DEBUNKING THE TOP 10 MYTHS OF TRAUMATIC BRAIN INJURY: EFFECTIVE CROSS EXAMINATION OF THE DEFENSE NEUROPSYCHOLOGIST

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Convincing a jury your client experienced a traumatic brain injury can be very challenging. You first must overcome an unrealistic perception that even extreme trauma results in little long-term damage. Movies, wrestling and sports in society all perpetuate myths of invincibility. Athletes, for example, often further perpetuate these myths playing through concussions and fans rarely see any off-the-field symptoms. Although proving the reality of traumatic brain injury is often difficult, proving these injuries are generally easier than proving other nonvisible injuries, such as soft tissue neck and back injuries. Unlike experts in other areas, the neuropsychological experts in traumatic brain injury universally agree on certain fundamental principles and will generally readily admit very helpful points in cross examination. Minnesota's statutes are also beneficial in helping you prove your client's injuries.

Effective cross examination of the defense neuropsychologist can be accomplished by directly debunking the myths associated with traumatic brain injury. This article provides you with ammunition for effective cross examination of the neuropsychologist followed by a list of specific questions which can be asked of the neuropsychologist to debunk each myth.[1]

MYTH #1 - Striking of the Head is Required for Traumatic Brain Injury

The reality is a rapid or violent movement if the head is enough to cause traumatic brain injury. Mild closed head injury can occur after a severe neck trauma, even without the head actually striking any surface.[1]

Rapid deceleration of the head commonly causes non-contact brain injuries. Deceleration injuries occur when the head itself is moving rapidly and rapidly decelerates, often from striking an object. The deceleration then thrusts the brain forward in the cranium.[2] A common example of a non-contact deceleration injury is a whiplash injury where the brain rapidly decelerates, but

"without actually striking another object."[3] The movement of the brain within the skull puts strains on nerve fibers and blood vessels. The fibers and vessels can stretch to point of shearing, which causes microscopic lesions.[4] Rotational acceleration is also an extremely important factor to consider.

To prove that one has suffered a brain injury as a result of a whiplash incident, Minnesota practitioners should utilize the statutory definition. In contrast to many other state statutes, the Minnesota statutes specifically and liberally define the term "traumatic brain injury". Minnesota Statute §144.661, subd. 2, defines "traumatic brain injury" as follows:

Traumatic brain injury: means a sudden insult or damage to the brain or its coverings caused by an external physical force which may produce a diminished or altered state of consciousness and which results in the following disabilities:

1. impairment of cognitive or mental abilities;
2. impairment of physical functioning; or
3. disturbance of behavioral or emotional functioning.

These disabilities may be temporary or permanent and may result in partial or total loss of function. "Traumatic brain injury" does not include injuries of a degenerative or congenital nature.

This definition only requires that an "external physical force" be applied to the brain or its coverings. Nowhere in the statute is there a requirement for a striking of the head. Any neurologist or neuropsychologist will be required to admit the possibility of traumatic brain injury without an actual striking of the head. Attorneys should request this statute be given with the actual jury instructions. Attorneys should also establish through their client's treating doctors that this is a valid definition of traumatic brain injury in the medical community. If it is good enough for the legislature in Minnesota, it should be good enough for the judge and the doctors.[5]

For purposes of this discussion, it is also very important to understand that women have been found to experience 1.8 to 2.5 times more acceleration with the same force applied to the head.[6] This is obviously a crucial fact to use in cross examining the defense neuropsychologist in a case involving a woman.

Sample Questions for the Neuropsychologist:
Q: Doctor, would you agree that a person can suffer a traumatic brain injury without actually striking his or her head?
Q: In fact, the scientific literature on this subject supports the fact a striking of the head is not required to sustain a traumatic brain injury, correct?
Q: Doctor, you were aware that Minnesota Statute §144.661, subd. 2, defines traumatic brain injury? You also of course know that the statute does not require a person to strike his or her head to sustain a traumatic brain injury?
Q: In fact, neuropsychologists make diagnoses all the time about brain injuries where there is no direct blow to the head, don't they?
Q: And you would agree that the skull and brain do not move in perfect synchronization when

there is an acceleration/deceleration of the head?
Q: When there is this acceleration/deceleration event, there can be a collision between the frontal lobes of the brain and the interior of the skull?
Q: And, in fact, the brain can bounce around inside the skull with a sudden deceleration?
Q: That can lead to a brain injury in the frontal lobe of the brain?
Q: Doctor, during your career, you have made diagnoses of persons with brain injury who reported that they did not strike their head during the traumatic event, correct?

MYTH #2 - Loss of Consciousness is Required to Sustain TBI.
The reality is loss of consciousness is NOT required to sustain a traumatic brain injury. There is really no room for debate on this issue. One study found that 35 percent of the people studied in the current scientific literature suffered traumatic brain injury without reported loss of consciousness.[7]

Again, Minnesota Statute §144.661 aids your cross examination on this myth. The statute states specifically that the sudden force applied to the brain or its coverings "may produce an altered or diminished state of consciousness" but does not require it.[8] Interviewing your client in detail about his or her first memory is also very important.[9] Generally, survivors of traumatic brain injury are not reliable indicators of consciousness. How does person really know she was unconscious? Is your client's first memory at the scene after the crash, a witness or the defendant coming up to his or her window? If so, she might have been unconscious for a period of time but, at a minimum, likely had at least a period of an altered state of consciousness. Also emergency room physicians and nurses often do a terrible job of asking the requisite questions to determine whether the person's state of consciousness was altered.[10]

A correct diagnosis of traumatic brain injury may be difficult if it is masked by a serious injury to another body part, subtle and changeable symptoms, or a delayed onset of symptoms.[11] A number of studies indicate a significant percentage of traumatic brain injury cases go undiagnosed at the emergency room.[12] Talking to witnesses at the scene about how your client's actions can be critically important in demonstrating an "altered state of consciousness" if not a loss of consciousness.[13]

Sample Questions for the Neuropsychologist:
Q: Doctor, would you agree that a person need not lose consciousness to suffer a traumatic brain injury?
Q: Doctor, you were aware weren't you that Minnesota Statute §144.661, subd. 2, defines traumatic brain injury? You also of course know that loss of consciousness is not required under this statute?
Q: Doctor, during your career, you have made a diagnosis of brain injury for any patients whose hospital record indicated there was no loss of consciousness, correct?
Q: Doctor, during your career, have you actually provided care and treatment, or recommended care and treatment for someone with a diagnosis of brain injury who did not lose consciousness as a result of the trauma?
Q: Doctor wouldn't you agree that it is difficult for a person to know if he or she suffered a loss of consciousness? In fact, you are aware that Ms. Jones' first memory after the crash is a witness knocking on her window asking her if she was all right?

Q: You would agree that generally survivors of traumatic brain injury are not good indicators of a loss of consciousness?

MYTH #3 – Describing a Traumatic Brain Injury as "Mild" or "Minor" Equates with Insignificant

The reality is the word "mild" in describing a traumatic brain injury is a misnomer and does not mean insignificant. "Mild" should never be used in your verbiage in presenting a traumatic brain injury case to a jury. It is much like refusing to use the word accident and using words like crash or collision. In presenting a brain injury case, there is no such thing as a mild brain injury. In general language, mild connotes trivial and plays into this myth and the typical defense strategy. Any injury can have severe consequences for a person.

Even in the "mildest" of cases the injured victim sustains organic brain damage that causes problems in attention, concentration, memory, and judgment. For the most part, they recognize these deficits and are disturbed by them. The disturbance is all the greater because the patients are often assured at discharge that the injury was inconsequential and that therefore recovery should be immediate and complete. Neither the patients nor their families understand why they are continuing to have so much difficulty and the harder the patients try, the more anxious and frustrated they become.[14] Additionally, doctors will claim a brain injury is mild because there were few symptoms early on. The reality is the effects of traumatic brain injury are often not noticed until the injured person returns to their normal daily routine, which can be days or even weeks depending on the accompanying physical injury. The behavioral effects all brain injury vary depending on the several issues including, site of the lesions, severity, age and premorbid personality.[15]

Sample Questions for the Neurospsychologist:
Q: Doctor, would you agree that the use of the word "mild" or "minor" to describe a brain injury, does not mean that the injury is insignificant?
Q: Although a brain injury may be considered mild, it can have severe ramifications for a person?
Q: Even "mild" traumatic brain injuries can be permanent?
Q: Doctor, would you agree that some persons may develop permanent cognitive or emotional problems as a consequence of what is described as a "mild" or "minor" brain injury?
Q; In fact, some persons end up being disabled from employment from such "mild" traumatic brain injuries?

MYTH #4 – This Traumatic Brain Injury Case Involves Only Unrelated Nonorganic Problems and There is No Basis for Ongoing Organic Complaints

The reality is traumatic brain injury is serious even if it involves only ongoing nonorganic psychiatric or psychological problems. This is a common defense used in most cases, because it allows the defense to say there is no "real" basis for the client's complaints and, therefore, it must be an overreaction, an emotional problem unrelated to brain injury (and likely related to previous depression or other life stress) or even malingering.

Psychiatric or psychological problems usually accompany traumatic brain injury. These issues problems often remain after the brain heals. Psychological responses vary from person to person and depend on who the person was before the brain injury. We all have different backgrounds and personalities that make us who we are and how we will react to a given traumatic situation. If you can get the defense neuropsychologist to agree the reaction itself is real, you go a long way toward getting the jury to accept your client's situation even in the event of inconclusive or normal neuropsychometric testing.[16] It is important to realize that although neuropsychometric tests are effective in diagnosing cerebral dysfunction, they cannot guarantee its absence or rule out organicity.[17] One should also be cognizant that behavior is conceptualized in terms of three functional systems: (1) intellect, which is the information handling aspect of behavior; (2) emotionality, which concerns feeling and emotions; and (3) control, which has to do with how behavior is expressed.[18] Brain damage rarely affects just one of these systems and usually involves all three systems.

The literature supports significant psychiatric or psychological problems caused by traumatic brain injury. In fact, personality changes resulting from traumatic brain injury, even when subtle, are more likely to impede a person's recovery than cognitive impairments or major physical injury.[19] Also, Minnesota Statute §144.661, subd. 2, supplies further ammunition for the attorney to use in cross-examination by requiring only one OR more of the following: (1) an impairment of cognitive or mental abilities (2) an impairment of physical functioning; or (3) a disturbance of behavioral or emotional functioning. The third possibility is often seen as a permanent consequence of what might be considered a healed brain injury from the defense perspective, which will generally defend the case by arguing there is no organic basis for an ongoing traumatic brain injury.

An emotional struggle following brain injury, however, is real. In time, patients may become incapacitated by the psychological responses to their injuries even though the organic effects may have largely disappeared.[20] Cognitive, intellectual, and emotional problems also appear to be more persistent and socially and vocationally disabling than physical or sensory and motor disabilities.[21]

Unlike many psychiatric illnesses that have gradual onset, TBI often occurs suddenly and devastatingly. Although some patients recognize that they no longer have the same abilities and potentials that they had before the injury, many others with significant disabilities deny that there have been any changes. Prominent behavioral traits such as disorderliness, suspiciousness, argumentativeness, isolativeness, disruptiveness, and anxiousness often become more pronounced after brain injury.

Psychiatric disturbances associated with frontal lobe injury commonly include impaired social judgment, labile affect, uncharacteristic lewdness, inability to appreciate the effects of one's behavior or remarks on others, a loss of social graces, and a diminution of attention to personal appearance and hygiene, and boisterousness.[22]

Also, Dr. Muriel Lezak explains how nonorganic factors will always play a role in a brain injury case:

Behavior problems may also become more acute and symptom picture more complex as secondary reactions to the specific problems created by the organic defect further involve each system. Additional repercussions and reaction may then occur as the patient attempts cope with succeeding sets of reactions and the problems they bring.[23]

Later, she explains:

It is rare to find a case in which the behavioral manifestations of brain disease are uncomplicated by the patient's emotional reactions to the mental changes and the consequent personal and social disruptions he is experiencing. As a rule, only the most simplistic or severely impaired persons will present clear-cut symptoms of brain damage without some functional contribution to the symptoms picture.[24]

Another useful tactic in brain injury cases is to highlight for the jury more objective potential causes of your client's symptoms. If your client has a physical injury causing an ongoing chronic pain condition, for example, you can use this injury to get the defense doctor to agree the memory and concentration problems or other similar brain injury complaints could be caused by being in pain and on pain medication. Physical symptoms often impact neuropsychological functioning by competing for attention and interfering with concentration and work efficiency.[25] Persons in pain often feel distressed or defeated and can lack motivation to employ compensatory disciplines to overcome these problems.

All of these issues cause further stress on the affected person, which enhances the possibility of resulting emotional problems. Sustained compensatory efforts may produce symptoms such as fatigue, irritability, headaches, or increase pain in physical issues due to sustained stress.[26] Sustained stress can cause symptoms of an emotional disorder to appear.[27] Other collateral issues such as pain may be further aggravated by stress. Usually, the defense neuropsychologist is not the defense expert testifying about the physical injury apart from the traumatic brain injury and might concede that a physical injury or chronic pain could produce similar symptoms.

Sample Questions for the Neurospsychologist:
Q: Doctor, do you agree that a person can develop psychiatric or emotional problems as a consequence of traumatic brain injury?
Q: Doctor, would you agree that depression is one of the most common consequences of traumatic brain injury?
Q: Doctor, would you agree that this plaintiff suffers from psychiatric or emotional illness?
Q: Doctor, would you agree that the presence of psychiatric or emotional illness complicates recovery from traumatic brain injury?
Q: Doctor, would you agree that a person can develop psychiatric problems following traumatic brain injury, which may persist even though neuropsychological testing is normal?
Q: Although you found plaintiff has no organic basis for her complaints, you would agree that these complaints could be a function of her chronic pain?
Q: In your report, you never indicated anywhere the plaintiff was making up those complaints.
Q: You agree don't you doctor that these complaints are real to her?
Q: In your treatment of patients over the years, you have seen instances where a person might have what seems to be cognitive-type impairments that you actually believe were related to

chronic pain?
Q: Doctor, during your career, have you actually determined that someone was disabled from competitive employment because of psychiatric problems such as depression?

Myth #5 - The Cognitive Impairments Identified in Neuropsychometric Testing Do Not Fit Within a Specific Pattern of Cognitive Impairment Following Traumatic Brain Injury

The reality is that cognitive impairment identified in testing will often vary in a person with a traumatic brain injury. When the defense neuropsychologist finds cognitive impairments in the testing but has no other way to explain those impairments, this myth is frequently used to explain away those findings.

Brain damage manifestations differ from person to person and vary depending on the nature, extent, location of the brain damage, age, sex, physical condition of the person, their upbringing, past life history, personality, and educational level.[28] In fact, Dr. Lezak notes:

Not only is the pattern of deficits displayed by one brain damaged person likely to differ from the pattern displaying by another with damage involving anatomically and functionally different areas, but impairment patterns of patients with similar lesions may also differ.

Persons with identical neuropsychological deficits distribute over a range of disability, with some persons actively pursuing a life of love and work, while others appear at times more disabled than can be easily attributed to their brain injury alone.[29]

Your best bet is to cross-examine the expert using this literature and point out the neuropsychometric tests that were positive assuming those tests support your theory of how the traumatic brian injury is affecting your client.

Sample Questions for the Neurospsychologist:
Q: If there is an injury to the frontal lobe of the brain, the injured person can experience problems with attention, concentration, memory, and word finding, correct?
Q: The psychological aspects resulting from a brain injury can complicate the testing in this case, correct?
Q: Doctor, would you agree that the symptoms of cognitive impairments produced in a person with brain damage and associated psychiatric consequences can vary from person to person? In other words, the effect this has on a person can vary from person to person?
Q: Personalities are something we develop at a very young age?
Q: Each person brings with them personalities and behaviors which could affect the way we respond to a given traumatic situation? Each response could be different depending on the situation?
Q: Although Plaintiff's response may be different than some people that response appears to be real to you?
Q: Doctor you would agree that the book Neuropsychological Assessment by Dr. Muriel Lezak is a reliable and authoritative textbook in the area of neuropsychology? [Read the quote into evidence and ask the doctor if he or she agrees with that statement.]

MYTH #6 – Traumatic Brain Injury is Not Affecting the Person as the Intelligence Scores Remain High

The reality is smart people can have brain injuries too. In the case of an intelligent person with a brain injury, the client will still score higher on the neuropsychometric testing than most people. Defense neuropsychologists continually say that because the scores were above average or still in the superior range, there is no brain injury. It is important to understand that high test scores do not mean there has been no brain injury. A "mild" traumatic brain injury can be debilitating for a person who was previously functioning at a high level. This can be a major source of frustration and change in lifestyle for a highly functioning person. For example, a person who is always able to remember a daily calendar in his/her head or do math in his or head, becomes seriously frustrated when they must now write everything down, carry a day planner or add using a calculator.[30] Even though this person may still be functioning at high level, the brain injury can still affect everything he or she does on a daily basis. The psychological response often includes frustration and anger that in turn can cause severe and debilitating effects on daily functions.

Sample Questions for the Neuropsychologist:
Q: Doctor, you would agree that smart people can have brain injuries too?
Q: And if a person is functioning at a high level but has a traumatic brain injury, even a little loss can be significant to that person?
Q: This loss can result in a great deal of frustration for this person?
Q: That frustration can result in significant functional problems if not treated correctly and/or understood by the victim?
Q: Frustration in dealing with these symptoms is something you have seen in several of the records you reviewed regarding my client?

MYTH #7 – There Must Be Objective Findings on the CT Scans and/or MRI of the Brain to Support a Traumatic Brain Injury Diagnosis

The reality is CT Scans and/or MRI of the brain can be normal even with a valid and legitimate traumatic brain injury. Anybody can handle a brain injury case where there is a large subarachnoid hemorrhage or subdural hematoma. The hard part is convincing a jury where there are no objective findings on any diagnostic scans. Just like in most injury cases, jurors like to see evidence of findings on scans or x-ray which show a demonstrable and objective injury.

In the chapter "Mild Brain Injury," from *Damages in Tort Actions* by Deutsch and Raffa, at page 133 D20, the author writes:

In many of the mild brain injury concussional cases, there are no abnormalities on the computerized tomography (CT) or magnetic resonance imaging (MRI) scans. The neurological examination is often normal. Even many of the psychological and neuropsychological tests can be within normal limits. Nevertheless, cognitive problems and subjective complaints often continue to be significant and these symptoms are related to physical injury to the brain.

The injury is not to nerves, it is to the control center of the brain. Microscopic damage does not show up on MRI scans of the brain. If you do have positive neuropsychometric testing, it is your job to convince the jurors, this testing is as reliable as a positive scan. The very purpose of neuropsychometric testing is to show the brain injury. You must explain this concept through your own neuropsychologist and liken the positive test results to a positive scan or x-ray findings.

Sample Questions for the Neuropsychologist:
Q: Doctor, you agree that a normal skull x-ray, CT scan, or MRI of the brain does not rule out the presence of brain damage with cognitive impairments, correct?
Q: You agree that microscopic brain damage would not show up on a CT scan, MRI, or skull x-ray?
Q: You have seen cases with significant brain injuries without positive structure damages seen on diagnostic scans haven't you?
Q: Doctor, would you agree that microscopic brain damage can result in disabling cognitive impairments?
Q: Neuropsychologists frequently make diagnosis of traumatic brain injury where there is a normal MRI or CT Scan?
Q: In fact, this is one of the advantages of the neuropsychological testing, as you can diagnose an injury that can't be seen on the MRIs, CTs or x-ray tests?

MYTH #8 – Traumatic Brain Injury Cannot Be Diagnosed Through Neuropsychometric Testing If There is No Previous Testing to Compare

The reality is, in most cases, your client will not have undergone neuropsychometric testing prior to the trauma. If your client had previous testing, then it is likely he or she has suffered a previous brain injury and you will be arguing an aggravation case. To combat this myth, pre-accident employment, schooling, work records, etc., must all be taken into account when interpreting the results of the neuropsychological testing. It is important to do adequate background work up of your client. If certain cognitive requirements are necessary for a specific job and a person is functioning in that capacity and then no longer is able to do so, it is more likely the traumatic brain injury would be supported. The whole brain is not injured in each traumatic event. It is likely many of the areas still function normally but you may see a pattern in testing.

Make sure your neuropsychological expert has all this information. Often the defense does not provide this information to their expert in a case where a less severe traumatic brain injury is alleged. This is an area ripe for cross-examination. Find exactly what material was reviewed and if these documents were not provided, you have a goldmine when comparing the two experts and foundation for their opinions.

Sample Questions for the Neuropsychologist:
Q: Doctor, would you agree that you do not need pre-trauma neuropsychological testing in order to make a diagnosis of traumatic brain injury with cognitive impairments following a traumatic event?
Q: Doctor, did you make a determination of what plaintiff's job responsibilities were before the

traumatic event?
Q: Doctor, in neuropsychological testing, you determined that she was impaired in her problem solving abilities, and in speed of information processing, correct?
Q: Doctor, would you agree that it would be unlikely that someone with impairments in speed of information processing and problem solving would be able to function as a [list occupation of Plaintiff)]?
Q: Doctor, in some areas of your neuropsychological testing, did you find that her performances were above average and actually superior?
Q: Doctor, would you agree that a person need not be impaired on all or even half of the neuropsychological tests in order to support a diagnosis of brain damage?
Q: Much of the time only parts of the brain are injured and not the whole brain in these cases, correct?
Q: You would agree that this could explain why plaintiff has some very high neuropsychological test scores in some areas, as those high test scores are relative to the areas of the brain that may not have been injured?
Q: Doctor, would you agree that post-trauma neuropsychological testing can tell you something about the level of functioning of the person's brain before the traumatic event?

MYTH #9 - Plaintiff Continues Working at Her Same Job and Therefore the TBI Has Not Affected Her Ability to Earn a Living

Even though your client is working at the same place, find out how her ability to complete her job has changed.

Many activities which were previously handled automatically and easily, however, may now require a full measure of concentration and effort, with some tasks beyond current capabilities. How the person responds will depend on personality features, external stressors, and provided information and support. Some persons will remain calm and work within their limitation, gradually increasing neuropsychological demand in their lives as their capabilities return, and ultimately making adjustments for any permanent psychological deficits. For others, however, the reaction may be one of alarm, a hypersensitivity to errors, and intensified efforts to compensate and function normally. Working less efficiently the individual may work longer hours to keep up, and sacrifice times for relaxation and rest. Work may continue under a mantle of fear and frustration over seemingly inexplicable changes in psychological functioning. It is not uncommon for affected person to misinterpret cognitive changes as symptoms of a major psychiatric disorder, with this fear adding to their decompensation.[31]

Does she have to work longer hours to do the same amount of work? Does she now have to close her door because noise is distracting? Has she changed the way she arranges her calendars, presentations or other duties of her job. Has she been passed up for promotions? Do her supervisors and co-workers understand her issues and work with her on them? Do they make accommodations? What would happen if your client lost his or her job? A new employer would likely not be as accommodating. Get statements from them and provide those statements to your expert. Often the defense neuropsychologist will not have seen those statements and can be cross-examined on that issue.

Sample Questions for the Neuropsychologist:
Q: Doctor, even though you say she is still functioning at her job, did you know that her supervisor testified:
*Orders or tasks given must continually be repeated?
*She forgets things you tell her continually?
*She tries to be understanding because they like her.
Q: Did [the defense attorney] let you see a copy of the statement we provided several months ago? [Have the supervisor or co-worker testify again during the doctor's cross examination by asking the doctor if she knew what the supervisor or co-worker's observations were.]
Q: Did you know that the client's workplace has made several accommodations as a result of her brain injury? (ask about each specific accommodation)
Q: Did you know her co-worker has provided a statement indicating that the client's personality changed following this brain injury (question as to what is in statement or testimony)?
Q: You did not know about these changes and accommodations because you did not talk to my client's co-workers or supervisors did you?
Q: Doctor, you would agree that a person with a permanent brain injury who is employed in a job like the client's is likely to require some accommodations or changes in practices in order to complete her job effectively and efficiently?
Q: The tests you gave my client do not necessarily replicate real world situations do they? For instance, it is quiet; there no phones going off in the background; people are not talking. It is generally a controlled setting?
Q: Wouldn't you agree that when a person gets out into the real world and there is a lot of activity going on (such as background noise and commotion) this presents more challenges for a person with a traumatic brain injury?

MYTH #10 - Client Scored Well on All Memory Tests and therefore there is No Objective Support for Complaints of Memory Loss

Often with frontal lobe traumatic brain injuries, a client has difficulty with attention and concentration. However, most memory functions are controlled in the temporal lobe. The defense neuropsychologist will often testify that your client has no problem with memory as all the tests for memory went well and hence there was no temporal lobe injury. Accordingly, the memory complaints noticed by the injured victim, family and friends are dismissed. To counteract this testimony, one must carefully establish the true source of what appears to be memory loss. Memory problems reported by the client and other lay people are often actually caused by processing problems manifesting themselves as memory problems. Rather than having trouble with memory, the TBI client is never taking the information in and processing it due to attention and concentration issues from a frontal lobe injury.[32] Someone might say "I told you this same thing 20 minutes ago." This type of comment leads the lay person to believe that the TBI client has forgotten what was said when actually the brain injured person never really got the information in their brain to begin with. So to the client and to those that deal with the client on a daily basis, there appears to be a memory issue, when it is actually a concentration and attention problem. Most defense neuropsychologists will admit that apparent memory problems are often actually signs of a processing problem.

Sample Questions for the Neuropsychologist:
Q: It is fair to say that sometimes when a person is experiencing problems with attention and concentration or processing type issues, these problems might manifest themselves in terms of memory?
Q: People around her might think, "hey you are not remembering it" but actuality, she is just not getting it in, is that fair to say?
Q: So in that case, a person or people around her may see it as a memory issue, when it's really more of processing type problem?

You now have ammunition to cross-examine the defense neuropsychologist in a traumatic brain injury case. Remember is critically important that you debunk the myths because jurors will often see reality as what they see on television or in sports. They generally have no sense of reality in dealing with the after effects of traumatic brain injury. Use the statute we have in Minnesota, as it is a big asset for you. It is up to you to debunk the myths that still pervade in these cases. If you don't, obtaining a positive result at trial for your client will be difficult.

I am not suggesting you use each of these questions in every case. Your cross examination must be specifically tailored to meet the specific issues in your case. But if you sense from the facts or previous testimony that any of these myths are going to be used in your case, you are better off dealing with them not only in the presentation of your case, but especially in cross examining the defense neuropsychologist.

At the outset the author would like to note years ago when involve in beginning stages of doing a significant amount of brain injury work, I read an article entitled the "*Five Myths About Traumatic Brain Injury*" by Charles N. Simkins written in 1998 and eventually met him at a Traumatic Brain Injury Conference in New York in 2000, where he was invited speaker. Mr. Simkins article and research was instrumental in learning about this area and I have since patterned my cross examination of defense neuropsychologists using much of his research and suggested questions. This article, however, expands on his research and myths significantly based on my own research and practical experience and also includes myths that were not discussed in his article. I thought it only proper to give him credit for part of that set forth in this article and suggest the readers review his article as well.

1. Peter G. Bernad, *Closed Head Injury: A Clinical Sourcebook*, (Matthew Bender 1998) at 2.

2. Murial D. Lezak, *Neuropsychological Assessment*, 2d ed. (Oxford Univ. Press. 1983) at 169.

3. "*Traumatic Brain lnjury Study*" by Dr. Kenneth M. Adams and Steven H. Putnam, for the Michigan Catastrophic Claims Association (1989) at 11.

4. Lezak at 167.

5. If your expert is apprehensive about this issue, you need only direct his or her attention to the definition the Mild Traumatic Brain Injury Committee of the Head Injury Interdisciplinary

Special Interest Group of the American Congress of Rehabilitation Medicine Journal of Head Trauma Rehabilitation 1993:8(3):86-87, which provides:

A patient with mild traumatic brain injury is a person who has had a traumatically induced physiological disruption of brain function, as manifested by at least one of the following:

1. any period of loss of consciousness;
2. any loss of memory for events immediately before or after the accident;
3. any alteration in mental state at the time of the accident (e.g., feeling dazed, disoriented, or confused); and
4. focal neurological deficit(s) that may or may not be transient, but where the severity of the injury does not exceed the following:
    1. post-traumatic amnesia (PTA) not greater than 24 hours
    2. after 30 minutes, an initial Glasgow Coma Scale (GCS) of 13-15
    3. loss of consciousness of approximately 30 minutes or less.

This definition of trauma can include:

1. the head being struck
2. the head striking an object
3. the brain undergoing an acceleration/deceleration movement (i.e., whiplash) without direct external trauma to the head

6. Hell, et al, *Biomechanics of Cervical Spine Injuries in Rear End Car Impacts: Influence of Car Seats and Possible Evaluation Criteria* as published in Traffic Injury Prevention 3:127-140 (2002) and van den Kroonenberg, et al, *Human Head-Neck Response During Low-Speed Rear End Impacts*, Proceedings of the 42nd Stapp Car Crash Conference SAE 983157 (1998) p. 207-221.

7. Silver, Yudofsky and Hales, *Neuropsychiatry of Traumatic Brain Injury* (American Psychiatry Press, Inc. 1994) at 28.

8. See infra, Minnesota Statute §144.661, subd. 2 . See infra footnote 6 with a similar traumatic brain injury definition.

9. The author once had a case where the plaintiff was involved in an accident on his “normal” route home from work. He left the scene of the crash by driving the wrong way following the collision and ended up having to pull over to regain his senses about where he was and how to get home. The client never offered this information in the initial interview but it was mentioned in an intake form on the chiropractic record. Obviously, this was important information for the neurologist and neuropsychologist and demonstrated an “altered state of consciousness.”.

10. Mariusz Ziejewski, *The Biomechanical Assessment of Traumatic Brain Injury*, at 3 (taken from seminar material provided by Dr. Ziejewski at the Matter of the Mind: Solving the Brain Injury Puzzle Seminar at the Minnesota Trial Lawyers Association on 4/29/05).

11. Ziejewski at 3.

12. Zhang, Yang and King, *Biomechanics of Neurotrauma*, Neurological Research 23:144-56, (2001).

13. In another case, the client though she was a little disoriented at the scene, but could not provide any specific example herself. After interviewing a witness, this disorientation and confusion became readily apparent. A witness stated the plaintiff kept repeating she had to find her cigarette in her car and put it out as she was worried her car would catch on fire. However, she did not smoke! She was said to be running around the car frantically looking for a cigarette that did not exist. This testimony was very helpful in establishing an "altered or diminished state of consciousness", especially when the emergency room records indicated she hit her head but no loss of consciousness resulted. Interviewing witnesses about your client's actions at the scene is a necessity in all such cases.

14. Rimel, Giordano, Barth, Boll, and Jane, *Disability Caused by Minor Head Injury*, Neurosurgery, Vol. IX (1981) at 227.

15. Lezak at 165

16. Often the defense neuropsychologist will argue there is no organic basis for the complaints or problems and therefore the issues are nonorganic in nature. If they are nonorganic, then it is argued they bear no relation to the collision in question.

17. Lezak at 153.

18. *Id.*at 18.

19. *Id.* at 171.

20Rimel at 227.

21. Dikmen, Reitan, and Temkin, *Neuropsychological Recovery in Head Injury,* Archives of Neurology, Vol. 40 (June 1983) at 333.

22. Yudolfky and Hales, *American Psychiatric Press Textbook of Neuropsychiatry,* 3d Ed. (American Psychiatric Publishing, Inc. 1992) at 529.

23. Lezak at 19. See also George K. Montgomery, *A Multi-Factor Account of Disability After Brain Injury: Implications for Neuropsychological Counselling*, Brain Injury Vol. 9, 5:453-469 (1994) at 455 (emotional disorder can result from the confusion and anxiety that person may experience as they attempt to resume their lives and cope with what may be mild and temporary changes in brain functioning) citing also K. Goldstein, *The Effect of Brain Damage on the Personality*, Psychiatry, 15:245-60 (1952).

24. Lezak at 232-33. *See also Id.* at 612 (stating elevated MMPI profiles tend to be common among brain injured persons, which is reflective of the relatively frequent incidence of emotional disturbances in these patients).

25. Montgomery at 462.

26. *Id.*at 456.

27. *Id.* at 456.

28. Lezak at 165 and 225 (educational level playing a role in recovery from brain injury) and 226 (discussing social and cultural variable playing a role in test performance)

29. Montgomery at 454 (noting there is a difference between neuropsychological impairment which refers to a "deficit in neuropsychological functioning that is directly attributable to organic pathology and limits psychological functioning" and disability refers to "the quantity or quality of an individual's daily-living activities").

30. See Lezak at 165 (discussing the effect on testing of brain injured persons who remain exceptional at arithmetic).

31. Montgomery at 455-56.

32. Lezak at 172 (stating that memory problems maybe mean an number of specific disabilities involving registration, attention, and tracking; immediate memory span, learning or retrieval in one or more modalities or a condition in which the patient has stored and can retrieve required memories but seems unable to do so without response directed questioning or cuing).