians, he retired this year at the rank of Clinical Professor of Psychiatry.

Although he has now retired from the active practice of law in Connecticut, New Jersey and Florida, he still maintains an active legal license in New York.

Dr. Brown presently is also actively licensed to practice medicine in the States of New York, Florida, and California. He now devotes his time primarily to healthcare management consulting and consulting with attorneys identifying issues in cases and assisting with clinical, organizational, legal and financial assumptions analysis.

The author of over two hundred articles/professional presentations and/or books, including being co-author of both Emotional Injuries: Law and Practice and Litigating Brain Injuries published by Thomson Reuters West, Dr. Brown has gained extensive expertise in virtually every aspect of the healthcare system from the clinical, legal, and administrative perspectives.

Jeff and his wife Nancy now divide their time between Manhattan, New York and Aventura, Florida. Of Jeff's three sons, two are "hybrids" like him. His middle son, Jordan, married just this year, after completing a JD-MBA program now works for the Federal Reserve Bank of New York doing national and international compliance. His oldest son, Ross, a graduate of the London School of Economics and Cornell's MBA program, now lives in Texas and is completing his JD after having been a Peace Corps volunteer and consultant for the State Department and multinational management firms in the former Soviet Union. His youngest son, Jeremy, also is living in New Jersey and engaged in entrepreneurial activities in both New Jersey and York. ^

The best number to reach Jeff is on his cell at 973-219-7776 or by email at [jbrown@drjeffreyabrown.com](mailto:jbrown@drjeffreyabrown.com) (<mailto:jbrown@drjeffreyabrown.com>).

Finally, in recognition of his outstanding contributions to the professions of healthcare management, medicine and law, Jeffrey A. Brown, MD, JD, MPH, LFAPA, LFAOPA has been featured on the Alert Nelson Marquis Lifetime Achievement website. Please visit [www.Ltachievers.com](http://www.Ltachievers.com) (<http://www.Ltachievers.com>) for more information about this honor.

Since 1899, when A. N. Marquis printed the First Edition of Who's Who in America®, Marquis Who's Who® has chronicled the lives of the most accomplished individuals and innovators from every significant field of endeavor, including politics, business, medicine, law, education, art, religion and entertainment. Today, Who's Who in America® remains an essential biographical source for thousands of researchers, journalists, librarians and executive search firms around the world. Marquis® now publishes many Who's Who titles, including Who's Who in America®, Who's Who in the World®, Who's Who in American Law®, Who's Who in Medicine and Healthcare®, Who's Who in Science and Engineering®, and Who's Who in Asia®. Marquis® publications may be visited at the official Marquis Who's Who® website at [www.marquiswhoswho.com](http://www.marquiswhoswho.com) (<http://www.marquiswhoswho.com>).

# # #

## Contact Information

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**Fred Marks**

**Marquis Who's Who Ventures LLC**

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## CURRICULUM VITAE:

**DATE:** May 24,2018

**NAME:** David M. Mahalick, PhD, ABPN

**PRESENT TITLE:** Pediatric & Adult Clinical Neuropsychologist

### OFFICE ADDRESS:

2066 Millburn Avenue  
Suite 201  
Maplewood, NJ 07040

### TELEPHONE NUMBER/E-MAIL INTERNET:

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Facsimile: (973) 313-1666  
e-mail: [braindoc1@comcast.net](mailto:braindoc1@comcast.net)

### EDUCATION:

- A. Undergraduate and Professional:  
Alfred University  
Alfred, New York  
Bachelor of Arts- Applied Psychology 6/1982
  
- B. Graduate and Professional:  
California School of Professional Psychology  
San Diego, California  
Ph.D. - Clinical Psychology 12/1987

### POSTGRADUATE TRAINING:

- A. Internship and Residencies:
  - 1. Pre-doctoral Internship  
Clinical Psychology Internship  
Escondido Community Mental Health Center  
San Diego County Mental Health  
July 1, 1983- June 30, 1984
  - 2. Pre-doctoral Internship  
Clinical Neuropsychology (Adult) Internship  
University of California- San Diego Medical Center  
Department of Neurological Surgery  
25 Dickinson Street  
San Diego, California  
July 1, 1984- June 30, 1985
  - 3. Pre-doctoral Internship  
Pediatric Clinical Neuropsychology (Pediatric) Internship  
University of California-San Diego Medical Center  
Department of Neurology (Peds.)  
Center for Language and Communicative Disorders  
25 Dickinson Street

San Diego, California  
July 1, 1985- June 30, 1986

4. Residency  
Pediatric and Adult Clinical Neuropsychology Residency  
Hahnemann University Hospital Medical School  
Department of Neurology  
230 North Broad Street  
Philadelphia, Pennsylvania 19102  
July 1, 1986- June 30, 1988

B. Research Fellowships: N/A

C. Postdoctoral Appointments: N/A

**MILITARY:** N/A.

**ACADEMIC APPOINTMENTS:**

Department of Pediatrics  
Robert Wood Johnson Medical School  
Clinical Associate Professor of Pediatrics  
April, 2016- present

Department of Pediatrics  
Robert Wood Johnson Medical School  
Clinical Assistant Professor of Pediatrics  
Sept., 1994- June, 2002

Department of Neurology  
Robert Wood Johnson Medical School  
Clinical Assistant Professor of Neurology  
April, 1991- Sept., 1994

Departments of Pediatrics and Surgery (Division of Neurological Surgery)  
University of Medicine and Dentistry-New Jersey Medical School  
Clinical Assistant Professor of Pediatrics and Surgery  
June, 1993-2012.

Departments of Pediatrics and Surgery (Division of Neurological Surgery)  
University of Medicine and Dentistry-New Jersey Medical School  
Clinical Instructor of Pediatrics and Surgery  
June, 1991-1993

Department of Psychiatry  
University of Medicine and Dentistry-New Jersey Medical School  
Assistant Clinical Professor of Psychiatry  
January, 1994- September, 1997

Department of Applied Psychology  
New York University-Steinhardt School of Education  
Department of Applied Psychology  
Adjunct Associate Professor of Clinical Psychology  
January, 2001-2010

## **HOSPITAL APPOINTMENTS:**

Children's Specialized Hospital  
February, 1989- August, 1994.

Department of Neurosurgery  
Children's Hospital of New Jersey (closed)  
Neuropsychology-Consulting Staff  
April, 1990- August, 1995

Department of Pediatrics  
Beth Israel Medical Center  
Neuropsychology-Consulting Staff  
April, 1990- August, 1997

Department of Pediatrics  
Robert Wood Johnson-University Hospital  
Neuropsychology-Consulting Staff  
December, 1991- present.

Departments of Pediatrics and Neurological Surgery  
University of Medicine and Dentistry -University Hospital  
Neuropsychology-Consulting Staff  
June, 1991-2012.

Department of Psychiatry  
Clara Maas Medical Center  
Neuropsychology-Consulting Staff  
June 1996- December, 2008

Department of Psychiatry  
Somerset Medical Center  
Neuropsychology-Consulting Staff  
December, 1997- present.

Department of Psychiatry  
Morristown Memorial Hospital  
Neuropsychology-Consulting Staff  
September, 1998- present.

Department of Psychiatry  
Muhlenberg Regional Medical Center  
Neuropsychology-Consulting Staff  
September, 1997- April, 2009 (closed)

Department of Psychiatry  
Overlook Hospital Medical Center  
Neuropsychology-Consulting Staff  
September, 2001- present.

Department of Neurology  
Beth Israel Medical Center-North (Closed)  
Neuropsychology-Professional Staff  
September, 2003-August, 2005



**OTHER EMPLOYMENT OR MAJOR VISITING APPOINTMENTS:**

Hahnemann University Hospital  
Department of Neurology  
Division of Neuropsychology  
Chief Neuropsychology Fellow  
July, 1987-June-1988

DATHR-Comprehensive Rehabilitation Program  
Brookfield, CT  
Staff Clinical Neuropsychologist  
July, 1988-February 1989

Children's Specialized Hospital  
Director, Department of Psychology/Neuropsychology  
February, 1989-August, 1994.

University of Medicine and Dentistry-New Jersey Medical School  
Department of Psychiatry  
Director of Neuropsychology  
August, 1994-July, 1997.

University of Medicine and Dentistry-New Jersey Medical School  
Department of Neurosurgery  
Neuropsychology Consulting Staff (in house, private practice)  
July, 1997- December, 2006.

President and Chief Executive Officer  
Director of Neuropsychology  
Neurobehavioral Institute of New Jersey  
January, 2000-December, 2009

President and Chief Executive Officer  
The Isabel & David M. Mahalick Foundation  
April, 2000-present.

**PRIVATE PRACTICE:**

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Suite 201  
Maplewood, NJ 07040

1771 Springdale Avenue  
Cherry Hill, New Jersey 08003

5 Penn Plaza  
19th Floor  
New York, NY 10020

**LICENSURE:**

New Jersey License # SI 02582  
Clinical Psychology (Specializing in Neuropsychology)  
February 2, 1989-present  
Expiration date: 6/30/2019

New York License #013948  
Clinical Psychology (Specializing in Neuropsychology)  
October 10, 2000-present  
Expiration date: 6/30/2020

NPI: 1962617811

**DRUG LICENSURE:**

CDS: N/A  
DEA: N/A

**CERTIFICATION:**

Diplomate, American Board of Professional Neuropsychology  
October 21, 2001- present.  
Expiration date: N/A

**MEMBERSHIPS, OFFICES, AND COMMITTEE ASSIGNMENTS IN PROFESSIONAL SOCIETIES:**

International Neuropsychological Society  
Member  
1988-present

National Academy of Neuropsychology  
Member  
1988-present

New Jersey Neuropsychological Society  
Member of the Board Of Trustees  
1989-2002

New Jersey Neuropsychological Society  
Member  
1989- present

Chairman, Membership Committee  
N.J. Society of Neuropsychologists  
1989-1993.

National Head Injury Association  
Member  
1989-1997

New Jersey Head Injury Association  
Member  
1989-1997

Chairman, Steering Committee of the Professional Council  
New Jersey Head Injury Association, Inc.  
1990-1992.

American Psychological Association  
Member  
1988-present

Division 40 (Clinical Neuropsychology of the APA)  
Member  
1988-present

New Jersey Psychological Association  
Member  
1989-present

New York Academy of the Sciences  
Member  
1990- 1994

New Jersey Academy of Psychologists  
Member (merged with NJPA)  
1988-2010

American Congress of Rehabilitation Medicine  
Member  
1990-1999

#### **HONORS AND AWARDS:**

Psi Chi  
American Psychological Association National Honor Society  
1982.

Phi Kappa Phi  
National Honor Society  
1982

Distinguished Service Award  
NJ Head Injury Association  
1991.

Recognition Award  
NJ Academy of Psychologists  
1994.

Fellow  
American College of Professional Neuropsychology  
2001.

Fellow  
American Board of Forensic Medicine  
2000.

#### **BOARDS OF DIRECTORS OR TRUSTEES POSITIONS:**

Board of Trustees  
New Jersey Society of Neuropsychologists  
1989-1993

Board of Trustees  
New Jersey Academy of Psychology  
1990-1992.

Board of Trustees  
Perspectives Network Spring, Texas  
1990-1992.

**SERVICE ON NATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES:**

Scientific Reviewer  
National Institute of Health (NIH)  
National Institute of Child Health and Human Development  
Special Emphasis Panel ZHD1 DSR-L 24R  
March, 2000-

**SERVICE ON MAJOR COMMITTEES:**

- A. International: N/A
- B. National: N/A
- C. State:
  - Chairman, Membership Committee
  - N.J. Society of Neuropsychologists
  - 1989-1993.
  
  - Chairman, Steering Committee of the Professional Council
  - New Jersey Head Injury Association, Inc.
  - 1990-1992.
- D. Medical School/University: N/A
- E. Hospital: N/A
- F. Department: N/A
- G. Editorial Boards: N/A
- H. Ad Hoc Reviewer: N/A

**SERVICE ON GRADUATE SCHOOL COMMITTEES: N/A**

**SERVICE ON HOSPITAL COMMITTEES: N/A**

**SERVICE TO THE COMMUNITY:**

President and Chief Executive Officer  
The Isabel & David M. Mahalick Foundation  
April, 2000-present.

**CLINICAL RESPONSIBILITIES:**

Hahnemann University Hospital  
Department of Neurology  
Division of Neuropsychology  
Chief Neuropsychology Fellow  
July, 1987-June-1988

DATHR-Comprehensive Rehabilitation Program

Brookfield, CT  
Staff Clinical Neuropsychologist  
July, 1988-February 1989

Children's Specialized Hospital  
Director, Department of Psychology/Neuropsychology  
February, 1989-August, 1994.

University of Medicine and Dentistry-New Jersey Medical School  
Department of Psychiatry  
Director, Neuropsychology Service  
August, 1994-July, 1997.

University of Medicine and Dentistry-New Jersey Medical School  
Department of Neurosurgery  
Neuropsychology Consulting Staff (in house, private practice)  
July, 1997- December, 2006.

President and Chief Executive Officer  
Director of Neuropsychology  
Neurobehavioral Institute of New Jersey  
January, 2000-December, 2009

**GRANT SUPPORT: N/A**

**PUBLICATIONS:**

A. Refereed Original Article in Journal:

1. Mahalick DM, Ruff RM, U HS (1991) Neuropsychological Sequelae of Arteriovenous Malformations. *Neurosurgery* 29:351-357.
2. Mahalick DM, Ruff RM, U HS, Heary RF (1993) Pre-operative versus Postoperative Neuropsychological Sequelae of Arteriovenous Malformations. *Neurosurgery* Vol. 33:4 pp. 563-572.
3. Mahalick DM, McDonough M, Levitt J (1995) Head Injuries in Adults and Children. *Trauma* 37:4 pp. 27-38.
4. Mahalick DM, Koller CJ, Pleim ET. Pediatric Trauma and head injury. *Trauma* 38:1 pp 39-56 April 1996.
5. Mahalick DM & Hahn G. Cognitive sequelae of electroconvulsive therapy. *Trauma* 38:5 pp 45-50 February 1998.
6. Mahalick DM, Carmel PW, Greenberg JP, Molofsky W, Brown JA, Heary RF, Marks D, Zampella E, Hodosh R (1998) Psychopharmacological Treatment of Acquired Attention Disorders in Children with Brain. *Pediatric Neurosurgery*; 29: 121-126.
7. Schulder M, Sernas TA, Adler RJ, Mahalick DM, Cook S: Thalamic stimulation in patients with multiple sclerosis. *Stereotact Funct Neurosurg* 72: 196-201, 1999.

B. Books, Monographs, and Chapters:

1. Mahalick DM (1989) The Neuropsychological Sequelae of Arteriovenous Malformations. Ann Arbor: UMI.
2. Mahalick DM & Ryan T V (Eds) Pediatric Brain Injury: Diagnosis and Rehabilitation. San Diego: Singular Publishing (in prep).
3. Behrens F, Schwappach, Swan K, Levy A, Barbieri R, Forster R, Mahalick DM & Chowchuvech G. Injury and Repair (chap.1.7.1 viz., Head injuries-presentations and outcomes) in Buckwalter J, Bustrade C, Carr A, Fairbank J, Marsh L, Wilson-MacDonald L. (Eds.) Oxford Textbook of Orthopaedics and Trauma. Oxford University Press (2002).

C. Patents Held: N/A

D. Other Articles:

1. Mahalick DM, Savage J (1990) Neuropsychological Assessment of the Pediatric Population. NJ Psychologist Vol. 40. pg 14.
2. Mahalick DM (1991) Pediatric Brain Injury. The Perspective Network IV:18-19.

E. Abstracts

1. Peer Reviewed Abstracts:

Mahalick DM, Ruff RM, U HS, Heary R F (1994) Pre-versus Postsurgical Sequelae of Arteriovenous Malformations. Abstracts of the 13th Annual Meeting. Archives of Neuropsychology Vol. 9: 2 pp. 159-160.

Mahalick DM Molofsky W, Bartlett JA, (1996). Psychopharmacological treatment of Children with Attention Disorders Secondary to Brain Injury. Vol. 9: 2 pp 159-160. Abstracts of the Nineteenth Annual Meeting of the International Neuropsychological Society Mid-Year Conference. J International Neuropsychological Vol 2: 3 pp 208.

Mahalick DM, McDonough M, Greenberg JP, (1996) Psychopharmacological treatment of Pediatric Traumatic Brain Injury Abstract of the Twenty-Fifth Annual International Neuropsychological Society Conference. J International Neuropsychological Vol 3: 1 pp 63.

McDonough M, Mahalick DM, Greenberg JP, (1997) Malingering on neuropsychological assessment is more often a case of individual presentation than a litigation group phenomena. Abstracts of the 17th Annual Meeting. Archives of Clinical Neuropsychology. Vol.13, Number 1: pp 60.

Mahalick DM, Hohn GE, Hunt CD, Schulder M, Carmel PW (1997): Intracarotid Sodium Amytal Testing on Patients With AVM's: Its Utility a Function of the Size and Shunt Value of the AVM. Abstracts of the 17th Annual Meeting. Archives of Clinical Neuropsychology. Vol.13, Number 1: pp 60-61.

Mahalick DM, Carmel, PW Molofsky W, Bartlett JA, McDonough M, Greenberg JP, (1998) Psychopharmacological Treatment of Pediatric Brain Injury. Abstracts of the Annual Meeting of the American Association of Neurological Surgeons. J Neurosurgery. Vol. 88: 2 pp 412A.

Mahalick DM, Greenberg JP, McGinley J (2003) Neuropsychological and Neurological Sequelae of Toxic Anhydrous Ammonia. Abstracts of the 23rd Annual Meeting. Archives of Clinical Neuropsychology. Vol. 18: pp 727.

2. Non Peer Reviewed Abstracts: N/A

E. Reports:

1. Mahalick DM, Yalamanchi K , Ruzicka PO, Bowen M. "Spontaneous Recovery Following Pediatric Traumatic Brain Injury" Presented at the National Head Injury Foundation's Annual Conference, November, 1990, New Orleans, LA.
2. Mahalick DM & Yalamanchi K "Neuropsychological and Medical Recovery Following Pediatric Traumatic Brain Injury" Symposia Presentation presented at the NJ Head Injury Association's Annual Conference. November 1990.
3. Mahalick DM, Ruff RM, U HS "Neuropsychological Sequelae of Arteriovenous Malformations" Presented at the annual meeting of the International Neuropsychological Society. February 1991. San Antonio, Texas.
4. Mahalick DM, Yalamanchi K, Mehta U, Webb T "Psychopharmacological Treatment of Acquired Attentional Disorders in Children with Traumatic Brain Injury" Recovery Presented at the National Head Injury Foundation's Annual Conference, November, 1993, Orlando, FLA.
5. Mahalick DM, Ruff RM, U HS, Heary RF "Pre-operative versus Postoperative Neuropsychological Sequelae of Arteriovenous Malformations" Presented at the Congress of Neurosurgeons Annual Conference October 1993, Vancouver, B.C.
6. Mahalick DM, Ruff RM, U HS, Heary RF "Pre-operative versus Postoperative Neuropsychological Sequelae of Arteriovenous Malformations" Presented at the National Academy of Neuropsychologists 13th Annual Conference. October, 1993, Phoenix, AR.
7. Mahalick DM, Manniker A & Yalamanchi K "Pediatric Traumatic Brain Injury: Medical Considerations and Community/Academic Reintegration New Jersey Head Injury Association 12th Annual Seminar April 30, 1994.
8. Mahalick DM, Yalamanchi, K, Mehta U, Webb T "Psychopharmacological treatment of acquired attentional disorders secondary to pediatric traumatic brain injury" Platform presentation. Medical Conference of Virginia Annual Symposium. Williamsburg, VA. May 25, 1994.
9. Mahalick DM, McDonough M Assessing treatment efficacy in pediatric traumatic brain injury. Platform Presentation. 14th Annual National Symposia of the National Head Injury Foundation. San Diego, CA December 3, 1995.
10. McDonough M, Mahalick DM Challenges to notions of rapid spontaneous recovery in mild head trauma. Platform Presentation. 14th Annual National Symposia of the National Head Injury Foundation. San Diego, CA December 3, 1995.
11. Mahalick DM, Bartlett JA, Molofsky W Psychopharmacological treatment of acquired attentional disorders in pediatric traumatic brain injury. Poster Presentation. 14th Annual National Symposia of the National Head Injury Foundation. San Diego, CA, December 3, 1995.

12. Mahalick DM, Molofsky W, Bartlett JA, (1996) Psychopharmacological treatment of Children with Attention Disorders acquired Secondary to Brain Injury. Nineteenth Annual International Neuropsychological Society Mid-Year Conference. Veldhoven, The Netherlands, June 22, 1996.
13. McDonough M, Mahalick DM, Greenberg JP. Malingering on neuropsychological assessment is more often an individual presentation than a litigation group phenomenon. Poster Presentation. National Academy of Neuropsychology. New Orleans, LA. November 2, 1996.
14. McDonough M, Mahalick DM, Greenberg JP. MRI confirmation of neuropsychological impairment of carbon monoxide toxicity. Poster Presentation. National Academy of Neuropsychology. New Orleans, LA. November 2, 1996.
15. Mahalick DM, McDonough M, Molofsky W, Greenberg JP. Psychopharmacological treatment of Pediatric Traumatic Brain Injury. Presentation. Twenty-Fifth Annual International Neuropsychological Society Conference. Orlando, FLA. February 5-8, 1997.
16. Mahalick DM, McDonough M, Molofsky W, Greenberg, JP. Psychopharmacological treatment of Pediatric Traumatic Brain Injury. Presentation. Eight Annual Meeting of the American Neuropsychiatric Association. Orlando, FLA. February 2-4, 1997.
17. Mahalick DM, McDonough M, Greenberg JP. Neuropsychological and neuropsychiatric presentation of a patient exposed to severe electrocution injury. Presentation. Eight Annual Meeting of the American Neuropsychiatric Association. Orlando, FLA. February 2-4, 1997.
18. McDonough M, Small M, Mahalick DM. Malingering on neuropsychological assessment is more often an individual presentation than a litigation group phenomenon-part II. Poster Presentation. Eight Annual Meeting of the American Neuropsychiatric Association. Orlando, FLA. February 2-4, 1997.
19. Mahalick DM, Hohn GE, Hunt CD, Schulder M, Carmel PW: Intracarotid Sodium Amytal Testing on Patients With AVM's: Its Utility a Function of the Size and Shunt Value of the AVM. Poster Presentation at the 17th Annual meeting of the National Academy of Neuropsychology, Las Vegas, Nevada. November 12, 1997.
20. Mahalick DM, Schulder M, Cathcart CS. Neuropsychological Findings After Stereotactic Radiosurgery for AVM's. LINAC Radiosurgery Conference Sponsored by the Department of Neurosurgery and the Department of Radiation Oncology, University of Florida, Gainesville, FLA. Paper # 030. Orlando, Florida. December 13, 1997.
21. Mahalick DM, Carmel PW, Molofsky W, Bartlett JA, McDonough M, Greenberg JP, (1998). Psychopharmacological Treatment of Pediatric Brain Injury. Annual Meeting of the American Association of Neurological Surgeons. Paper #817. Philadelphia, PA. April 1998.
22. Mahalick DM. (2004). Medication and Children with Brain Injury. Children and Brain Injury: Navigating Life. Brain Injury Association of New York State. Symposium 3 C. New York, NY. March 11, 2004.

**PRESENTATIONS:**

A. Professional:



Children's Specialized Hospital Symposium  
"Examining the Brain Injured Child"  
May 10, 1989.

Newark Beth Israel Medical Center  
Pediatric Grand Rounds  
"Neuropsychological Sequelae of Pediatric TBI"  
February 19, 1990.

University of Medicine and Dentistry-New Jersey Medical School  
Pediatric Grand Rounds  
"Neuropsychological Sequelae of Pediatric TBI"  
February 7, 1990.

Saint Peter's Hospital  
New Brunswick, NJ  
Pediatric Grand Rounds  
"Neuropsychological Sequelae of Pediatric TBI"  
September 6, 1990

Somerset Hospital  
Somerville, NJ  
Neurology Grand Rounds  
"Neuropsychological Sequelae of Pediatric TBI"  
February 2, 1990

Princeton Medical Center  
Neurology Grand Rounds  
"Neuropsychological Sequelae of Pediatric TBI"  
February 3, 1990

Children's Specialized Hospital Symposium  
"Attention Deficit Disorder: Neuropsychological Examination and Treatment"  
March 21, 1990.

National Head Injury Foundation  
New Orleans, LA  
Platform Presentation:  
"Spontaneous Recovery in Pediatric TBI"  
November 16, 1990.

University of Medicine and Dentistry-Robert Wood Johnson Medical Center.  
Neurology/Neurosurgery Grand Rounds  
"Pediatric Epilepsy"  
November 7, 1990

Children's Specialized Hospital Symposium  
"Enduring Aspects of Pediatric Head Injury"  
November 28, 1990.

University of Medicine and Dentistry-New Jersey Medical School  
Trauma Service Conference  
"Pediatric and Adult TBI"  
December 5, 1990.

UMDNJ-Robert Wood Johnson Medical Center  
Neurosurgery Grand Rounds  
“Neuropsychological Sequelae of Arteriovenous Malformations”  
December 12, 1990.

East Orange Veterans Administration Medical Center  
Neurology Grand Rounds  
“Neuropsychological Sequelae of Arteriovenous Malformations”  
June 5, 1990

Athens University, Aghia Sophia Children's Hospital  
Pediatric Grand Rounds  
Athens, Greece  
“Pediatric and Adult TBI”  
July 2, 1991

Washoe Medical Center  
Rehabilitation Grand Rounds  
Reno, Nevada  
“Pediatric and Adult TBI”  
September 6, 1991

New Jersey Academy of Psychology  
“Neuroanatomical Correlates to LD and ADHD”  
October 3, 1991

University of Medicine and Dentistry-New Jersey Medical School  
Trauma Service Conference  
“Pediatric and Adult TBI”  
October 9, 1991

The Kessler Institute- West  
Grand Rounds  
“Neurobehavioral Sequelae of Pediatric Head Injury”  
January 22, 1992

University of Medicine and Dentistry-New Jersey Medical School  
Trauma Service Conference  
“Neurobehavioral Sequelae of Pediatric and Adult TBI”  
October 14, 1992

Children's Specialized Hospital  
“Pre- versus Postoperative Neuropsychological  
Sequelae of Arteriovenous Malformations”  
July 8, 1992

Veteran's Administration Medical Center-East Orange  
“Pre- versus Postoperative Neuropsychological Sequelae of Arteriovenous Mal formations”  
November 4, 1992

Children's Specialized Hospital Symposium  
“Pediatric Cognitive Remediation Following Head Injury”  
April 21, 1993

University of Medicine and Dentistry-New Jersey Medical School  
Trauma Service Grand Rounds  
“Pediatric and Adult Head Injury”  
September 1, 1993

New Jersey Neuropsychological Society  
“Pre- versus Postoperative Neuropsychological  
Sequelae of Arteriovenous Malformations”  
November 15, 1993

University of Medicine and Dentistry-New Jersey Medical School  
Physical Medicine & Rehabilitation Conference  
“Neurobehavioral Sequelae of Pediatric and Adult TBI”  
April 24, 1994

University of Medicine and Dentistry-New Jersey Medical School  
Department of Psychiatry Grand Rounds  
“Pediatric and Adult Traumatic Brain Injury”  
September 13, 1995

University of Medicine and Dentistry-Robert Wood Johnson Medical School  
Department of Pediatrics Grand Rounds  
“Pediatric and Adolescent Traumatic Brain Injury”  
September 21, 1995

University of Medicine and Dentistry-New Jersey Medical School  
Section of Neurological Surgery Grand Rounds  
“Pediatric Traumatic Brain Injury: Psychopharmacologic  
Interventions with Methlyphenidate”  
October 10, 1995

University of Medicine and Dentistry-New Jersey Medical School  
Trauma Service Grand Rounds  
“Pediatric Head Injury”  
February 14, 1996

University of Medicine and Dentistry-New Jersey Medical School  
Section of Neurological Surgery Grand Rounds  
“Forensic Aspects of Traumatic Brain Injury”  
May 12, 1998

Morristown Memorial Hospital  
Pediatric Grand Rounds  
“Pediatric TBI:Diagnosis, Treatment, and Recovery”  
September 14, 1998

Overlook Hospital  
Pediatric Grand Rounds  
“Pediatric TBI:Diagnosis, Treatment, and Recovery”  
September 21, 1998

Queen Elizabeth Hospital  
Bridgetown, Barbados  
Neurosurgical/General Surgical Grand Rounds  
“Pediatric and Adult Traumatic Brain Injury”

August 12, 1999

Co-Attending of the Month  
Department of Pediatrics  
Robert Wood Johnson Medical School  
December, 1999

Morristown Memorial Hospital  
Pediatric Grand Rounds  
“Understanding Pediatric Traumatic Brain”  
April 12, 2000.

Co-Attending of the Month  
Department of Pediatrics  
Robert Wood Johnson Medical School  
December, 2000.

University of Medicine and Dentistry-New Jersey Medical School  
Trauma Service Grand Rounds  
“Pediatric and Adult Head Injury”  
September 19, 2001

Overlook Hospital  
Pediatric Grand Rounds  
“Pediatric TBI:Diagnosis, Treatment, and Recovery”  
September 16, 2002

University of Medicine and Dentistry-New Jersey Medical School  
Section of Neurological Surgery Grand Rounds  
“Psychopharmacological Treatment ofTraumatic Brain Injury”  
December 18, 2002

Somerset Hospital  
Somerville, NJ  
Neurology Grand Rounds  
“Understanding Traumatic Brain Injury”  
April 9, 2003

University of Medicine and Dentistry-Robert Wood Johnson Medical School  
Department of Pediatrics Grand Rounds  
“Pediatric and Adolescent Traumatic Brain Injury”  
October 22, 2003

University of Medicine and Dentistry-New Jersey Medical School  
Physical Medicine & Rehabilitation Conference  
“Neurobehavioral Residuals of Anhydrous Ammonia”  
December 11, 2003

# KOWALSKI & DEVITO



## William N. DeVito

*Managing Attorney*

80 Pine Street, Suite 300  
New York, NY 10005  
Office: (718) 250-1100  
Fax: (718) 250-1168

Work: (718) 250-1116; Cell: (917) 692-8512  
Email: [William.DeVito@aig.com](mailto:William.DeVito@aig.com)

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### BIOGRAPHY

Mr. DeVito joined the firm in 2000 as a Trial Attorney. He began his career as a law clerk for the Superior Court of Connecticut. Shortly after completing his clerkship he began his litigation experience with a prominent plaintiff trial firm in New York City. In 1996, he joined an insurance carrier's staff counsel office and led an affirmative motion unit. In 1998, he was promoted to trial attorney and exclusively handled trial matters in Kings County.

After joining Staff Counsel he was promoted to Senior Trial Attorney and became a dedicated handling attorney for a major municipal contractor and city agencies. From 2006 to 2008 he managed bad-faith litigation throughout the country for personal lines. He has handled construction, automobile, UM/UIM, and general liability cases. He is active in Staff Counsel's CLE and CE training program and has developed and presented courses on defending Traumatic Brain Injury claims, Premises Liability, Life Care Plans and the New York City Administrative Code as applied to trip and fall cases. He has also served as a Continuing Legal Education Speaker and Instructor for the Defense Association of New York (DANY) and the National Business Institute (NBI).

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### EDUCATION

- B.A., Adelphi University, 1990 *Cum Laude* with Honors in Liberal Studies
- J.D., Pace Law School, 1993

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### ADMITTED

- New York
- New Jersey
- Connecticut
- U.S. District Court, Southern District of New York
- U.S. District Court, Eastern District of New York
- U.S. District Court, District of New Jersey

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### MEMBERSHIPS

- Defense Association of New York, Inc.