

Neuropsychological Assessment: The Key to Understanding Changes that Result from Brain Injury

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Introduction

It can be difficult for family members to understand the cognitive and behavioral changes that often persist after a traumatic brain injury. Individuals with brain injury are customarily referred for a neuropsychological assessment during the process of rehabilitation. The referral may be ordered by the attending neurologist or physiatrist (a specialist in physical medicine and rehabilitation). Physicians do various evaluations; for example, a neurologist evaluates the central nervous system at all levels without comprehensive and specific findings to determine the presence of dysfunction. The neuropsychological assessment is a specialized task-oriented evaluation of human brain-behavior relationships. It relies upon the use of standardized testing methods to evaluate higher cortical functioning as well as basic sensory-motor processes.

It is appropriate for both a neurologist and a neuropsychologist to perform evaluations and there are some similarities to the kind of testing they do; however, the neuropsychological assessment is designed to provide more detailed and comprehensive information about cognitive capabilities than the neurological evaluation. A neuropsychologist is a psychologist with specialized training in brain-behavior relationships, and instead of being a medical doctor (MD), the academic credentials for a neuropsychologist will likely be PhD or PsyD.

The neuropsychologist will review the case history, hospital records and interview the individual and his/her family; or, in other words, acquire information about the “person” the individual was before the injury (i.e., school performance, habits, and lifestyle). If the evaluation is performed while the individual is in an active rehabilitation program it is used as a basis for formation of a treatment plan implemented by the therapists and others working in one-on-one or group settings with the individual.

What Is Learned from this Assessment?

The assessment is comprised of a wide range of psychological tests that objectively measure brain functions. Ideally, the assessment should be done by a board-certified neuropsychologist, not a technician, as interview and observation provides important information used in interpreting the results. Testing includes a variety of different methods for evaluating attention span, orientation, memory, concentration, language (receptive and expressive), new learning, mathematical reasoning, spatial perception, abstract and organizational thinking, problem solving, social judgment, motor abilities, sensory awareness and emotional characteristics and general psychological adjustment.



Possibly the most important outcome of this testing is the interpretation of the results which are used not only as the basis of the treatment plan for therapists but even more importantly for the individual with brain injury and his/her family. Once the neuropsychologist has completed the scoring and the narrative portion of the assessment, a meeting should be scheduled with the individual and his/her family to discuss the findings. It is helpful to ask that the conference be recorded or bring a tape recorder with you. Taping the conference can be very valuable for other members of the family unable to attend the conference. A hard copy of the evaluation should be provided as well.

The neuropsychologist should explain, in detail, the individual's abilities that remain unchanged as well as areas of the brain that are adversely affected by the injury and how these deficits are expected to impact the individual's life. It is helpful for the neuropsychologist to be very clear and informative about ways the injury will affect the day-to-day existence of the individual (e.g., "damage to the frontal lobes of the brain is expected to create difficulties in planning and organizing tasks, use of good judgment, and insight into his/her own situation" or "damage in the right temporal area of the brain may impact on the individual's musical appreciation or rhythm"). This important information can help the family more effectively guide and support the individual and assist with activities that utilize the preserved abilities and reinforce strategies that compensate for deficits.

To be most effective, the cognitive rehabilitation plan should be based on the results of the neuropsychological assessment. Ideally, the plan should be implemented by therapists, such as a day treatment program, residential programs and/or outpatient services and the family needs information about their role in supporting and reinforcing the rehabilitation goals when the individual is in the home or community. Knowing your family member's deficits can increase your effectiveness as a caregiver and decrease the discord that often develops when the family is not aware of ways the injury has affected the cognitive abilities of a family member.

An assessment can be a costly procedure; however, most comprehensive major medical policies cover these services. Managed care plans often require use of providers on the plan that may not include neuropsychologists experienced in brain injury. It may be possible to arrange this type of evaluation through state provided services such as vocational rehabilitation, programs that fund individuals with specific disabilities and community mental health agencies. Children in the public school system are periodically evaluated by school psychologists to develop their individual education plans (IEP), but they may not be as experienced in acquired brain injury as is desirable. Universities offering programs in neuropsychology often provide evaluations at low cost or sliding scale as part of their student training; however, state agencies and universities are often less willing to share the results of the evaluation with families than neuropsychologists in the private sector.

In summary, the neuropsychological assessment is a key piece of the puzzle that explains how damage in the brain affects the way an individual with brain injury thinks, acts and deals with life in general. This information must be known by all who know and love the individual to ensure that life after brain injury, although never the same, is worth living.



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References

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