

Contrast

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About Us

The Endurance Healthcare Liability practice focuses on excess medical professional liability for multiple hospital systems, integrated delivery networks, university teaching hospitals and large specialty hospitals. Our clients are typically sophisticated purchasers who practice strong clinical risk and claims management.

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Letter from the Editor

Dear Colleagues:

It's almost that time of year again—and no, I don't mean time for the World Series or college football games. It's nearly time for the ASHRM conference. With Chicago being centrally located and relatively easy to travel to, we hope to see many of you there. It's always a great time to see old friends, get reacquainted, and make new friends, too. We hope that you will all be able to join us for our annual Client Appreciation Breakfast.

We are pleased to offer our latest installment of *Contrast*. This publication is prepared in-house by our healthcare team and is dedicated to sharing news, trends and developments with respect to medical negligence litigation and risk management.



In this issue, and the next two issues to follow, you will find an informative article, reprinted with permission, by Barry Montgomery and Bradley Nahrstadt entitled "Advanced Strategies for Defending Complex Brain and Spinal Cord Cases." Due to its length, we are reprinting this article in three parts. You don't have to be a neurosurgeon to understand the principles discussed in this article. In fact, a large part of what is presented here are sections describing the brain and how it works, and the diagnostic tests that are used to assess and "prove" brain damage. These are extremely helpful in understanding what can be very complicated topics. In addition, this part also includes discussions on the use of technology at trial, developing trial themes that resonate with jurors, how to deal with neuropsychological evidence, and the first few sections of a detailed analysis about how to cross examine the neuropsychologist expert witness at trial.

The rest of this article will be reprinted in the next two issues of *Contrast* and will include the remaining discussion about cross examining the neuropsychologist. In addition, they will include discussions about jury trials vs. judge trials, how to prepare for a mock trial, a really good analysis of the techniques and strategies the defense can use to reduce the jury assessment of damages, and how to do good closing arguments.

In this issue, you will also find an article by Scott Crockett, an attorney at Wagstaff & Cartmell, discussing trends in tort reform measures that are being taken by the various states. This article looks at whether tort reforms are still being enacted with the same fervor that they were in the recent past.

Thank you for allowing us to share these discussions with you. As always, we thank you for your support and look forward to serving you.

Yours truly,


Judy Hart

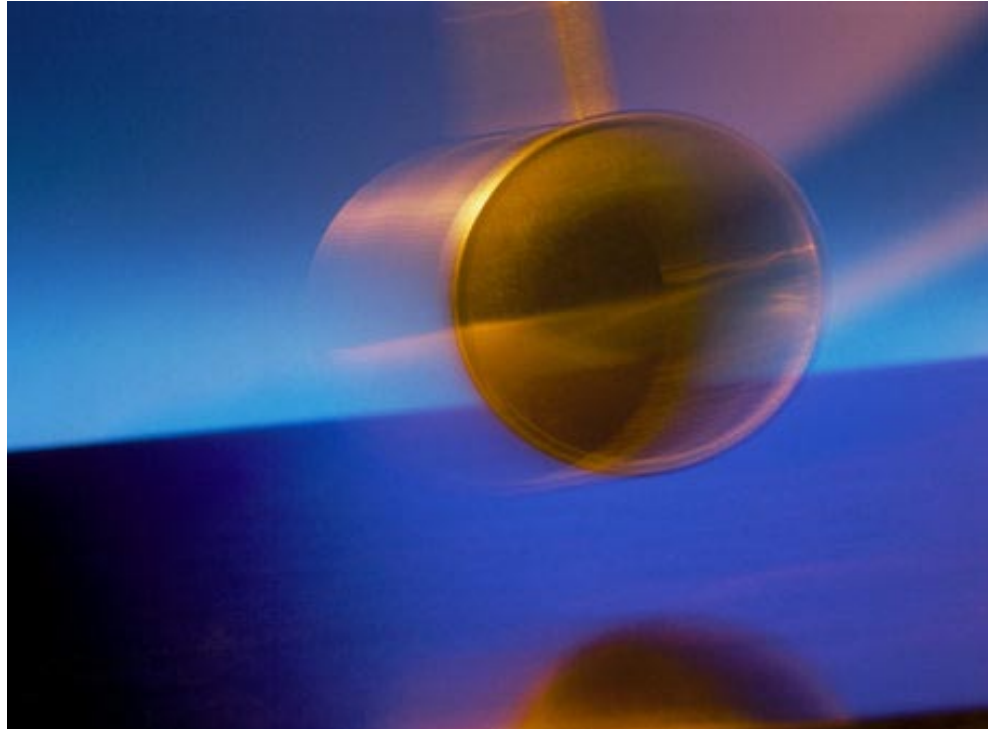
Tort Reform: Is the Pendulum Swinging Back?

By Scott Crockett
Wagstaff & Cartmell

Everything is cyclical, or so they say. Could it be true for medical malpractice tort reform? There are indications that the tort reform pendulum has stopped moving. And the question now is whether momentum is building to push it back the other way.

Medical malpractice tort reform, or tort reform generally, has been introduced, debated and fought over in every state in the country over the last five years. At least thirty five states have tweaked their laws in some fashion or another, giving a nod to reigning in medical malpractice litigation and costs. Some states, most notably Texas, have passed sweeping tort reform measures. But no state has been quite so sanguine of late and the odds are they won't be again, at least in the short term.

One of the big objectives for tort reform advocates in the last few years has been Federal level tort reform that would trump less restrictive state laws. It passed numerous times in the US House and came within ten votes of passing the US Senate. Both were Republican controlled at the time. Nearly all observers now believe that the prospects for any meaningful Federal legislation are DOA at least for now. That conclusion reflects not only the sympathies of the "party in power", but also what may be deflating political will amongst tort reform advocates.



The AMA, AHA, ATRA and other affiliated groups will deny that they have lost the initiative and will continue to make tort reform a priority. But one senses less urgency to the fight. Why? First, because medical malpractice rates have generally speaking stabilized or dropped in some areas and second because some of the tort reform enacted thus far has in fact dampened frequency. In the next few months numerous studies will be released that speak to frequency and severity with hard numbers, so we will see what the data tells us. But as Bob Dylan famously wrote, you don't need a weatherman to know which way the wind blows.

Communication experts tell us about the power of perception even when it doesn't match up to reality. There is a building perception that tort reform is unfair to some categories of plaintiffs, namely those that have lower dollar claims and those that involve older or even poorer plaintiffs, who don't have significant lost income claims.

The biggest potential challenge to medical malpractice specific tort reform is simply the disparate treatment of the malpractice plaintiff. The US Constitution as well as most state constitutions call for "equal protection" or equal treatment under the law. If a malpractice plaintiff can only recover \$250,000 for pain and

suffering but a truck accident plaintiff can recover an unlimited amount there is clearly not equal treatment. Violation of the equal protection doctrine is historically the most common basis for overturning tort reform laws.

In the last few years there have been a number of cases where significant aspects of tort reform laws have been either limited in scope or thrown out entirely by courts. For example, after ten years of non-economic damage caps in Wisconsin, the Wisconsin Supreme Court ruled in 2005 that the cap was unconstitutional under equal protection grounds. In response, a new cap of \$750,000 (formerly the cap ranged from \$350,000 to \$500,000 depending on the nature of the case) was enacted. Whether the new cap will pass constitutional muster remains to be seen.

In September of 2006 a Louisiana Appellate Court struck down that state's \$500,000 cap on medical malpractice damages. The Court reasoned that the cap no longer provided an adequate remedy. We understand that the Louisiana Supreme Court will review the decision.

Other states have also seen some chipping away at the margins of tort reform legislation. Georgia last year saw its Supreme Court strike down the venue provision of its new tort reform legislation. An Oregon appellate court ruled last year that caps on the liability of public

agencies providing medical care do not cap the liability of employees of those agencies. Talk about the exception swallowing the rule.

Oklahoma's Supreme Court ruled late last year that a new law requiring plaintiffs to file an affidavit of merit from an expert witness was unconstitutional because it created a "special class" of plaintiffs. The Court reasoned that the requirement created an unconstitutional monetary barrier to the courts.

Constitutional challenges and piecemeal attacks on tort reform are nothing new. To the extent that the crisis is moderating or improving, however, courts will be more prone to find no "rational relationship" between tort reform laws and the medical liability crisis. If there is no crisis courts will be ever more inclined to say that say that the new laws violate equal protection requirements.

If the pendulum is indeed stuck, or is beginning to move the other way, it's an ironic situation for excess carriers and reinsurers—severity is usually the thing that impacts them the most. Regardless of tort reform, big damage cases will still be pursued vigorously by highly skilled plaintiff attorneys. Barring a cap on all damages, a patient compensation fund or some other significant change to the tort system, bad cases are bad cases and no pain and suffering cap will alter that reality.

While some tort reform laws do moderate or reduce severity (e.g., California), most shift the battleground to the un-capped economic damages part of the case. Its not news that plaintiff "life care" planners and economists gin up huge numbers for future care, assume normal life expectancies for severely injured people and otherwise load up the economic damages. Defendants are left in the unenviable position of showing why the injured party does not need certain types of care, care by certain types of providers, care for certain lengths of time, etc. And worse yet, they must talk about the plaintiff's realistic life expectancy, opening themselves up to the charge that "first they hurt him, now they want to say he won't live very long."

The sky is not falling for tort reform, but it does bear watching. ◀

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Advanced Strategies for Defending Complex Brain and Spinal Cord Cases[†]

By C. Barry Montgomery & Bradley C. Nahrstadt

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This reprinted article is part one of a three part series due to its length. Look for parts two and three in the next two issues of Contrast.

I. INTRODUCTION

Few cases prompt greater cause for concern among defense counsel than those involving brain damage or spinal cord injury. Every aspect of these cases is troublesome. They always concern devastating injuries, usually involve horrific accidents, mistakes, or product malfunctions, and often center around the conduct of large corporations, hospitals, or other entities. The stakes are high and the possibility of a disastrous outcome is even higher.

The key to defending high-stakes brain and spinal cord injury cases is to recognize what works and to apply those principles consistently. Decades of trial practice have taught that specific techniques and trial strategies can either reduce the verdict awarded to a seriously injured plaintiff or even, in some cases, eliminate that award altogether. What follows are suggestions for containing or eliminating damage awards in complex brain and spinal cord injury cases.

II. NEW DEVELOPMENTS IN TRIAL TECHNOLOGY THAT MAKE THE CASE COME ALIVE

This is an age of instant communication. It is the age of television, lap top computers, and palm pilots — an age where a barrage of information is delivered in neatly packaged sound bites in all spheres of life. Today's jurors are accustomed to obtaining and receiving information in visual form. As a result, jurors today expect — and may even demand — that evidence be presented to them through some medium other than the spoken word of a witness or the written word of a document.

In this environment, the PowerPoint program offers an effective way to illustrate quick nuggets of information. PowerPoint is included in the Microsoft Office software suite and is easy to use. This software allows the trial attorney an opportunity to encapsulate important information about the case theme, plaintiff's damages, and liability issues in creative and visually appealing slides. When counsel's personal computer is connected to a projector and the slide images are projected onto a big screen in the courtroom, jurors become stimulated by the important information they need to decide the case.

TimeMap represents another popular graphics tool. TimeMap is a program which allows the parties' lawyers to analyze and maintain control over the important data in a case. TimeMap allows for the creation of a visual chronology of the important information, presenting that information in a timeline format. This type of visual display is highly effective when the case revolves around a particular chronology or sequence of events. Using TimeMap presents jurors with a "snapshot" version of the events and offers them a tangible display of those facts defense counsel chooses to emphasize.

One of the most innovative technologies developed in recent years is a computer system on which trial exhibits can be imaged, called up and displayed on monitors set before the judge, jury, and opposing counsel. Unlike poster board counterparts from days gone by, computerized versions of the exhibits can be highlighted, excerpted, and enlarged by this system as witnesses testify. Different versions of such trial presentation software include Trial Director and Sanction.

Perhaps the most effective way to present evidence to the jury, especially in a case involving complex issues of liability or damages, is through use of computer animation. Computer animators can generate lifelike images of accident scenes,

product composition, and mechanics of injury, to name but a few. Because it is difficult for a jury to visualize in three dimensions, computer-generated animation can help jurors see and understand evidence in the manner most conducive to the defense perspective. Another key advantage in using computer-generated animation is that images can be modified with a few short key strokes. If the judge has a problem with the way something is depicted, or if the evidence changes and the animation must be changed as well, the changes can be made quickly and the evidence preserved for the jury.

III. DEVELOPING A VIBRANT TRIAL THEME

Every experienced trial attorney knows that jurors need some way to organize and process all of the information they receive at trial. And research shows that the vast majority of people organize new information in a story format over any other.ⁱ As a result, the defense attorney must organize or create a story to capture the jurors' developing interest. This story also must have a theme — a theme that will resonate with the jurors and move them to the defendant's side.ⁱⁱ

Consequently, the defense must develop a story of the case that is "above the evidence" and fits with the psychology, emotions, and humanity of the case.ⁱⁱⁱ The defense must discover not only the "who," "what," "when," and "where" of liability and damages, but also the "why." Knowing the "why" unlocks an under-



standing of all facets of the case and allows the defense to craft a presentation responsive to the likely emotions of the jury.^{iv} It also allows defense counsel an opportunity to make the "courtroom facts" consistent with the "real world facts" so that jurors can deliver a defense verdict.^v

Whatever the theme, it is important to remember that the theme developed for trial must account for the damages suffered by the plaintiff. Like it or not, the damages are a part of the case story; they cannot be ignored.^{vi} By incorporating damages into the trial theme, defense counsel can reduce the jury's perception of the degree of harm suffered by the plaintiff and reduce the jury's perception

that the money requested by the plaintiff will do something worthwhile. Using a comprehensive theme will demonstrate to the jury that the money requested by the plaintiff will not compensate for anything, and will force the plaintiff to spend time establishing liability, minimizing the time spent on damages.^{vii} In short, a comprehensive trial theme can reduce the jury's expectations for the plaintiff's recovery.

Individuals who have studied the development of a case theme have identified three predominant approaches: (1) the attribution theory/choice theme; (2) the counterfactual thinking theme; and (3) the story model. Each will be discussed in turn.

Continued next page

When a plaintiff engages in a certain behavior, it is important to consider whether the plaintiff had a choice. Attribution theory indicates that when a person chooses to do something, that person is seen as responsible for the consequences of that choice.^{viii} To the extent that the plaintiff (or for that matter, the defendant) is seen as having a choice of conduct, jurors will feel that the party is responsible for the consequences of that choice.^{ix}

Most attorneys use a version of the choice theme when they introduce the notion of personal responsibility. Jurors reach conclusions about personal responsibility when rendering a decision that centers around choice.^x In other words, if someone chooses to do something, jurors are much more likely to see him or her as personally responsible for the outcome of that choice.^{xi} The difference between presenting the theme as choice or as personal responsibility lies in the process of jury deliberation: as a result of the choice theme, jurors will conclude on their own that an individual is responsible rather than having to be told that he or she is responsible by an attorney.^{xii}

Jurors seem to be more accepting of the choice theme, as opposed to the personal responsibility approach. Therefore, the choice theme may be more persuasive.^{xiii} Using the choice theme, defense counsel should develop his or her trial theme around the idea that the plaintiff had a choice; i.e., the plaintiff chose to get into the car with an intoxicated driver; the plaintiff chose to use the product in question when he knew that it was miss-

ing a safety guard; or the plaintiff chose to take the drug in question without reading the warnings or consulting a physician. In cases where the personal choice theme is developed, jurors are reminded throughout the course of the trial that the plaintiff is responsible for his or her own injuries because of the choices made.

The use of counterfactual thinking represents a second approach to theme development. Counterfactual thinking occurs when a person evaluates an event by how easily it could have been undone to create a different, usually more positive, outcome.^{xiv} The ease with which a juror can undo the negative event with counterfactual thinking affects the amount of blame the juror attributes to a party. The more counterfactuals jurors can create to prevent the negative outcome, the more they blame the party they feel could have changed the outcome of the event.^{xv}

The question answered by a counterfactual usually takes the form, “if only...” or “what might have been...”^{xvi} An example of this approach might be: “If only the plaintiff had read the warnings that were provided with the machine, the accident would not have occurred.” A counterfactual creates an alternative way of looking at a situation — in essence, an alternative reality.^{xvii}

The most effective use of counterfactuals considers which “if only” arguments the plaintiff and defendant could make. In preparation of a case, the defendant should develop its own themes using the “if only” form.^{xviii} For example, “If only

the plaintiff had taken the medication prescribed by the defendant...” or, “If only the plaintiff had used a safety line...” By developing a case theme designed to counteract the plaintiff’s “if only” theme, defense counsel can defuse the plaintiff’s theory of the case and provide the jury with an alternative which emphasizes the basis for a defense verdict.

The third approach to developing a case theme involves use of the story model to craft the case presentation. In order to find the story of the case, defense counsel must fully understand the facts of the case and the law that will apply to those facts. She must also construct the story her opponent is likely to tell the jury. Then she must identify images, metaphors and anecdotes that compellingly illustrate the defendant’s side of the story.^{xix}

As the defense story is constructed, counsel must constantly ask herself: (1) Does it make sense?; (2) Does it convey the themes of the case?; (3) Does it explain what happened?; (4) Does it explain all the evidence or leave loose ends?; and (5) Is it compelling?^{xx} If the story meets these criteria, it can be an exceptionally powerful tool to convey the complex legal and technical concepts that often inhabit the catastrophic injury case.

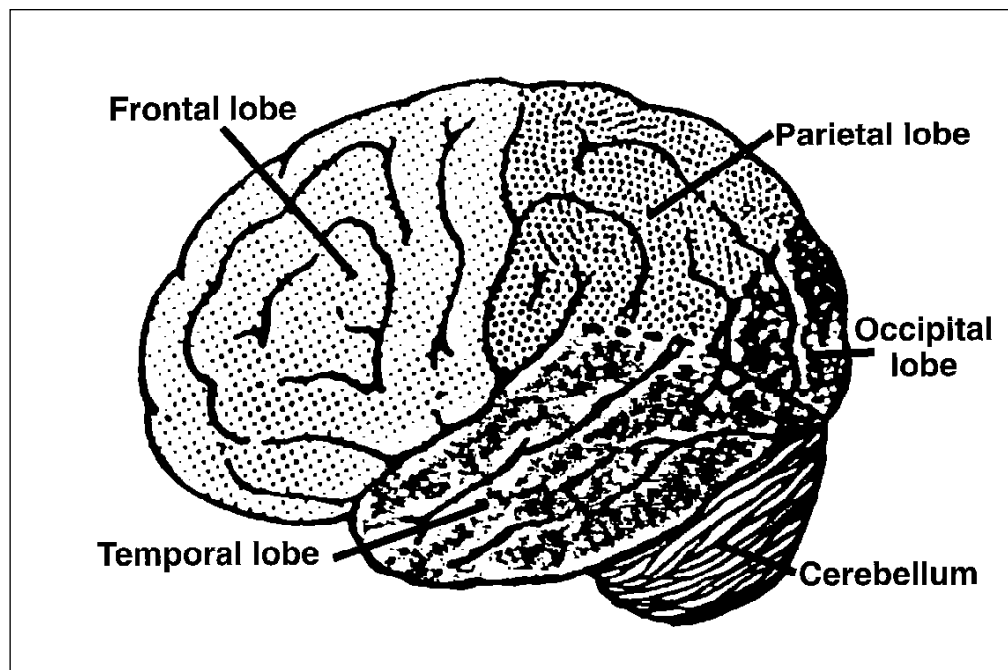
Many catastrophic injury cases involve corporations or other large entities as defendants. The challenge for defense counsel in developing a defense story for the jury is to find a way to personify the corporate defendant — to make the jurors care about the company. Ideally,

the case story will make the jurors think of the company, rather than the plaintiff, as the main character in the trial. Perhaps the founder of the company is a Horatio Alger character, i.e., the poor kid who pulled himself up by the bootstraps to find success; or a Rockefeller, the rich kid who uses his money to benefit the community; or the hard working little guy who is trying to stay alive in the midst of corporate takeovers.^{xxi} Defense counsel must put a face on the company, focusing its story by telling the jury its history, describing the individuals who built the company and provided jobs, and explaining its contribution as an important actor within the community. By personifying the company and telling its story, defense counsel takes steps to ensure that the jury can vote for the defendant, not simply *against* the plaintiff.^{xxii}

IV. UNDERSTANDING THE BRAIN

In order to effectively cross-examine the plaintiff's experts, especially in a case involving alleged brain damage, it is vitally important for defense counsel to understand the anatomy of the brain and the diagnostic tests often relied upon by physicians in their efforts to identify brain damage. The four principal areas of the brain are the cerebrum, the diencephalons, the brain stem, and the cerebellum.^{xxiii}

The cerebrum is divided into the frontal lobe, the parietal lobe, the temporal lobe, and the occipital lobe. The cerebrum is divided in half by the right and left hemispheres. The contour of the brain is made up of convolutions, which permit the surface of the brain to be folded



into a much smaller area — so much so that approximately eighty percent of the brain's surface remains hidden in the crevices. The frontal lobe is located at the front of the brain. The parietal lobe is located behind the frontal lobe. The temporal lobe is below the frontal and parietal lobes. The occipital lobe lies at the posterior.^{xxiv}

The outer portion of the cerebrum is labeled the cortex and is composed of gray matter that contains several layers of nerve cell bodies. Beneath the cortex is the white matter, which consists of numerous axons and neuroglia cells. The basal ganglia is the deep part of the cerebrum that connects the cerebrum with the mid-brain, cerebellum, and the spinal cord. The basal ganglia is the message center that sends sensory and motor messages to the other brain structures.^{xxv}

The limbic system is comprised of four principal components: amygdale, hippocampus, septum, and singulate gyrus. The limbic system is contained within the temporal lobe and extends anteriorly into the frontal lobe and posteriorly into the mid-brain. The limbic system controls emotional feelings, behavior, and memory. Within the limbic system is the Papez circuit, which is critical to the retention of new information.^{xxvi}

The frontal lobes of the brain are primarily responsible for executive functioning, such as initiation, organization, planning, execution, inhibition of impulses, short-term memory, and complex motor movements. Injuries to this area of the brain impair the ability to perform voluntary movements on the opposite side of the body. The arm/hand and leg/foot on the opposite side of the body become spastic, and reflexes become hyperactive

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when damage is done to one of the sides of the frontal lobe.^{xxvii}

The parietal lobe contains sensory areas for the discrimination of sensory input, such as pain, temperature, touch, and taste. The parietal lobe provides a person's ability to recognize the parts of the body and to discriminate the right side of the body from the left side of the body.^{xxviii}

The temporal lobe contains the auditory system where sound is interpreted, language functions occur, and smells are identified and recognized. The temporal lobe also assists in some memory functions.^{xxix}

The occipital lobe contains the primary visual area. This lobe of the brain allows for the association between what is being seen in comparison to what has been seen in the past. It also allows a person to understand written words.^{xxx}

The cerebral hemispheres house a bundle of neural fibers deep in the brain that connect the two hemispheres and allow information to be transmitted from one side of the brain to the other. In that way, objects that are identified as to weight, shape, and texture on one side of the brain are transmitted to the other side of the brain, where the object is recalled and associated with its name.^{xxxi}

The left hemisphere of the brain is typically associated with language functions, skilled motor movements, mass skills, reading comprehension, and political

procedures. The right hemisphere controls the perception of non-speech sounds, visual-spatial relationships, artistic and musical abilities, and abstract thinking. Both hemispheres of the brain are associated with memory.^{xxxii}

A person suffering from a brain injury usually exhibits signs of impairment in one or more of three categories: (1) somatic, (2) cognitive, and (3) behavioral. The somatic or physical complaints and disabilities can include photosensitivity, double vision, reduced noise tolerance, insomnia, nausea, neck pain, alcohol intolerance, and lack of energy, as well as speech, hearing, and olfactory dysfunction. On a cognitive level there may be deficits in immediate as well as short and long-term memory, concentration problems, slowed thinking, reduced ability for simultaneous mental retention of several items of information, abnormal mental fatigability, reduced speed in solving problems, failure to recognize familiar things, an inability to understand spoken or written words, an inability to carry out skilled, complicated movements, and problems with perception, sequencing, judgment, and communication. Possible behavioral consequences of a brain injury include depression, lack of empathy, anxiety, sexual dysfunction, mood swings, irritability, social withdrawal, reduced emotional closeness and trust in personal relationships, confusion, and exacerbation of pre-injury emotional vulnerabilities.^{xxxiii}

V. UNDERSTANDING DIAGNOSTIC TESTS USED TO ASSESS AND "PROVE" BRAIN DAMAGE

Plaintiffs and their attorneys have, for several years, turned to sophisticated diagnostic tools like x-rays, computerized axial tomography ("CAT") scans, magnetic resonance imaging ("MRI") scans, electroencephalograms ("EEGs"), cerebral arteriographs, positron emission tomography ("PET") scans, single photon emission computerized tomography ("SPECT") scans, and quantitative electroencephalography ("QEEG") or brain mapping in an effort to detect brain damage. As sophisticated as these tests are, however, they simply cannot meet the challenge of detecting the type of damage commonly associated with microscopic brain injury. Defense counsel therefore should be extremely wary when confronted with a plaintiff who claims that one of the above-referenced diagnostic tests is concrete proof of brain damage.

X-ray machines use photographic plates to capture images of the electromagnetic radiations that are emitted from a substance when it is bombarded by a stream of electrons moving in a vacuum at extremely high velocity. X-rays are ideal for diagnosing fractures and other abnormalities in bony structures, but are not at all helpful in diagnosing damage to soft tissues. X-rays decidedly would not be beneficial in detecting the type of microscopic brain damage that may be caused by sheering forces, long term exposure to toxic chemicals, or other mechanisms of injury.

Computerized axial tomography (“CAT”) scans produce a computer-generated image of a cross-section of an organ, such as the brain. During a CAT scan, a computer receives information from x-ray beams and reconstructs an image of the scanned organ on the computer monitor. The x-ray source and the electronic receiver move about an axis, which creates a clear, black and white, cross-sectional image of the organ on one plane.^{xxxiv} The problem with CAT scans is that although they produce clear cross-sectional images of the physical structure of the brain, they can only identify major anatomical injuries, or macroscopic injuries, such as subdural hematomas and hemorrhages. Superficial contusions of the cortex are frequently obscured on CAT scans by contiguous bone. In addition, small hypothalamic and brain stem infarcts cannot be seen on CAT scans, and injuries of the cerebral white matter usually are not identifiable, unless they are hemorrhagic. Beyond that, CAT scans cannot readily identify the microscopic damage to axons and neurons that may be the cause of a plaintiff’s brain damage.^{xxxv}

Magnetic resonance imaging (“MRI”) scans do not use ionizing radiation; rather, they use a magnetic field and radio frequency waves to generate an image of a particular structure in the human body. MRI is a technique based on imaging of the hydrogen protons in the body. As the patient enters the magnetic resonance scanning field, millions of the billions of hydrogen protons in the body align themselves with the magnetic field. The subsequent application of an intermittent radio frequency wave causes the

aligned protons to tilt off their axis. After discontinuing the radio wave, the protons gradually realign themselves within a finite amount of time. As they realign, the protons discharge a small amount of energy. The energy, time, and location of the protons are measured, translated to a gray scale, and then imaged. Every different tissue and organ in the body, both normal and abnormal, displays a different signal intensity on the final magnetic resonance image. It is these subtle differences in signal which form the basis of magnetic resonance imaging.^{xxxvi} MRIs, like CAT scans, are far from reliable in detecting subtle organic brain damage.^{xxxvii} In some cases, MRI scans cannot be used to identify even acute subarachnoid hemorrhaging, much less the microscopic tissue damage sometimes associated with trauma to the brain.^{xxxviii}

An electroencephalograph uses electrodes which are attached to the scalp to record the electrical currents that are generated by the brain. This procedure yields a lineal record of the currents, called an electroencephalogram (“EEG”) or a quantitative electroencephalogram (“QEEG”).^{xxxix} By measuring electrophysiological or metabolic brain function, the EEG records gross brain activity. However, EEGs often show normal readings on a patient who is suffering from even moderate brain damage, unless the patient actually experiences a seizure during the test.^{xl} Electroencephalograms, like MRIs and CAT scans, are not at all reliable in predicting the microscopic brain damage typically highlighted in toxic tort cases, for example. As such, defense attorneys should be wary when plaintiffs

claim that these test results prove organic brain damage.

Cerebral arteriography or angiography is performed by obtaining serial fast x-ray images of the brain during the administration of contrast media into the arteries. This contrast media provides an outline of the intracerebral vessels as it circulates within them. Competency, distribution, and configuration of the arteries and other intracerebral vessels can be ascertained from these images.^{xli} Cerebral arteriography is, by its very nature, limited to the imaging of the intracerebral blood vessels. If the injury to the plaintiff’s brain does not involve the intracerebral blood vessels, a cerebral arteriogram will not help the plaintiff prove his or her case of brain damage.

Positron emission tomography (“PET”) scans measure metabolism. First, the patient is injected with a radioisotope tracer which “tags” glucose in the bloodstream. After the patient is injected with the radioisotope, he or she lies on a table which slides into the middle of a circular scanner. While the patient’s head is kept in a still position, the PET scanner detects gamma rays from the positron-emitting radioisotopes and collects multiple images of the patient’s brain from different angles. A computer then processes the information collected by the PET scanner and produces color-coded images of metabolism throughout the brain.^{xlii}

Single photon emission computerized tomography (“SPECT”) scans are performed in much the same way as PET scans, but provide a much cheaper

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alternative since they utilize readily available radioisotopes. Because the spatial resolution of SPECT technology is inferior to PET technology, the resulting images are less exact since the colors tend to blur together. Technically, SPECT scans can only measure cerebral metabolism indirectly. SPECT scans actually measure cerebral “profusion” or blood flow. Hence, whenever there is a restriction of the blood supply in the brain, the radioisotopes cannot concentrate in the affected area and will show up as voids or “cold” lesions on the SPECT scan.^{xiii}

Given their limitations, defense counsel can attack a plaintiff’s use of PET or SPECT scans in a variety of ways. First and foremost, plaintiff’s reliance on PET and/or SPECT scans should be challenged with a motion based on *Daubert v. Merrell Dow Pharmaceuticals*.^{xiv} Much has been written about the *Daubert* decision, and this article will not belabor the important legal significance of that decision. However, it should be noted that PET and SPECT scans have been subject to much criticism by the scientific community. In particular, these scans have been challenged for their failure to meet acceptable scientific levels of methodology and criteria and for their failure to reach the level of sophistication and reliability necessary to diagnose neurological and cognitive deficits.^{xv} As such, these tests are the type of scientific evidence that *Daubert* was designed to eliminate from courtroom proceedings. Indeed, applying the *Daubert* philosophy, some courts have refused to allow plaintiff’s experts to rely on PET and SPECT scans

as evidence of the plaintiff’s neurological or cognitive deficits.^{xvi}

If a *Daubert* motion fails, defense counsel should be prepared to elicit testimony that PET, SPECT, and QEEG scans are quite variable and are subject to a great many dependent factors. To begin with, the equipment used to perform the scans comes in different configurations, such as camera based or non-camera based, high resolution or low resolution, and single or multi-head systems. In addition, the quality of a specific scan is dependent on many factors, including the type of equipment, filters, or tracers used, the time between the tracer injection and the scan, the duration of the scan, the mental state of the patient during the scan, any patient movement during the scan, audio and visual stimulation of the patient during the scan, the alignment of the scanner to the patient, variations in the processing and display of the scan, the method of reconstruction and analysis, and the overall quality of the scan.^{xvii} All of these variables make it almost impossible for a witness to testify honestly that a plaintiff’s PET, SPECT or QEEG scans permit him or her to determine the cause of any abnormalities seen on the scans.^{xviii}

Defense counsel also should realize that the typical methods of interpreting PET, SPECT, and QEEG scans are highly subjective and can vary from one interpreter to another based on the interpreter’s experience, expertise and/or clinical bias. Subjective differences in interpretation can even occur between institutions based on differences in equipment, institutional experience, and protocols.^{xix}

In addition, defense counsel should note that the most basic parameters for PET, SPECT, and QEEG scan interpretation — the terms “normal” and “abnormal” — do not have common and universal definitions. For that reason, counsel should not hesitate to raise the issue. PET, SPECT, and QEEG scans also suffer from a lack of standardized definitions, a lack of standardized quantitative analysis, a lack of published standards for disease pattern identification, and the lack of a recognized protocol for producing PET, SPECT, and QEEG scans to identify specific diseases.ⁱ All of these limitations should be raised before the trier of fact to illustrate the tenuous nature of these diagnostic imaging techniques.

One other point deserves mention regarding PET and SPECT scans. Defense counsel should always ascertain whether the PET or SPECT scans at issue were performed by a physician who is certified by: (1) the American Board of Radiology, (2) the American Osteopathic Board of Radiology, or (3) the American Board of Nuclear Radiology. If the physician who performed the scans was not certified by one of these three bodies, then the physician’s license to perform PET or SPECT scans was received directly from the Nuclear Regulatory Commission, in which case the physician may not be board certified in any medical specialty.ⁱⁱ Such information may be used effectively to impeach the credentials of the individual responsible for producing the images that allegedly demonstrate brain damage.

VI. DEALING WITH NEUROPSYCHOLOGICAL EVIDENCE

Almost every case that involves a brain injured plaintiff involves the testimony of a neuropsychologist.ⁱⁱⁱ Neuropsychology is a sub-specialty of psychology; it studies the relationship between the brain and behavior, as well as the behavioral consequences of brain damage. Clinical neuropsychologists (the practitioners in this field) assess how and to what extent brain trauma or brain disease affects a person's ability to perceive, think, memorize, judge, feel, and act. Such determinations are made through the use of a neuropsychological evaluation and several different neuropsychological test batteries.

The neuropsychological evaluation essentially serves four functions. First, the evaluation seeks to determine whether there is abnormal behavior. Abnormal behavior is often characterized as a dysfunction or an impairment. Second, the evaluation seeks to determine the extent or degree of the behavioral abnormality. Third, the evaluation seeks to determine whether the abnormal behavior is organic in cause, or caused by an emotional or other mental problem. Fourth, assuming that there is an organic injury, the evaluation seeks to determine the location and kind of injury which might cause the abnormal behavior.ⁱⁱⁱ

A clinical interview conducted by the neuropsychologist is an essential initial element of the evaluation. The interview takes approximately two hours to complete. The neuropsychologist obtains

a social, work, and educational history, solicits the patient's complaints, and administers a mental status examination to determine whether the patient is oriented. After the interview, the patient undergoes the actual tests. The tests are relatively standard and take approximately five hours to administer.^{iv}

In general, the test batteries used by neuropsychologists measure a wide range of abilities now considered to rely on "basic" brain functions: general intelligence, reasoning, memory, orientation, perceptual functions, perceptual-motor processing, language and mental flexibility, as well as speed of response, attention, and concentration.^{vi} The patient's performance levels on the tests and his or her behavior are compared to norms — the performance levels of people who have not sustained brain damage. Deviations beyond the standard deviation from the norms are considered impairments or dysfunctions.^{vii}

The best-known group of neuropsychological tests, and indeed an indicative model for these types of tests, is the Halstead-Reitan Battery. The manual for the Halstead-Reitan Battery identifies norms, called "criterion scores," which are used to determine whether the score for a particular test is indicative of brain damage or within the range of normal behavior on that test.^{viii} Among the segments of the battery that test the brain's executive functions are the Complex Figure Test, the Wisconsin Card Sorting Test, and the Category Test. Language skills are measured by the Controlled Oral Word Association Test and the Boston

Naming Test. Verbal memory is evaluated using the Auditory Verbal Learning Test or the California Auditory Verbal Learning Test.^{ix}

Attention is tested with the Wechsler Memory Scale (a test battery that measures various types of immediate or short-term memory to determine whether the behavior is indicative of brain damage or within norms), the Trail Making Test, and the Stroop Test.^x The Complex Figure Test assesses organizational efficiency, visuo-motor memory, and the retention of motor information over time. Visuo-motor function is often evaluated with the Bender-Gestalt test.

The Halstead-Reitan Battery also includes an intelligence test — usually the Wechsler Adult Intelligence Scale ("WAIS") — and a personality assessment test, which is often the Minnesota Multiphasic Personality Inventory ("MMPI"). The WAIS consists of eleven sub-tests — six of which examine the patient's ability to communicate through language, and five of which examine his or her ability to do tasks or to communicate through figures.^{xi} The Halstead-Reitan Battery further includes an aphasia test, sensory perceptual tests, a strength-of-grip test, a lateral dominance test, and tests to determine emotional status, including the Thematic Apperception Test and the Rorschach Test.^{xii}

The neuropsychological evaluation concludes with the "diagnostic impressions" of the neuropsychologist. If the neuropsychologist has found abnormal behavior patterns, he or she will connect

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the behavioral patterns to a specific area of the brain. If the behavioral abnormality is consistent with brain damage in a specific area of the brain, the neuropsychologist will give his impressions of this connection, such as dysfunctions consistent with damage to the left hemisphere of the brain.^{lxiv}

In order to cross-examine the plaintiff's neuropsychologist effectively at trial, the defense attorney must obtain the clinical interview notes, the notes of the technician who administered the tests, the test scoring sheets, any summary of test results, and the manuals for the tests administered to the plaintiff. The clinical interview notes provide the plaintiff's version of the event that allegedly caused the injury, the plaintiff's perception of resulting problems, and the plaintiff's perception of his or her social, educational, and work history. These notes can be compared with independent records, and any inconsistencies can be used to the defense advantage.^{lxv}

The test summaries and the patient's answer sheets often include comments from the technician who actually administered the tests. These materials furnish a good starting point in deciphering the neuropsychological evaluation; for example, they can be very helpful in evaluating the significance of erroneous answers or inadequate drawings.^{lxvi} The raw neuropsychological test data should also be obtained as a matter of course. The actual test protocols must be examined to verify that they were administered in their original, validated entirety, since

abbreviated tests do not possess the same reliability as the full tests and may not even measure the same behavior.^{lxvii}

The test manuals provide the statistical bases for the tests, the test questions, the test answers or the criteria for determining them, and the criteria or norms used in evaluating the results. They also indicate how the tests should be administered. The manuals thus provide invaluable assistance to defense counsel: (1) they provide him or her with information needed to acquire expertise in the tests; (2) they provide defense counsel with the services of a test expert (the creator of the particular test with whom to confront plaintiff's expert); and (3) they provide defense counsel with the test norms by which to evaluate the test results and the expert's interpretations of those results.^{lxviii}

Once the manuals and test materials have been thoroughly reviewed, the pertinent information should be assembled in a coherent fashion. The attorney will find it quite helpful to prepare charts for each test administered. These charts in turn should list each sub-test under a heading that summarizes the information that is basic to that particular test. The information in the chart should include the actual patient score, the norm for the sub-test, the standard deviation for the norm, a bold designation indicating whether the plaintiff's score was "normal" or not, a reference to the pages in the manual that describe the test, instructions on administering and scoring the test given, and summaries of key words.^{lxix}

These charts serve several functions. Chart preparation compels a thorough review of the materials, and the charts themselves facilitate identification of those test scores that are indicative of brain damage and problem areas that would merit further investigation. They also facilitate an overall evaluation of the plaintiff's neuropsychological assessment. Finally, the charts are helpful in interrogating the expert witness.^{lxx}

VII. CROSS-EXAMINING THE NEUROPSYCHOLOGIST AT TRIAL

A. Qualifications

Any trial examination of the plaintiff's neuropsychologist must begin by asking the neuropsychologist to describe his or her education, training, and experience in neuropsychological evaluations. Unfortunately, any psychologist who chooses to be designated as a "neuropsychologist" can legally do so. Many psychologists, having attended a course or two in neuropsychology, deem themselves competent to administer neuropsychological tests and render an opinion concerning brain damage. Defense counsel must learn what percentage of the "neuropsychologist's" practice is neuropsychological (the real neuropsychologist's practice is, to a large extent, in the area of neuropsychology) and how many years the neuropsychologist's practice has been devoted to neuropsychology. A fully trained neuropsychologist should have a diploma in clinical neuropsychology and should be a member of the Division of Clinical Neuropsychology of the American

Psychological Association. In addition, defense counsel must ascertain whether the neuropsychologist has been board certified by either the American Board of Professional Neuropsychology or the American Board of Clinical Neuropsychology.

Beyond this, defense counsel must examine the neuropsychologist regarding his or her particular field of expertise. For example, many neuropsychologists do not have adequate training or experience to evaluate brain damage in a child. Specialized test batteries are required as is the ability to properly assess tests administered to children.

The nature and extent of vocational loss is also an issue often raised in claims involving alleged neuropsychological damage. However, most of the neuropsychologists who are retained as experts in brain damage cases are clinical neuropsychologists and not vocational neuropsychologists. Clinical neuropsychologists essentially have no training at all in the fundamental areas of vocational expertise, such as the determination of earning capacity. As such, they should not be allowed to give opinions concerning such matters. Should the expert neuropsychologist attempt to express an opinion in areas outside the scope of neuropsychology, the defense must be prepared to determine the basis for such claimed expertise.^{lxvi}

In 1980, the *Diagnostic and Statistical Manual of Mental Disorders*^{lxvii} began recommending that clinicians make a

multiaxial diagnosis when rendering an opinion or diagnosis or when developing a treatment plan for a patient. In essence, the multiaxial diagnosis asks the clinician to make a “systematic evaluation with attention to the various disorders and general medical conditions, psychosocial and environmental problems that can be overlooked if the focus is on one event.”^{lxviii} Without the use of the multiaxial system, clinicians also tend to focus on a narrow band of symptoms, often missing pre-existing or concurrent conditions that may not lead to compensation for the plaintiff. If a clinician is resistant to using the multiaxial system, the *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition, recommends that he or she should “follow the general rule of recording as many co-existing mental disorders, general medical conditions, and other factors as are relevant to the care and treatment of the individual.”^{lxix} This certainly would include recording relevant diagnoses that may provide alternative explanations for a plaintiff’s symptoms. Thus, the plaintiff’s neuropsychologist must be asked if he or she made a diagnosis based on the multiaxial system currently set forth in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition.

B. General State of Scientific Knowledge

Allegations of harm to the most complicated organ in a human body — the brain — offer particular advantages to a defendant. The defense should inform the trier of fact that there are literally billions of cells in the brain and that the

number of possible relationships among them is astronomical. Given the enormous complexity of the brain, the trier of fact must understand that so much is unknown about the brain that the accuracy of any conclusions should be doubted in most cases. An effective cross-examination on the subject may be developed as follows:

Q: Doctor, there are literally billions of cells in the brain, is that not so?

Q: Aren’t the possibilities for interactions between cells greater by some multiplier of these billions?

Q: Isn’t the brain and its functioning an enormously complex subject matter?

Q: Aren’t there a number of statements in the scientific and professional literature indicating that the state of knowledge in neuropsychology is still at a preliminary stage?

Q: Aren’t there a number of statements in the current scientific and professional literature that the systems of classifications are inadequate?

Q: Aren’t there a number of theoretical and philosophical controversies concerning brain function and its assessment?^{lxxv}

This type of questioning is most helpful where there exists a sufficient number of objective facts that contradict the plaintiff’s claim, and where use of such evidence will force the trier of fact to disregard the plaintiff’s expert.

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C. *Lack of a Causal Relationship*

The fact that (1) the plaintiff is suffering from symptoms associated with brain damage, and (2) the plaintiff has sustained an antecedent head injury does not mean that the plaintiff's brain damage symptoms were produced by the alleged event. It is imperative that the defense attorney obtain all of the plaintiff's records, including the following: all pre- and post-exposure medical records (entire records, not only typed reports and summaries); complete hospital charts (which may contain evidence of a history of high fevers in childhood, encephalitis, sports injuries or slip-and-fall accidents); pre- and post-exposure personnel records; school records, including reports of social workers, school counselors, and psychologists (which may show the presence of learning disabilities and intellectual strengths and weaknesses that pre-existed the injury), I.Q. tests, standardized tests and grades. In addition, defense counsel should seek military service records and Veterans Administration records (which may reveal evidence of head wounds or exposure to other chemical agents, i.e., nerve gas or Agent Orange); Department of Motor Vehicle records and insurance records (which may contain evidence of motor vehicle accidents with secondary head trauma); and previous workers' compensation records, to name but a few.

In the case of brain injury to a child, it is also important to obtain the child's environmental, school, employment, IQ, and medical history, as well as records

concerning the child's parents and siblings. A team consisting of a geneticist, a psychiatrist, and a neuropsychologist with a sub-specialty in dealing with children may be able to explain dysfunction and test scores in the brain-damaged range as resulting from congenital and/or environmental factors.

The purpose behind obtaining such records is to determine whether some alternative explanation exists for the plaintiff's brain injury. By inquiring into the plaintiff's background and delving into his or her records, some other factor may emerge as the cause of the plaintiff's injury, thereby breaking the causal chain between the plaintiff's accident and the alleged brain damage.

When reviewing the aforementioned records, defense counsel should be alert to the following evidence:

- Pre-existing trauma to the head;
- Drug abuse (any attempt by the plaintiff to withhold such information by, for example, asserting a Fifth Amendment privilege, requires imposition of sanctions by the court that may include dismissal);^{lxxvi}
- Symptoms produced by diseases (such as Alzheimer's Disease) and medications that are not related to the cause of action;
- Depression or anxiety (it is particularly difficult to distinguish brain damage from symptoms of depression);
- Exposure to toxic substances (exposure to many household products and prescribed medications can produce permanent or transient brain damage);
- Look-alike or pseudo-illnesses such as Ganser Syndrome^{lxxvii} and other fictitious disorders;
- Long-term use and/or abuse of alcohol;
- Poor occupational history;
- Pre-existing history of a learning disability;
- Pre-existing history of Attention Deficit Disorder or Hyperactivity Disorder;
- The presence of diagnostic codes which suggest mental disorders such as depression, or physical disorders such as hypertension, instead of brain damage.^{lxxviii}

Should the defense uncover evidence of any one of these factors, he or she can persuasively argue that events unrelated to the defendant's conduct were substantial factors contributing to the plaintiff's current condition and that "but for" the prior insults to the brain, the injury about which the plaintiff currently complains probably would not have occurred. Defense counsel can and should use evidence of other possible causes of the plaintiff's brain damage to cross-examine the plaintiff's neuropsychological expert. ◀

†	Submitted by the authors on behalf of the FDCC Trial Tactics, Practice & Procedures Section.	xxxiii	Alexander J. Nemeth, <i>Litigating Head Trauma: The "Hidden" Evidence of Disability</i> , 12 AM. J. TRIAL ADVOC. 239, 247 (1988); Richard C. Senelick, <i>Head Injury: A Primer</i> , 59 DEF. COUNS. J. 245, 247-48 (April 1992); Glenn Cahn & Susan Miller, <i>Closed Head Injuries: Understanding the Issues</i> , 24 TRIAL MAG. 33 (April 1988); Thomas Park, M.D., <i>Closed Head Injury: A Serious, Quickly Growing Problem</i> , MICH. LAW. WKLY. (July 27, 1992).
i	J. Ric Gass, <i>Attacking Damages in the Catastrophic Injury Case (Part I)</i> , 45 FOR THE DEFENSE 16, 18 (April 2003).	xxxiv	Nemeth, <i>supra</i> note 33, at 252.
ii	<i>Id.</i>	xxxv	R. A. Zimmerman et al., <i>Head Injury: Early Results of Comparing CT and High-Field MRI</i> , 7 AM. J. NEURORADIOLOGY 757, 759 (Sept./Oct. 1986); E. Marcus Davis, <i>Mild to Moderate Brain Injury: A Silent Epidemic</i> , 26 TRIAL MAG. 109, 111 (Nov. 1990).
iii	<i>Id.</i>	xxxvi	JAMES L. CAVANAUGH, ET AL., <i>PSYCHOLOGICAL DAMAGES: ADVOCACY & DEFENSE</i> , § 1.6 (1988).
iv	<i>Id.</i>	xxxvii	Nemeth, <i>supra</i> note 33, at 252.
v	<i>Id.</i>	xxxviii	Davis, <i>supra</i> note 35, at 111.
vi	J. Ric Gass, <i>Attacking Damages in the Catastrophic Injury Case (Part I)</i> , 45 FOR THE DEFENSE 20, 21 (Mar. 2003).	xxxix	Nemeth, <i>supra</i> note 33, at 252.
vii	Gass, <i>supra</i> note 1, at 18.	xl	Davis, <i>supra</i> note 35, at 111. See also Frederick Kadushin, <i>How to Assess Brain Damage: Neuropsychological Evaluation for Litigation</i> , 26 TRIAL MAG. 64 (Oct. 1990).
viii	Donald W. Carlson & David B. Graeven, <i>The Development of Trial Themes in Catastrophe Losses</i> , THE BRIEF 21-22 (Summer 2002).	xli	Mariano Fernandez-Ulloa, <i>Diagnostic Imaging with SPECT in Traumatic Brain Injury</i> , 3 HIPPOCRATES' LANTERN 4, 5 (1995).
ix	<i>Id.</i> at 21.	xlii	Brickford Y. Brown et al., <i>Does Your PET Bite? The Misapplication of Brain Scans in Toxic Tort Litigation</i> , 39 FOR THE DEFENSE 30 (March 1997).
x	<i>Id.</i>	xliii	<i>Id.</i> at 30-31; Fernandez-Ulloa, <i>supra</i> note 41, at 5.
xi	<i>Id.</i>	xliv	509 U.S. 579 (1993).
xii	<i>Id.</i>	xlvi	See, e.g., <i>Summers v. Mo. Pac. R.R. Sys.</i> , 897 F. Supp. 533 (E.D. Okla. 1995). Other courts have held that QEEG scans are not admissible because they do not meet <i>Daubert</i> standards. See, e.g., <i>Nadell v. Las Vegas Metro. Police Dep't</i> , 268 F.3d 924 (9th Cir. 2001); <i>Tran v. Hillburn</i> , 948 P.2d 52 (Colo. Ct. App. 1997); <i>State v. Zimmerman</i> , 802 P.2d 1024 (Ariz. Ct. App. 1990).
xiii	<i>Id.</i>	xlvi	Brown, <i>supra</i> note 42, at 33.
xiv	<i>Id.</i> at 22.	xlvii	Brown, <i>supra</i> note 42, at 34.
xv	<i>Id.</i>	xlviii	Indeed, this causal connection argument can be made with respect to any of the tests discussed herein. Although any of the tests discussed may show evidence of brain damage, none of the tests can determine the cause of the depicted brain damage.
xvi	<i>Id.</i>	xlix	Brown, <i>supra</i> note 42, at 34.
xvii	<i>Id.</i>		
xviii	<i>Id.</i>		
xix	<i>Id.</i>		
xx	<i>Id.</i>		
xxi	Constance Bernstein, <i>Three Pitfalls to Avoid in Trying Defense Cases</i> , 45 FOR THE DEFENSE 12, 15 (April 2003).		
xxii	<i>Id.</i> at 13, 64.		
xxiii	David T. Patterson, <i>Mild Traumatic Brain Injury</i> , 45 FOR THE DEFENSE 12, 13 (Mar. 2003).		
xxiv	<i>Id.</i>		
xxv	<i>Id.</i>		
xxvi	<i>Id.</i>		
xxvii	<i>Id.</i>		
xxviii	<i>Id.</i>		
xxix	<i>Id.</i>		
xxx	<i>Id.</i>		
xxxi	<i>Id.</i>		
xxxii	<i>Id.</i>		

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- li Fernandez-Ulloa, *supra* note 41, at 8.
- lii Some cases may even make use of neuropsychiatrists, physicians who have completed residency training in either neurology or psychiatry and have received additional training of one or two years in behavioral neurology or neuropsychiatry. Neuropsychiatrists are taught to utilize a more extensive mental status examination in order to determine higher cognitive functions of the brain and the patient's emotional functions. Patterson, *supra* note 23, at 19.
- liii Damien T. Wren & Louise S. Greenfield, *Dealing with Neuropsychological Evidence*, 31 FOR THE DEFENSE 11, 11-12 (July 1989).
- liv *Id.* at 12.
- lv *Id.*
- lvi Richard E. Paschke & Joseph W. Mock, *Neuropsychological Evaluation in Traumatic Head Injury - A New Tool for Attorneys*, 34 MED. TRIAL TECHNIQUE Q. 358, 359 (1988).
- lvii Wren & Greenfield, *supra* note 53, at 12.
- lviii *Id.*
- lix Davis, *supra* note 35, at 112.
- lx *Id.*; see also Wren & Greenfield, *supra* note 53, at 12.
- lxi Davis, *supra* note 35, at 112.
- lxii Wren & Greenfield, *supra* note 53, at 12.
- lxiii *Id.*; see also Davis, *supra* note 35, at 112.
- lxiv Wren & Greenfield, *supra* note 53, at 13.
- lxv *Id.*
- lxvi *Id.*
- lxvii David E. Price, *Identifying the Red Flags in the Traumatic Brain Injury Claim*, Defense Research Institute Damages Seminar, M7, M8 (March 20, 1997).
- lxviii Wren & Greenfield, *supra* note 53, at 13.
- lxix *Id.* at 14.
- lxx *Id.*
- lxxi Paul Lees-Haley, *Confronting Neuropsychological Testing*, 32 FOR THE DEFENSE 27, 30 (May 1990); Wren & Greenfield, *supra* note 53, at 15.
- lxxii DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS (4th Ed. 1980).
- lxxiii *Id.* at 35.
- lxxiv *Id.*
- lxxv 3 JAY ZISKIN & DAVID FAUST, COPING WITH PSYCHIATRIC AND PSYCHOLOGICAL TESTIMONY 210-11 (1988).
- lxxvi *Bramble v. Kleindienst*, 357 F. Supp. 1028 (D. Colo. 1973).
- lxxvii In 1898, a German doctor named Ganser discovered the syndrome that bears his name. He discovered that some victims of brain injury answered questions "past the point," gave approximate answers which were patently absurd, or suffered from fluctuating levels of consciousness and then abruptly recovered. Today, patients exhibiting the same behavior are diagnosed as having Ganser Syndrome. Peter Silvain, *Psychological Injury Claims: A Primer for Defense Counsel*, 28 FOR THE DEFENSE 7, 9 (July 1986).
- lxxviii All diagnostic codes, whether they be from DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS, 3rd Edition—Revised (DSM-III-R); DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS, 4th Edition (DSM-IV); INTERNATIONAL CLASSIFICATION OF DISEASES, 9th Revision, Clinical Modification (ICD.9.CM); or CLASSIFICATION OF MENTAL AND BEHAVIORAL DISORDERS (ICD-10) should be explored.