



**BECOMING A NEUROLAWYER:  
DEVELOPING THE ABILITY TO WIN**

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**Introduction:**

Even an experienced litigator might find preparing and winning his first brain injury case a daunting task. Many lawyers are driven away from this type of case because of the difficulty and knowledge base required. When a lawyer first receives his client's medical records from a hospital and suddenly has two banker's boxes full of records, the task at hand seems overwhelming. Then when he or she begins a cursory perusal of these documents, he realizes that most of these records are completely illegible, not only containing poorly written notes, but riddled by abbreviations that do not even hint at their meaning. Yet the lawyer perseveres and continues to dig through this mountain of paper. Finally, he finds a radiologist's report. The situation seems to be improving as he realizes that he can actually read this typed report. The only problem is that the radiologist's notes indicate something along the lines of: the brain was contused on its inferior anterior surface and over the surface of the temporal lobe was a subdural hematoma; there was a bruising over the inferior aspect of the temporal lobe and anterior part of the temporal lobe, as well as the inferior temporal lobe gyrus. While this sounds unpleasant, the novice neurolawyer would find it hard to discern the actual extent of injury to his client from this account. With so little understanding of the medical and neuropsychological aspects of the case, many lawyers would pass this case on to a more experienced attorney. But wait, with hard work and perseverance, you can handle and win this case yourself.

Another potential brain injury case may present itself differently; a client arrives claiming a soft tissue injury and mentions as an afterthought that he has suffered a loss of memory function and has been tired and depressed since he was involved in a minor automobile accident. The client has no visible injuries and appears to be in good health.

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abbreviations and medical terms that appear throughout medical records. Furthermore, they should have ample knowledge about pharmaceuticals. While many of us know that acetaminophen is generic for Tylenol, most lawyers would not know that warfarin sodium is generic for Coumadin, a blood thinner which sometimes causes brain injury due to cardiovascular accidents or strokes especially following head trauma or an acceleration/deceleration injury. Furthermore, most lawyers would not know that Coumadin levels have to be maintained between certain levels within the blood to be effective, but that too much will cause a bleed out resulting in a sudden hematoma. A nurse or paramedic should be familiar with these aspects of medicine.

The case reviewer might also assist the trial lawyer in separating meritorious from non-meritorious trauma induced brain injury cases caused by construction accidents, vehicle collisions, falls and the like. Until the inexperienced neurolawyer masters the medicine involved in these cases, the case reviewer can actually save the lawyer time and ultimately money while the lawyer is working to learn the subject.

Case reviewers also may be helpful in determining the specialists needed to testify about each specific aspect of a complicated case. They also often may be helpful in recommending particular experts or diagnostics.

Lastly, case reviewers can be helpful to the trial lawyer by educating him as to the relevant aspects of medicine. Often, they may be able to recommend textbooks or other instructive material so that the lawyer can learn enough about the medicine to carefully examine both factual and expert witnesses. The case-reviewer might actually suggest deposition questions for each witness if the medicine is sufficiently complicated. In fact, many neurolawyers bring a trained medical professional to depositions of other medical professionals.

**A Lawyer's Medical Education:**

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In order to be an effective advocate in a brain injury case, the lawyer absolutely must learn the medicine. Examining the other party's medical experts or the treating doctors or neuropsychologists without being adequately prepared is a recipe for disaster. Expert witnesses often make a significant portion of their income giving depositions and testifying at trial. Therefore, they are very familiar with their roles and confident in their opinions, and are not generally intimidated by lawyers. In order to compete with these professionals, the lawyer must train himself in medical jargon and be able to identify and exploit weak portions of testimony. Without the foundation to interact with these professionals, the lawyer will come across looking unprepared and inadequate in front of the jury, exactly what the opposition desires. This is not to say that the lawyer should aggressively display his knowledge of medicine. This tactic may infuriate the witness and may come across as pretentious towards the jury. The best tactic is to "speak softly and carry a big stick." In other words, question the witness kindly using natural language that the jury will understand and only utilize medical jargon when the witness is clearly taking liberties with his testimony. The witness may envision his encounter with you as a battle of egos, so you want to let him or her appear to be the aggressor. With sufficient knowledge of medicine, the lawyer can play nonthreatening and ill-informed to great advantage.

To begin to educate oneself about brain injury, extensive research and familiarity with the basic medical and to be more specific, neuropsychological concepts, is completely necessary. Doctors generally learn new techniques and remain current within their fields of medicine by reading peer reviewed journals. Fortunately, these journals are relatively easy to obtain at any medical library and on the internet at Google.com or

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Medline. For a complicated case, the lawyer should obtain any articles about that particular aspect of medicine up until the time of the injury. Furthermore, any articles written by a witness, expert or otherwise, should be obtained before deposition. A quick perusal of a doctor's CV will usually provide enough information to find these. With these in hand, pinning the doctor down on his opinions becomes a much simpler task.

Other handy references for this type of litigation include a Physician's Desk Reference (PDR), a compendium of information about medicines and their interactions with each other. A number of other useful resources are published concerning this particular issue.<sup>2</sup>

**Brain injury resources on the world wide web include:**

**American Academy of Neurology**

<http://www.aan.com>

Review of neurological conditions and neurology related links.

**American Association of Neuroscience Nurses**

<http://www.aann.org>

Organizational information and links to other neurological sites.

**Brain Injury Association of Georgia**

<http://www.braininjuryga.org>

Provides education, advocacy and support for those affected by brain injury.

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<sup>2</sup>Brain Injury Association of Georgia, "Winning Brain Injury Cases: Legal and Medical Issues." September 2000.

Preiser, Stanley E. et al. "Preparing and Winning Medical Negligence Cases." The Michie Company 1989.

**Brain Injury Association of Georgia Info & Resources**

[http://www.braininjuryga.org/info\\_resources-frame.html](http://www.braininjuryga.org/info_resources-frame.html)

FAQs and a directory of brain injury services and resources in Georgia

**Global Brain Stem '97**

<http://www.anatomy.wisc.edu/bs/text/bs/bs.htm>

University of Wisconsin Medical School's online textbook.

**Hydrocephalus Association**

<http://www.hydroassoc.org/Organizational> information and newsletter articles.

**Institute of Neurotoxicology and Neurological Disorders**

<http://www.innd.org>

Consumer health resources for neurological disorders.

**Journal of Neuroscience Online**

<http://www.neuroscience.org>

Searchable database with full text on abstracts.

**Malignant Brain Tumors and Neuro-oncology Resources**

<http://neurosurgery.mgh.harvard.edu/nonc-hp.htm>

Massachusetts General Hospital Harvard Medical School site with information and links to other neurological resource sites.

**Medical Matrix - Neurology**

<http://www.medmatrix.org/>

Neurological news, articles, abstracts, diseases, patient education and more.

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**The National Institute of Neurological Disorders and Stroke**

<http://www.ninds.nih.gov>

A searchable site with information on selected neurological disorders.

**Neurosciences on the Internet**

<http://www.neuroguide.com/>

Searchable database and links to resources.

**Neuro Trauma Law Nexus**

<http://www.neurolaw.com/>

Resource for understanding the legal system's involvement in brain and spinal cord injury cases.

**Society for Neuroscience**

<http://www.sfn.org/>

Publications of the Neuroscience Society.

**The Virtual Hospital: The Human Brain**

<http://vh.radiology.uiowa.edu/Providers/Textbooks/BrainAnatomy/7BrainAnatomy.html>

Online textbook with images of dissections of the real brain.

**Whole Brain Atlas**

<http://www.med.harvard.edu/AANLIB/home.html>

Searchable site with images of various medical conditions and a neuro-imaging primer.

**Medical Resources on the world wide web include:**

**Johns Hopkins University School of Medicine**

<http://prospero.bme-mri.jhu.edu/>

**MedWeb @ Emory University**

<http://www.medweb.emory.edu/MedWeb>

**MedWebplus**

<http://medwebplus.com>

**Medscape**

<http://www.medscape.com>

**The National Library of Medicine**

<http://www.nlm.nih.gov/nlm/online>

A very basic summary of brain anatomy and traumatic brain injury mechanics is as follows: Brain injuries can result from a traumatic event. These include skull fractures, contusions of the gray matter, lacerations of brain tissue, shearing injuries, diffuse axonal injuries, and intra-cranial/intra-cerebral hemorrhages.

Delayed or secondary brain injuries can arise from post-injury elevated intracranial pressure, epidural, subdural and arachnoid hemorrhages, hypoxic injuries, ischemic injuries, excito-toxicity injuries, and status epilepticus.

Skull fractures may be linear, with or without displacement of bone fragments, or depressed when fragments of bone are forced towards the brain. Diastasis fractures occur when a blow to the head causes plates of bone to separate from each other. Damage to the brain may occur without fracture to the skull, causing permanent damage. Even fatal injuries occur without skull fracture (i.e. shaken baby syndrome).

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The brain itself may be injured in an Acceleration/Deceleration injury even in the absence of a blow to the head, where the brain tissue strikes the interior of the skull, which is not smooth, but has many sharp boney protrusions. The skull decelerates faster than the brain, which is floating within cerebro-spinal fluid. Tears of the brain may occur when the brain strikes boney protrusions within the skull, or when the mechanism of the injury causes twisting, shearing, or deformity of the brain tissue, which has the consistency of oatmeal or jello. Moreover, tearing or shearing injuries may take place at the time of the initial injury or the injury may take as long as 24-48 hours for the process to be completed because of swelling secondarily causing lack of perfusion of blood oxygen and glucose and excito-toxicity. Microscopic damage to brain tissues (neurons, axons, dendrites) may or may not appear on CAT scans or MRIs. Newer imaging devices such as PET and SPECT scanning are better at demonstrating such injuries. However, the gold standard for detecting such injuries remains neuropsychological testing.

Intra-cranial hemorrhages are caused by the result of direct tearing or shearing of brain tissue, or tearing of thin-walled bridging veins within the brain. Damages result from direct tearing of brain tissue, or compression by the expanding mass of blood and chemical damage to surrounding brain tissue (excito-toxicity). Increased pressure within the brain is caused when bleeding occurs within the brain. The brain is surrounded by the rigid structure of the skull, and the swelling compresses the brain tissue inside the closed vessel. Blood, glucose, and oxygen supplied to brain tissues are diminished as intra-cranial pressure, relative to mean arterial blood pressure, increases. As intra-cranial pressure rises, cerebral blood flow decreases. MRI or CT may demonstrate shrinking ventricles or midline shift showing increased intra-cranial pressure. A midline shift of brain matter is an ominous sign.

Hypoxia or anoxia injuries are caused when oxygen is cut off from brain cells, which need oxygen and glucose for survival. Below certain critical levels, permanent brain damage occurs. Such injuries occur with drug overdoses and in complicated deliveries of babies.

Intra-cranial hemorrhages can occur in different fibrous membranes, creating several compartments. The dura mater is the thick, outer-most membrane surrounding the brain. The pia-arachnoid is a thin, inner membrane. Hemorrhages (epidural, subdural or subarachnoid) can occur within the epidural space (the space between the inner surface of the skull and the dura mater), in the subdural space (the space between the dura mater and the pia-arachnoid), or the sub-arachnoid space (the space between the pia-arachnoid and the surface of the brain). When brain cells are injured, damaged neurons release their neuro-transmitters, the chemical messengers by which brain cells communicate and transfer information. Excessive release of excitatory neuro-transmitters, including glutamatespartate, over-stimulate neighboring neurons, causing a cascading chain of events culminating in death of brain cells over 24-72 hours.

Sometimes brain injuries cause seizures such as status epilepticus, a condition in which an individual experiences a single seizure lasting more than 30 minutes, or a series of seizures lasting at least 30 minutes, where the individual does not regain consciousness between seizures. The brain's need for blood flow, oxygen, and glucose can increase five fold. An enormous increase in metabolic needs, which may not be met, may result in an additional brain injury during these seizures.

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**Hospitals & Medical Records:**

Especially when the hospital is a party defendant, but at other times as well, medical providers are reluctant to provide the appropriate records. When lawyers order medical records the hospital risk manager usually becomes involved. It is extremely common for a hospital to provide partial records with no indication that the rest are missing. It can also be expected that most records will be produced out of order. In order to organize medical records and ensure that all records have been provided, the best thing to do is organize these into categories according to the type of document. Again, a medical or nurse consultant may be helpful in this regard.

It is not unheard of for hospitals to change medical records after an adverse event occurs in a hospital and before records are ordered or a lawsuit is filed. Hospitals will also refuse to allow records to be released due to technicalities, for example, the doctor has not signed off on a procedure performed six months prior or a patient is deceased and a family member has not yet been appointed administrator of the estate. As a lawyer, if you feel concerned about the handling of records, you should go down to the hospital and request to see the original records in their entirety. Better yet, examine the original records when you are first hired in the case. Not only will these be easier to read, but you may notice discrepancies between what has been produced and what the hospital has. You may elect not to take the case before you spend on records.

**Mild to Moderate Brain Injury:**

When a lawyer first meets with a client who has suffered an automobile or construction accident, he or she may focus on the more physically obvious injuries and completely miss a brain injury claim. Orthopedic injuries (fractures) and soft-tissue

injuries (torn or bruised ligaments, muscles, and nerves) are much more obvious to the lawyer and to the doctor. Even treating physicians such as neurologists will miss cases of mild to moderate brain injury. Neurologists treating patients with concussion and loss of consciousness rarely order neuropsychological testing and frequently do not order MRI scans. Because brain injuries can be so life changing, it is essential that the lawyer recognize the symptoms of brain injury, refer the client for appropriate testing, and help the client pursue justice.

The signs of brain injury can be divided into three categories: physical, cognitive, and psychosocial. Physical effects of brain injury can include headaches, lack of coordination, muscle spasticity, paralysis, seizures, not to mention verbal, auditory, visual, tactile and olfactory dysfunction. On a cognitive level, there may be memory deficits, concentration problems, slowed thinking, and problems with perception, sequencing, judgment, and communication, including impaired reading and writing skills. Psychosocial symptoms of brain injury may include behavioral and emotional dysfunction, fatigue, loss of empathy, depression, anxiety, sexual dysfunction, lack of motivation, and emotional lability (volatility), including violent mood swings and difficulty relating to others. Generally speaking, if a client or his or her significant other experiences a noticeable change in his perception of or interaction with the world around him or her, he or she may be experiencing more than simply an accident related phobia; he or she may have suffered a brain injury.

While symptoms of brain injury often fall under a diagnosis of "post-concussion syndrome," a person need not lose consciousness in order to sustain a traumatic brain injury. Unfortunately, those patients who never lost consciousness are more likely to have their brain injury go undiagnosed. As lawyers, we must remember that even modern

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medical diagnostic tools will not detect microscopic injuries to the brain. A microscopic brain injury cannot be ruled out merely because a CAT scan, MRI, or EEG study was conducted. These devices are excellent for detection of hematomas, hemorrhages or seizures while they are happening, but will not detect subtle or microscopic tissue damage.

**The Neuropsychologist and Damages:**

Neuropsychological evaluation is the best way to diagnose mild to moderate brain injury. A neuropsychologist relies on a series of tests of various aspects of cognition beginning with a lengthy interview of the patient. A typical test battery such as the Halstead-Reitan Test Battery includes the Wechsler Adult Intelligence Scale Revised (WAIS-R). This test can identify injury to specific parts of the brain by discovering the corresponding deficits on various tests. Furthermore, some of these tests can measure pre-injury IQ level. An alternative is to obtain testing from the client's school records and compare them to the client's post-morbid test scores.

The specific tests within a battery include 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 (AVLT) or the California Verbal Learning Test. Attention is tested with the Wechsler Memory Scale, the Trail Making Test, and the Stroop Test. The Complex Figure Test assesses organizational efficiency, visuo-motor memory, and the retention of motor information over time. Visuo-motor function can be evaluated with the Bender-Gestalt Test. Tests to determine emotional status include the Minnesota Multiphasic Personality Inventory (MMPI), the Thematic Apperception Test, and the Rorschach Test. Diagnostic tools that may aid in the

detection of mild to moderate brain injury include the Brain Electrical Activity Mapping (BEAM) test, a computerized EEG that compares an impaired person's responses to visual and auditory stimuli with those of a normal person. Also, Positron Emission Tomography (PET) scans can detect regions of dysfunction by identifying areas of decreased glucose metabolism. Evoked potential testing will determine the brain's reaction time to stimuli at the wrist and ankle. Finally, SPECT scanning produces pictures that show where blood flows through the brain and can show the location of a seizure.

In order to make these various tests useful in court, some assessment of the client's pre-morbid functional level must be included. Standardized testing such as IQ tests and the Iowa test are conducted even in elementary school and these records are easily attainable and already offer a comparison to other students of that age. For older clients, SAT scores can be useful as well as college, vocational school, and graduate school records as well as records of employment. It is essential that the neuropsychological evaluation include a statement as to the change in cognitive functioning due to the injury in order to establish damages properly.

Altered sleep patterns may also accompany brain injury. Clients may feel like they are constantly exhausted even when spending what had previously been more than sufficient time in bed. Depression associated with brain injury certainly interferes with sleep, but other causes arise as well. The client may not realize it, but he or she may suffer from nocturnal seizure activity. These seizures severely limit the quality of sleep, but will go untreated if not diagnosed. A sleep study in a hospital setting is often required to make the proper diagnoses. Medication can often eliminate this side effect of brain injury.

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Brain-injured people are also entitled to compensation for the subsequent depression that follows a loss of functional ability. A lack of ability to conduct life smoothly often leads to feelings of doubt and remorse as well as low self-esteem. Psychological testing such as an MMPI will usually document these types of symptoms. However, when a person suffers a brain injury, the differences in personality are usually not temporary. Suffering a brain injury means that the brain is altered in such a profound way that the person actually may behave like an entirely different person. Due to these changes, romantic relationships often suffer severely because the injured person behaves differently, thinks differently, exhibits a different sex drive, and has different interests from the pre-injury person. Spouses often report that they feel like they are married to a different person. Marriages often end in divorce because the spouse cannot cope with the altered personality of the injured party. Thus, loss of consortium claims are certainly warranted and should be included with the damages in these cases.

Oftentimes, the greatest portion of damages usually goes to compensate the injured party for the expensive cost of rehabilitation. A neuropsychologist will be able to prescribe therapies that will help the client to regain as much functional ability as possible, although in most cases, even cognitive remediation or retraining will not restore the person to his or her pre-injury level of ability. A neuropsychological evaluation should suggest the proper therapies so that the party can make as complete a recovery of possible. Therapy may last for a number of years. Computer programs may be used for cognitive remediation. The client must receive rehabilitation that includes attention to cognitive deficits, emotional damage, and resulting behavioral problems. The goal of this therapy should be the patient's reintegration into the community. In order to document the costs of future care, a lifecare plan may be created by a qualified lifecare planner. The

creation of this type of plan also will often be helpful to the client and his or her family in planning for future care. This document should break down the future costs of care for the life expectancy of the injured party. In order to translate these figures into a meaningful number for damages, an economist can be retained to translate these values into present cash value taking into account interest rates and inflation.

### **Medical Experts:**

Preparation is the key to handling medical experts. Whether choosing your own experts or planning your examination of an opposing witness, the best strategy is to eliminate as much guesswork as possible.

### **Basics of Expert Examination:**

- I. Master all of your client's medical records, so that any errors of the expert in reviewing them can be pointed out in deposition or trial.
- II. Obtain expert's written report before the deposition.
- III. Obtain any testing data from the expert. (Halstead Reitan raw test data, etc.)
- IV. Review the expert's report in conjunction with the reports of any other experts or treating medical personnel. (Compare similarities and differences.)
- V. If possible, find prior testimonies, depositions, articles, and seminar presentations before the deposition, i.e., [www.trialsmith.com](http://www.trialsmith.com). In the expert's deposition, ask questions sufficient to find these source materials for cross-examination at trial or to discover any weaknesses of your expert.
- VI. Prior to the deposition, review the expert's entire file, including correspondence and billing. Ask the expert if any materials have been removed from the file.

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It is important to recognize the lawyer-witness dynamic when handling defense experts. Juries will recognize the adversarial nature of an examination between a lawyer and an opposing expert and will tend to side with the expert if the lawyer is too harsh. When a lawyer attacks an expert, the jury sympathizes with the expert who then becomes the victim; the jury believes that the lawyer is engaged in verbal trickery. Thus, we must treat the witness with compassion or risk a backlash from the jury. In order to avoid this type of confrontation, the lawyer needs to account for his fears. The fear that the expert will destroy your client's meritorious case is the biggest impediment to an effective cross-examination. Overly aggressive cross-examinations conducted out of fear often make the lawyer look like a bully and often are not very effective because the expert has dealt with this type of attack before and simply remains calm and continues. The goal is to make the expert display negativity: anger, frustration, arrogance, hostility, bias, greed, exaggeration or evasiveness. On the other hand, the lawyer wants to maintain a humble and calm attitude. To this end, the lawyer should use real words and language and not become so bound up in having mastered medical jargon that he or she comes across as stilted or fake. Furthermore, the lawyer needs to actually interact with the expert in order to make any headway in either establishing or discrediting a witness. Reading questions out of a notebook is neither engaging nor effective. In order to pick up on the subtle aspects of communication, the lawyer needs to watch the expert as he testifies and not be afraid to begin tangential questioning when he senses an important admission could be at hand. The inexperienced lawyer misses so much important information by keeping his or her head buried in notes.

**Demonstrative Aids:**

The use of proper demonstrative evidence is paramount to litigating brain injury cases properly. Because the anatomical and medical language is so complicated that the average juror cannot possibly recall all of a doctor's explanation, visual aids are extremely important. A good model of the skull that opens up to reveal a sectioned model of the brain is a good start. A chart depicting a map of the brain and what areas of the brain control various bodily functions and thought processes is helpful. When using such devices, the lawyer simply needs to ask the witness if the model "is a true and accurate representation" of the anatomy being discussed. When videotaping depositions, be sure that the videographer is able to capture all of the image without any problems. Color posters are also quite helpful, especially when looking at injuries to specific areas of the brain that would not appear very large on a model. These can be ordered to depict any part of the human anatomy as well as injuries to specific anatomy. As a lawyer continues to try many brain injury cases, he will probably accumulate a ready supply of visual aids for deposition and trial.

A good source for medical demonstrative evidence is Medical-Legal Art:  
[www.medicallegalart.com](http://www.medicallegalart.com).

**Conclusion:**

Although brain injury cases present some of the most challenging work a trial attorney can handle, with the right tools and preparation, they can also become the most rewarding cases to complete. Brain injury clients need an experienced attorney not only to represent them in order to obtain adequate compensation, but often also to ensure that they receive proper care and rehabilitation. A rewarding adjunct to this type of case is

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providing advice to someone who may desperately need assistance, but be unaware of the extent of his or her injuries. Guiding the client towards proper evaluation and treatment serves the dual purpose of determining the existence or extent of injuries and starting the progression towards recovery. The stakes are very high in brain injury cases. Many of the best trial lawyers in the state of Georgia practice in this field. Experts are very expensive. Medical records are complicated and exhausting to master. However, the reward for helping someone who has suffered such a debilitating injury makes this type of practice completely worthwhile.

1 Q. And that was a Ph.D. in clinical  
2 psychology, correct?

3 A. Correct.

4 Q. And then it says underneath the Ph.D.,  
5 August 1981. What does that refer to?

6 A. That's actually when the degree was  
7 conferred.

8 Q. I see. So did you spend a year doing a  
9 fellowship or something of that type?

10 A. I actually did an internship from '80  
11 to '81.

12 Q. Can you explain the internship to me?

13 A. The internship was at the University of  
14 Virginia Medical School, and it involved training in  
15 neuropsychology, general clinical psychology,  
16 medical psychology in a medical center environment,  
17 and that was in the department of psychiatry.

18 Q. And when you do that, explain to me what  
19 you do in the neuropsychology environment when you  
20 are taking an internship of that nature.

21 A. Well, you learn how to administer tests,  
22 to score them, to interview patients, to write  
23 reports, to perform as a consultant to other medical  
24 specialties, to engage in treatment of  
25 neuropsychological problems, clinical psychological

1 problems; do diagnosis, treatment, treatment  
2 planning, things like that.

3 We also learn research and teaching and  
4 other things too, but that was the clinical piece.

5 Q. And is that different from the  
6 postdoctoral training you had at the University of  
7 Virginia from '81 to '82?

8 A. It's different in the sense that it's  
9 broader training. The fellowship is very focused on  
10 clinical neuropsychology exclusively and involves a  
11 more intense training, supervision, things like  
12 that.

13 The skill application is basically very  
14 similar. It's just a full-time focus on clinical  
15 neuropsychology.

16 Q. And then on the second page it lists  
17 several of your clinical appointments, and currently  
18 you are at the Shepherd Center; is that right?

19 A. Correct.

20 Q. And describe your duties for me, if you  
21 would, at the Shepherd Center.

22 A. My duties here include administering the  
23 neuropsychology division which has five Ph.D.  
24 neuropsychology folks and several master's level  
25 persons. That's everything from management to

1 report there should be an area that's filled out  
2 here with a score and then some norming data.

3 Q. Let's start at the upper right-hand side  
4 under problem solving. What does the checkmark  
5 beside SHRT mean?

6 A. That means a short form of the category  
7 test.

8 Q. Then a score of 124?

9 A. Correct.

10 Q. And T is circled on the T/Z?

11 A. That means a T score.

12 Q. And the T score is statistical scoring?

13 A. That essentially is a score that tells  
14 you where his score falls in relation to a normal  
15 distribution. So a T score of 22 in this case would  
16 be approximately three standard deviations below his  
17 norm which means he's down around the first  
18 percentile on that test.

19 Q. And which test was this?

20 A. This is the category test.

21 Q. And what does the category test do?

22 A. That measures problem solving, hypothesis  
23 kinds of hypothetical reasoning and the ability to  
24 really over time generate solutions to problems in  
25 an efficient way.

1 Q. And you said that the 22 was three  
2 standard deviations below his norm?

3 A. Yes, approximately; 20 would be three  
4 standard deviations. It's close to three.

5 Q. So his normal would be?

6 A. 50.

7 Q. A 50?

8 A. And a standard deviation is 10. So 40  
9 would be one below; 30 would be two below, and 20  
10 would be three.

11 Q. Then you have Wisconsin and I guess l-n-g  
12 means long?

13 A. Yes.

14 Q. And that is checked?

15 A. Yes.

16 Q. And it has number categories with a  
17 number of six. What does that mean?

18 A. That he got six out of six categories.

19 Q. Is that good?

20 A. That's good.

21 Q. And then it's got number correct; it says  
22 66 under score. What does that mean?

23 A. Number correct.

24 Q. He got 66 of them correct?

25 A. Right. And that's good as well.

1           A.     They are other tests that I gave in  
2 addition to this, to the WAIS, and that's digit  
3 span. A 10 on these is average. 7 -- he had a 6.  
4 This is letter number sequencing. He had a 7 on  
5 digit symbol, and this is symbol search, and he had  
6 a 10.

7           Q.     What does a symbol search test entail?

8           A.     That's basically where you look through a  
9 bunch of stimuli, and you have to identify certain  
10 stimuli that match another. It's basically a  
11 cancellation test. Some of these tests are easier  
12 to do by demonstration than to describe.

13                     For example, here, this is symbol  
14 search. These are the sample items, and you  
15 basically have to see if one of these items is over  
16 here, and you can see that it is. So the answer is  
17 a yes. Over here you also see an item, and the  
18 answer is a yes.

19                     The idea is to very rapidly scan these  
20 and see if you can identify this item. So it  
21 essentially measures attention and concentration but  
22 also a lot of other things because you have to be  
23 able to see -- you have to be able to recognize a  
24 shape, but it's a pretty sensitive test to attention  
25 and concentration given that everything else is

1 intact, like your vision, your perception; you have  
2 motor function. So that's really what -- that's the  
3 symbol search test.

4 Q. The score of 78 on the verbal IQ, where  
5 does that fall?

6 A. That's in the borderline range. It's  
7 impaired. An average score on the test is a  
8 hundred. So he's at least more than one standard  
9 deviation below the mean and low. Average goes from  
10 90 to 110. Low average is between 80 and 90, and  
11 he's below that. So that's an impaired score.

12 Q. And what does that tell you?

13 A. It tells you on those tests he took, the  
14 verbal tests, that he has problems, that he doesn't  
15 have good verbal skills relative to the population  
16 of people that take the test; he's below average.

17 Q. Is that normalized to people his age?

18 A. Yes.

19 Q. How is that done?

20 A. In terms of standardization, the scores  
21 that are derived are done when they standardize the  
22 test. So it's computed in it. I don't do any of  
23 those calculations. It's inherent in the test when  
24 you score.

25 Q. So would the average of 90 to 110, would

1 we've got WRAT-III?

2 A. That's the wide range achievement test -  
3 III.

4 Q. Then a series of numbers, a raw number.  
5 Beside reading it says 34. What does that mean?

6 A. That's just a raw score he got on the  
7 test. This is a standard score. This is where he  
8 falls in terms of the, again, on the distribution on  
9 this.

10 So a hundred would be an average standard  
11 score again or 90 to 110. He's an 86. So his  
12 reading is somewhat below average, his reading  
13 recognition. His spelling is a little more impaired  
14 than that. It's a 78, again, thinking of a hundred  
15 here, and arithmetic reasoning is an 84. So  
16 basically his weakest area on this achievement test,  
17 reading, writing and arithmetic, is spelling.

18 Q. And it's got a percent i-l-e; what is  
19 that?

20 A. That's a percentile where he fell in the  
21 distribution. Here it was the 18th percentile, here  
22 the 7th and here the 14th, and this is his grade  
23 equivalent, what would be an equivalent grade for  
24 someone with his level of reading.

25 Q. You mean score grade?

1           A.       Correct.  So sixth grade for reading;  
2 fifth grade for spelling, and fifth grade for  
3 arithmetic.

4           Q.       And on the percent level is that also for  
5 his age group?

6           A.       Yes.

7           Q.       So he did better than 18 percent of those  
8 that are 55 years old?

9           A.       That's correct.  When you think about  
10 percentiles and all these things, you have to  
11 look -- basically, these scores that we're talking  
12 about, T scores and Z scores and different scores,  
13 what you really want to look at as an interpretative  
14 guide is if you look at percentile equivalent, you  
15 can see that a T score of 40 is the same as the 16th  
16 percentile.

17                    So we were talking about T scores  
18 before.  What we are talking about now is  
19 percentile.  So he's approximately on this test at  
20 the 18th percentile.  So that would be in the low  
21 average range which is how I described it.

22                    On this test he's in the seventh  
23 percentile.  The seventh percentile is somewhere  
24 down in here, which would be a T score of somewhere  
25 around probably 35, which is more impaired.  And

1 down here we're looking at a percentile of 14 which  
2 is in the low average range again, basically.

3 So this is a normal distribution, and the  
4 scores are different sometimes, but they equate in  
5 terms of what they mean.

6 Q. And you're showing me a chart out of what  
7 book?

8 A. This is Spreen and Strauss, kind of the  
9 Bible when it comes to neuropsychological  
10 assessment.

11 Q. A Compendium of Neuropsychological Tests  
12 by S-p-r-e-e-n and S-t-r-a-u-s-s?

13 A. Right.

14 Q. And if we turn the page, we have a motor  
15 test, and it looks like finger tap, grip strength  
16 and grooved pegboard. Am I reading that right?

17 A. That's correct.

18 Q. What do those scores mean?

19 A. How fast he can tap with his fingers.

20 The test is from the Halstead-Reitan  
21 neuropsychological test battery and has norms  
22 associated with it. It's basically an index finger,  
23 and you tap as fast as you can.

24 This grooved pegboard is a test where you  
25 have to insert pegs that are keyed like a key you

1 would stick in a door, and they are turned at  
2 different angles, and you have to insert them.  
3 Again, a motor test.

4 Q. And let's talk about the top line beside  
5 finger tap.

6 A. He's impaired all over the place. All of  
7 these scores are down. This one is approximately  
8 two standard deviations below. This one is three.  
9 This one is two, and this one is two and a half.

10 So he's impaired on fine motor tasks  
11 where he has to use fine motor skills, and he has to  
12 be fast; he has trouble with that. He's impaired.

13 Q. What would that generally tell you about  
14 someone's injuries or problems?

15 A. It could tell you a host of things. It  
16 could tell you that he has problems in the area of  
17 his brain that affects motor function which could be  
18 the primary motor area or secondary motor area. It  
19 could tell you that he is sedated with medication.  
20 It could tell you that the person was unmotivated.

21 I mean it could be a lot of issues, but  
22 basically what you look for is you look for a  
23 right-hand advantage in someone who is right-handed,  
24 and you look for their finger tapping to be about 10  
25 percent stronger on their right hand. Although that

1 varies. And you look for someone to tap at his age  
2 range probably around 50 to 55.

3 So in this gentleman's case he's very  
4 slow bilaterally. He is low motorically on both  
5 sides of his body, and his dexterity is impaired on  
6 both sides of his body. That could come from a lot  
7 of different things.

8 Q. Would that give you any indication of one  
9 side injury versus another side?

10 A. It usually does, and in this case what  
11 you're looking at here is he is essentially a little  
12 less impaired on his right side than he is on his  
13 left. His left side is somewhat more impaired.

14 Q. Which side of the brain would control  
15 that?

16 A. His right side would control the  
17 left-hand side.

18 Q. And the left side of his brain would  
19 control his right-hand side?

20 A. To a large extent. Not exclusively.

21 Q. I understand. And you said he was less  
22 impaired on the right side than on the left side,  
23 correct?

24 A. He's impaired on both sides, but his left  
25 side is more impaired than his right side.

1 Q. And if we come down under visual  
2 perceptual, it's BVFDT that's marked. What does  
3 that stand for?

4 A. That's the Benton Visual Form  
5 Discrimination Test.

6 Q. And WNL, within normal limits?

7 A. Correct.

8 Q. And he scored at 27?

9 A. Correct.

10 Q. And what exactly does that test do?

11 A. It tests basic visual perceptual skills.  
12 You have a picture that you have to decide what of  
13 one of four possible pictures it looks exactly  
14 alike, and all these pictures differ in just a  
15 little bit of the detail. And so you have to match  
16 the two pictures.

17 Q. And then the next we have going down the  
18 page under language is the Boston Naming Test?

19 A. Correct.

20 Q. And explain that to me if you would.

21 A. The Boston Naming Test is basically a  
22 confrontation naming test that requires you to look  
23 at a picture and identify it.

24 Q. And how did his scores do on that?

25 A. He was severely impaired on that test.

1 Q. And does that tell you one-sided brain  
2 injury versus another sided brain injury?

3 A. It does tell you that in most cases. The  
4 only case where you would -- typically that  
5 indicates a left-sided brain injury, but there are  
6 people who are right-hemisphere dominant for  
7 language or bi-hemispherically dominant for  
8 language.

9 And so in those cases -- that's a very  
10 small percentage of people -- that test might tell  
11 you something else. But in this case what it says  
12 is that he has severe naming problems.

13 Q. And you said that's typically controlled  
14 by the left side of the brain?

15 A. Correct.

16 Q. And what's the COWA?

17 A. That's a verbal fluence test where you  
18 have to -- actually you're given a letter like a P,  
19 and you say tell me all the words that you can think  
20 of that begin with P that are not proper names or  
21 places, and you get a time. And then you generate  
22 those words and end up getting a total score that's  
23 corrected for age and education and principally  
24 education.

25 And then you get a score, and he was

1 moderately to severely impaired on that as well.

2 Q. Would that also be controlled by the left  
3 side of the brain?

4 A. Typically. But performance of that test  
5 can be affected by other things that are not  
6 necessarily only related to the left side of the  
7 brain.

8 Q. What other things?

9 A. Well, there's a whole arousal mechanism  
10 in the brain that is diffusely organized, attention  
11 and arousal. And the frontal lobes of the brain,  
12 actually people with frontal lesions that maybe  
13 don't involve the language part of the brain can do  
14 poorly on this test. So it's not just a measure of  
15 left hemisphere language function. It's associated  
16 with other kinds of problems.

17 Q. And then we come down to memory, and it's  
18 got logical memory 1 with a raw score of 20 and an  
19 SS of 4. What does that mean?

20 A. That's, again, a raw score that's changed  
21 to a standard score which 10 would be average here.  
22 The logical memory subtest is a narrative learning  
23 and recall test.

24 I read you a story. You listen to it.  
25 You give it back to me, and then I ask you 30

1 minutes later again, and you give it back to me  
2 again. It's how much can you learn, kind of  
3 incidental learning that you might learn in a  
4 conversation like you were having with a client or I  
5 might have with somebody at work, and then I go back  
6 to my office, and what would be the amount of  
7 information I would retain from that.

8 Q. So the logical memory 2 is the  
9 30-minute-later question?

10 A. That's, yes, the delay.

11 Q. And he did better on the 30-minute delay  
12 than he did on the initial question?

13 A. That's correct. Both of these are  
14 impaired, but he did better on the delay.

15 Q. And would 10 be an average?

16 A. 10 would be, yes.

17 Q. What is the CVLT RAVLT?

18 A. Actually what he got was the RAVLT, which  
19 is the Rey Auditory Verbal Learning Test. This is a  
20 list learning test where you are basically given a  
21 list of words, in this case 15, and you're given the  
22 words by the examiner.

23 You are then asked to repeat those words  
24 back. Then, after you repeat those words back, you  
25 are given the list again. So it's a list learning

1 trial where you get repeated exposure to the  
2 information which is different than here where you  
3 only get it once.

4 So what you do is you look at basically  
5 how many words the person is able to retain over  
6 time, and then you look at again at a delay of 30  
7 minutes. There's also one trial in here where you  
8 get an unrelated list to see how you are going to do  
9 on that, so as kind of a distractor.

10 Q. And how did he do on this test?

11 A. He had problems on this test, pretty  
12 significant problems. As he starts out he's  
13 probably about one-and-a-half standard deviations  
14 below the mean which, again, would be kind of low  
15 average to mildly impaired.

16 As he gets into the test he has a little  
17 bit more trouble. Where he has the most problem is  
18 at the delayed recall which is free recall which you  
19 ask him at 30 minutes.

20 Now, some people do a 20-minute delay;  
21 some do a 30-minute delay. There are different  
22 delays and different norms on this test based on  
23 that and different norms based on the  
24 administration. So there's a whole book, but  
25 basically if you do a long-term delay, 30 minutes,

1 which, you know, that's this LD here, he gets none  
2 at 30 minutes.

3 But he does recognize, when you give him  
4 an opportunity to hear the words, he does recognize  
5 nine of them. So they are in his memory. He's just  
6 not able to recall them.

7 Q. And what does that tell you about his  
8 condition?

9 A. Well, what it says is that basically in  
10 the environment he is going to have trouble where he  
11 has to spontaneously retrieve information. If  
12 there's someone around to prompt him or some things  
13 in the environment that can cue him, he is going to  
14 be able to use his memory. But without that cuing  
15 and without that prompting, it's going to be very  
16 difficult for him to recall information.

17 Another factor affecting performance on  
18 these tests of course is he has language problems.  
19 He has naming problems. He has fluency problems.  
20 So his performance on any kind of verbal learning  
21 and memory test is going to be affected by that as  
22 well.

23 Q. When you say he has language problems,  
24 are you saying after the injury?

25 A. After the injury.

1 Q. So it's not that he doesn't speak English  
2 as a result of being from another country or  
3 something.

4 A. No. He speaks English fine. After this  
5 injury it affected his left hemisphere. And very  
6 specifically in the record it's clear he had an  
7 aphasia after the injury, and even though that's  
8 much less prominent at this point, it still affects  
9 him in a variety of ways.

10 And I don't want you to think this is  
11 only about memory. It's about language and memory  
12 here.

13 Q. The memory issue here, is that  
14 predominantly left or right side?

15 A. It's difficult to say. There are people  
16 who believe that they can lateralize memory to one  
17 hemisphere or the other so that in the right  
18 hemisphere you get visual-spatial memory, and in the  
19 left you get verbal memory.

20 It's clear from studies that's not always  
21 the case. In some people that's the case; in other  
22 people it's not, that you can have a left hemisphere  
23 lesion, and it will affect memory, both kinds of  
24 memory, visual-spatial and verbal. If you look at  
25 his visual-spatial --

1 Q. We're looking under the Rey Complex  
2 Figure Test?

3 A. Yes. This is where you have to draw a  
4 figure, and then you have to recall it, and then you  
5 have to recall it at 30 minutes again, and then you  
6 do a recognition. What you see is that basically  
7 his visual-spatial memory is not a whole lot better  
8 than his verbal memory.

9 So in this case he's got verbal and  
10 visual-spatial memory problems. He's below the  
11 first percentile on his visual-spatial memory. So  
12 he has memory problems, learning and memory problems  
13 in terms of processing a lot of different types of  
14 information.

15 Q. And then if we come under symptom  
16 validity to Portland Digit R-e-c.

17 A. That's correct.

18 Q. What is that?

19 A. That's basically a test that I give -- I  
20 shouldn't say I. A lot of people give it. It's  
21 basically a test that you give to look and see if  
22 someone is exerting the kind of effort that you  
23 would like to see on a neurological assessment.  
24 It's a test that's very easy to do, although, it  
25 doesn't always look easy to do.

1           That's the way you get an index is  
2 someone really complying with the test, are they  
3 exerting some effort. It gives you some confidence  
4 that someone gave a best shot, that we got his best  
5 effort during testing, along with the visual.

6           Q.     He got an E of 32 and an H of 38?

7           A.     It's divided into easy and hard, and  
8 basically he did very well on it which suggests that  
9 he was exerting effort. He was trying hard. He was  
10 working hard, and that's really the finding there.  
11 I mean this is so easily done that there's no  
12 real -- there's not norms per se that people --  
13 everybody should be able to do this test.

14           I mean doesn't matter what your age is  
15 necessarily. If you don't have any neurologic  
16 disease, you should be able to do this test. It's  
17 set up very easy. It's not complicated. It's not  
18 like the other tests that are normed.

19           Q.     So there's not like a T score?

20           A.     No.

21           Q.     And then on the last page of the data  
22 sheet it's got the MMPI-II scores. Explain those to  
23 me, if you would.

24           A.     Those are basically the Minnesota  
25 Multiphasic Personality Inventory scores. These are

1 actually raw scores which are not something that you  
2 can really interpret. What you do is from those raw  
3 scores is you generate a profile.

4 Q. And you're showing me a graph now that's  
5 got MMPI-II at the top of it.

6 A. Correct. And you generate a profile on  
7 the MMPI which basically speaks to a number of  
8 issues. Principally these are called the validity  
9 scales which give you a sense of how the person  
10 responded to the task, and then you have clinical  
11 scales that indicate certain levels of emotional,  
12 psychological, behavioral symptomatology. And it's  
13 divided into different scales. And there are names  
14 attached to all these scales.

15 Q. And the validity scale, what does that  
16 show you on this graph?

17 A. Well, that can show you a bunch of  
18 different things. Can tell you people are trying to  
19 present themselves in an overly positive light,  
20 possibly being deceptive. Can show you people are  
21 very anxious about how they are responding. It can  
22 show you that people are very distressed.

23 In this case he's very distressed. He's  
24 reporting a lot of acute symptoms, psychological,  
25 psychiatric symptoms. He looks as if he's being

1 essentially quite open and that he's not  
2 particularly anxious in response.

3 So what you would think is this is a  
4 questionably valid profile because he said  
5 everything is wrong with him, but he did it in an  
6 open and honest way. So he's in a lot of subjective  
7 distress. That would be the interpretation here.

8 Q. So by saying everything is wrong with  
9 him, that puts some question on the validity of the  
10 test?

11 A. It does. You have to interpret this  
12 somewhat cautiously.

13 Q. Then what does the rest of the graph  
14 mean?

15 A. Those are elevations on clinical scales.  
16 He's got elevations on one, hypochondriasis; three,  
17 hysteria. Basically elevations on most scales but  
18 the ones that are the most elevated are 8, 7, 3 and  
19 1.

20 This is a profile you commonly see in  
21 people with histories of neurologic disorder or  
22 disease where they are very physically preoccupied.  
23 They have a tendency to be somewhat anxious. They  
24 get easily confused, and they report a lot of  
25 changes in their thinking and a lot of changes in

1 this.

2 Q. And his is elevated above the norm?

3 A. His is elevated, yes.

4 Q. And then column 2?

5 A. That's depression which when you think in  
6 terms of depression, you think of sleep and appetite  
7 problems, energy problems. You think of depressed  
8 mood. You think of hopelessness, helplessness,  
9 those kinds of things.

10 Q. His was 27?

11 A. No. These are T scores now in the  
12 columns here. So that's probably about a 68 T  
13 score.

14 Q. And it's just a little elevated?

15 A. A little elevated over the clinical  
16 range, yes.

17 Q. And then the third column is?

18 A. That's hysteria, and that -- basically  
19 you see that in persons who have kind of a view of  
20 things as having a very dramatic impact on them.  
21 Persons who respond similarly often experience  
22 symptoms that come and go. They are not always  
23 constant, and these people tend to be in a lot of  
24 physical distress.

25 This little, in isolation, this is called

1 a conversion V here which you see sometimes in  
2 people with lots of pain. So these people also  
3 experience a lot of pain. These profiles are not  
4 necessarily, if you break this down and chop it up  
5 into different pieces, not necessarily that  
6 meaningful.

7 The other thing is you can get persons  
8 with different disorders that have similar  
9 profiles.

10 Q. After the hysteria in 3, we go to column  
11 4. What is that?

12 A. That's psychopathic deviance which is  
13 basically antisocial types of behavior. Do we need  
14 to go into that?

15 Q. It appears his is very low.

16 A. It's low.

17 Q. So that's a good thing?

18 A. That's good for all of us. You don't  
19 want to have a high 4. Some professional people do  
20 have high 4s, and they are very adaptive.

21 Q. Then after column 4 and column 5?

22 A. Five is kind of a masculinity,  
23 femininity, kind of how you identify yourself in  
24 terms of masculinity and femininity issues and  
25 gender issues, and he doesn't really have an issue

1 there, an elevation that he's reporting.

2 Six is a paranoia scale which is somewhat  
3 elevated.

4 Q. What does that tell you?

5 A. That basically tells you that people have  
6 a general mistrust, a suspiciousness, a concern  
7 about the motivations of other people. This is --  
8 this can be affected by a number of things. It's  
9 not uncommon for people in litigation to have an  
10 elevated 6.

11 This is 8. This is a schizophrenia  
12 scale. This basically speaks to disturbance in  
13 thinking, problems in reality testing, changes in  
14 your thought process and your capacity to deal with  
15 the world in terms of the thinking. It could also  
16 relate to experiencing different types of things  
17 such as hallucinations and things like that.

18 Q. And his is fairly elevated?

19 A. His is elevated up, up there, but this  
20 scale and the F scale are correlated. So you will  
21 expect an elevation on this when you get this  
22 elevated, and this is something that needs to be  
23 interpreted cautiously here because of this elevated  
24 F.

25 Basically how I interpret this, he's

1 were out at Pathways, and I was down here, and I  
2 wanted to have an assessment sensory exam done. And  
3 he agreed to do it and did it, and he basically did  
4 not have problems in the sensory exam.

5 Q. That's what we talked about earlier?

6 A. We did not talk about that, but he did  
7 not have any problems with it.

8 Q. He didn't have any problems with the  
9 sensory exam?

10 A. No. No significant problems.

11 Q. It says under auditory "no" --

12 A. No unilateral or bilateral.

13 Q. And under vision, can you read that one?

14 A. It says no unilateral, one right  
15 suppression on bilateral stimulation. So he had one  
16 suppression which can be due to a lot of things. It  
17 could be due to inattention. I just don't see him  
18 as having any significant sensory problems that are  
19 going to be an issue.

20 Q. Then a document entitled  
21 sensory-perceptual examination. Does that go with  
22 this we just looked at?

23 A. Yes. He just filled this out basically  
24 and had some notes as well.

25 Q. Next is the Portland Digit Recognition