

NEW TRENDS AND ISSUES IN NEUROPSYCHOLOGY:

Mild Traumatic Brain Injury and Postconcussive Syndrome Cases

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Introduction to Neuropsychology

As many of you are aware, clinical neuropsychology is the study of relationships between the brain and behavior. It attempts to quantify and qualify the functional ramifications of brain lesions. Neuropsychologists use the understanding of brain-behavior relationships, disease processes, psychological and social factors, and patient differences to investigate the individual ramifications of brain dysfunction. Neuropsychology primarily deals with the behavioral expression of brain dysfunction.

Clinical neuropsychology is based on its empirical research of the relationships between a person's brain and that person's behavior. Essentially, it is assumed that the patient once functioned in a certain manner. A behavior change has now emerged, and with this behavior change, a deviation from the normal expected premorbid pattern of test performance. Obviously, it may be impossible to determine the person's functional status prior to injury. Neuropsychologists who are retained as experts will sometimes use different normative groups to create an "abnormal" finding.

In recent years, defense attorneys have been increasingly confronted with neuropsychological testing and evaluations in cases where plaintiffs allege the existence of mild traumatic brain injury (MTBI) and postconcussive syndrome as the result of an accident. In these cases, plaintiffs' attorneys frequently retain a neuropsychologist to perform a neuropsychological evaluation as conclusive evidence of brain damage, cognitive deficits, and disability. For defense attorneys, there are a number of issues to consider regarding a neuropsychologist's methodology and testing validity in cases where a plaintiff has alleged the existence of MTBI and postconcussive syndrome as a result of an accident. Most recently, there are a number of new and different developments in the detection of malingering in neuropsychological examinations.

Mild Traumatic Brain Injury and Postconcussive Syndrome

MTBI and postconcussive syndrome occur when there has been an insult to the brain commonly coming from a flexion-extension injury or a blow to the head. Although occurring from all types of trauma, motor vehicle collisions are the most common cause

of MTBI and postconcussive syndrome. While there is no generally accepted definition¹, certain symptoms have come to be associated with MTBI and postconcussive syndrome. Included among these symptoms are: dizziness; headaches; fatigue; insomnia; impaired intellectual abilities; moodiness and irritability; anxiety and depression; an increased sensitivity to noise; and problems in attention, concentration, memory, and judgment.

In brain injury cases, plaintiffs' attorneys frequently retain a neuropsychologist to perform neuropsychological testing and to conduct an evaluation of their allegedly injured clients. Plaintiffs' attorneys use the neuropsychologists to testify and present conclusive evidence of brain damage, cognitive deficits, and disability. As discussed above, there is no generally accepted definition of "postconcussive syndrome." In addition, the symptoms of MTBI and postconcussive syndrome are not only unclear and poorly defined, there are numerous other possible causes of these symptoms (which are associated with numerous other injuries and mental or emotional conditions). Furthermore, these symptoms are more common among people with neurotic or personality disorders. Thus, for plaintiffs' attorneys, the primary purpose of retaining a neuropsychologist to perform a forensic neurological assessment is to evaluate the patient's current cognitive status. Neuropsychological testing involves the administration of specialized psychological tests with suspected focal or diffuse brain dysfunction to identify altered cognitive, behavioral, and emotional function with factors that may influence the patient's functioning.² The examinee's current state is then compared with an estimate of that person's pre-injury condition and status to determine the nature and extent of impairment (if any).

For the plaintiffs' bar, the most important role of a neuropsychologist in MTBI and postconcussive syndrome cases is to: objectively document residual and enduring deficits in the plaintiff; conclusively determine that these deficits stem from a traumatic brain injury the plaintiff suffered; and relate the results to the plaintiff's current and future adjustment. The testimony of neuropsychologists is typically based upon test scores obtained in the neuropsychological evaluation that are below a determined "cutoff" point or test results that are subjectively interpreted by the evaluating neuropsychologist as indicating the plaintiff is impaired "impaired." In addition, neuropsychologists rely on a patient's self-report of cognitive deficits and deficiencies.

In brain injury cases (specifically involving allegations of MTBI and postconcussive syndrome), defense attorneys also use the forensic neuropsychological assessments of brain injury to determine whether there in fact was an injury and, if so, its nature and extent. Other important components of forensic neuropsychological assessments of brain injury include: the impact of the injury on an examinee's

¹ The American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association 1994) does not identify postconcussive syndrome as a standard diagnostic category but rather places it in an appendix. The International Classification of Diseases – 9th Revision – Clinical Modification (ICD-9-CM) indicates that the symptoms of postconcussive syndrome are more common in among people who have suffered from or are suffering from neurotic conditions and personality disorders, or when there is a possibility of financial compensation. In addition, there are multiple definitions of MTBI throughout the literature.

² Muriel Deutsch Lezak, "Neuropsychological Assessment," at 8 (3d ed).

personality, cognitive functions, and behavior; whether the patient's deficits are treatable and the prognosis for treatment; and consequences of the injury and their potential effects on the patient's life. Inevitably, the adversarial nature of litigation brings the potential for response bias with respect to neuropsychological testing. Defense attorneys who are confronted with these claims must first determine the validity and reliability of the examining neuropsychologist's methodology and testing, then challenge the examining neuropsychologist if the testing does not consist of valid methodology.

Defense attorneys should demand a copy of the neuropsychological raw data (i.e., the test results from the neuropsychological assessment) when presented with a neuropsychological evaluation and report. This includes a plaintiff's responses to tests, as well as the test-scoring sheet of the neuropsychologist conducting the examination. Typically, a subpoena to the neuropsychologist or a request for the production of documents would normally be all that is required to obtain this information. However, neuropsychologists, whether treating or retained, often refuse to share the data with defense attorneys, relying upon ethical standards to assert that they are only permitted to share the raw data and scores with other competent neuropsychologists.³

If a neuropsychologist will not comply with a subpoena and refuses to provide the requested information, defense attorneys should file a motion to compel the neuropsychologist to provide the raw data and test-scoring sheets. Neuropsychological opinions form the basis of a plaintiff's claims; thus, it is imperative that defense attorneys have the raw data and score sheets for purposes of determining not only the validity of the assessment, but also the validity of the neuropsychologist's interpretation. Without the raw data, a defense attorney cannot effectively cross-examine the neuropsychologist regarding the administration and interpretation of the neuropsychological assessment. Plaintiffs' attorneys are not entitled to a presumption that the neuropsychological tests and evaluation were properly administered.

Once the neuropsychologist's data is obtained, defense attorneys should not only have the opinions analyzed; they must determine whether the neuropsychological testing was properly administered and scored. Naturally, defense attorneys seek to conclusively demonstrate to the jury that the adversarial neuropsychologist improperly administered the tests.

Methodology Issues for Defense Attorneys

In MTBI and postconcussive syndrome cases, forensic neuropsychological assessment is a measure of pre- and post- injury statistics through a comparison of data gathered from history, psychological and neuropsychological testing, and a review of records (such as employment records, academic records, etc.). The records review provides the basis for opinions regarding the patient's pre-injury stats, since pre-injury neuropsychological testing is not typically available.

³ "Ethical Principles of Psychologists and Code of Conduct," in *An American Psychologist* § 2.02(b) (Dec. 1992).

There are number of different methods for obtaining a patient's history, with one of the most common being first-person interviews of the patient. Research studies, however, have shown that patients' self-reports and self-assessments are not reliable. These studies have shown that patients, particularly those assessed after the initiation of litigation, routinely over-estimate their pre-injury neuropsychological abilities and underestimate their post-injury abilities. Other common errors in history taking are:

- estimates of pre-injury functioning based on reports from unreliable sources;
- not discovering pre-existing impairments and prior injuries;
- lack of awareness regarding pre-injury cognitive functioning;
- not investigating psychosocial stressors influencing the patient's performance on tests;
- missing information about pre-existing psychological problems or mental disorders; and
- the widespread tendency for neuropsychologists to presume etiology based upon the plaintiff/examinee's opinions about etiology.⁴

Furthermore, if a neuropsychologist fails to obtain historical information regarding alcoholism, substance abuse, medication usage, and problems secondary to personality disorders, it can lead to incomplete histories and erroneous conclusions.

Neuropsychologists often conduct collateral interviews with a patient's family members, friends, and co-workers as part of assessing that patient's pre- and post-injury conditions. However, these interviews are not always the best source of data regarding a patient's condition. In litigation, it is difficult to locate objective observers. Family members and friends, for example, are subject to response biases and a desire to assist relatives and friends to such an extent that their data are frequently unreliable for purposes of scientifically accurate measurement. Because of these biases, defense attorneys must be mindful that neuropsychologists frequently err in relying too much on the reports of family members, friends, and coworkers as demonstrative of a patient's pre- and post-injury conditions.

⁴ John T. Dunn, "Forensic Issues in the Neuropsychological Assessment of Mild Traumatic Brain Injury and Postconcussive Syndrome."

Testing Validity Issues for Defense Attorneys

Neurological assessment of cognitive functions typically includes tests of attention, concentration, memory, and intelligence. Personality variables are evaluated because emotional and interpersonal functioning are frequently affected by MTBI and postconcussive syndrome.

Attorneys, however, must be cognizant that valid forensic neuropsychological assessments require the neuropsychologist to cope with a variety of threats to validity. Patients can voluntarily manipulate most neuropsychological tests, by readily determining how to simulate impairment. Research has shown that adults, adolescents, and children are capable of faking impairment on neuropsychological tests and fooling even highly experienced neuropsychological experts.

There are many ways to simulate impairment on neuropsychological tests. A sampling of the potential means of simulating impairment through neuropsychological testing includes:

- reporting common subjective symptoms;
- pretending to forget colors, words, or visual designs;
- working slowly on timed tests and responding carelessly;
- rendering drawings of poor quality; and
- random responding to test items.⁵

Neuropsychological assessment presumes that the examiner obtains the best possible performance on the part of the patient. Lack of or variable effort may invalidate the results. In properly assessing the methodology and testing validity of neuropsychological testing and evaluations, defense attorneys must determine the examinee's level of motivation and insure that it was closely monitored and objectively assessed in the evaluation (rather than based on the neuropsychologist's subjective interpretation and analysis).

One of the issues for defense attorneys is the lack of validity scales in neuropsychological testing. The inability to evaluate the level of effort being put forth by a patient in a neuropsychological evaluation may present problems for defense attorneys seeking to challenge the tests. A competent assessment must include an evaluation and analysis of the effort and cooperation of the examinee, as well as an analysis of possible malingering.

⁵ John T. Dunn, "Forensic Issues in the Neuropsychological Assessment of Mild Traumatic Brain Injury and Postconcussive Syndrome."

Recent malingering research has focused on the development of forced choice tests of malingering with good results. There are a number of valid and reliable neuropsychological malingering tests currently available. Thus, it is important for attorneys to verify that the evaluating neuropsychologist performed a thorough objective assessment of malingering. Contrary to the belief among a number of plaintiffs' attorneys, a neuropsychologist's subjective impressions as to whether the examinee was malingering is not reliable and insufficient.

There are several recent articles addressing new or different ways to detect malingering.⁶ For example, there is some support for using the Cognitive Behavioral Driver's Inventory (CBDI) to detect neuropsychological malingering. Previous research supports the use of this test to detect malingering. Malingering detection should be resistant to coaching, and the CBDI profile includes response time data, which is thought to be more resistant to coaching. Recent studies have confirmed that the use of the CBDI test can be successful in detecting the presence of malingering.⁷

Summary and Conclusion

Defense attorneys who are confronted with MTBI and postconcussive syndrome claims need to be aware that there are many challenging problems that plague these conditions, beginning with the variable definitions for both MTBI and postconcussive syndrome. Specifically, defense attorneys must comprehend the numerous factors that negatively affect neuropsychological test performances – factors that are unrelated to the accident or event that is the focus of a plaintiff's claim. These factors include medical and psychological conditions such as hypertension, elevated cholesterol, cardiovascular disease, diabetes, pain, depression, anxiety, drug abuse, alcoholism, attention deficit disorder, learning disorders (e.g., dyslexia), and personality disorders. Prescription medications including narcotic pain relievers, muscle relaxers, anti-depressants, and anti-anxiety medications are notorious for lowering neuropsychological test performances. Simply putting forth less than full effort on tests, which is intuitively obvious to most people, is another method of obtaining "impaired" test scores. Also, research has shown that when administered a large battery of neuropsychological tests, normal people without any history of neurologic compromise, on average obtain ten percent of their scores in the "impaired" range. Recent research has also demonstrated that patients' self-reports in forensic neuropsychological evaluations are typically not reliable.

Because of these factors, it is important to realize that neuropsychological tests are not diagnostic of brain damage. Low or impaired test results may indicate the presence of a cognitive weakness or deficit, but not the etiology of that weakness or deficit. Many plaintiffs' attorneys inaccurately believe that neuropsychological tests are diagnostic of brain injury. The test results, however, only identify areas of impairment or

⁶ Glenn J. Larrabe, "Detection of Malingering Using Atypical Performance Patterns on Standard Neuropsychological Tests," *The Clinical Psychologist*, Vol. 17, No.3 (2003)

⁷ Borckhardt, Engum, Lambert, Nash, Bracy and Ray, "Use of the CBDI to Detect Malingering When Malingers Do Their 'Homework,'" *Clinical Neuropsychology*, Volume 18, Issue 1 (January 2003).

cognitive weaknesses; they do not reveal the cause of the impairment. Causation is an opinion that a neuropsychologist infers from test results. Neuropsychological tests measure the nature and extent of function limitations, but not their cause. Conclusions regarding causation are derived through history, a review of records, and the relationship between this history and the nature/extent of the deficit. Because there are so many factors that can negatively affect neuropsychological test performances, it is crucial for defense attorneys to properly challenge neuropsychologists who conclude that the tests are diagnostic of brain injury. Defense attorneys can effectively challenge a neuropsychologist's testing and evaluation through the use of recent developments in the detection of malingering in neuropsychological examinations.