



## **Neuropsychological Assessment: A Key Piece of the Puzzle After Brain Injury**

(Originally published as Family News and Views, Vol 5 No. 3, April, 1998)  
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Traditionally a patient is treated and evaluated by a number of medical doctors after a traumatic brain injury and one or more of these physicians may continue to follow the patient for a prolonged period to monitor recovery and manage medications. In addition the treatment team is composed of other professionals whose services are well understood by families, e.g., physical therapists, speech language pathologists and occupational therapists. However, at some point post injury the individual with brain injury should be referred for a neuropsychological assessment and this procedure as well as the professional providing the services may be less well known. It can be confusing for individuals and families to understand the differences between a neurologic evaluation and a neuropsychological assessment. Many patients are seen by neurologists and the kind of assessment a neurologist performs is designed to evaluate the central nervous system at all levels without comprehensive and specific findings to determine the presence of dysfunction. In many cases the neurologist may refer the patient to a neuropsychologist for more specific information about an individual's strengths and weaknesses as a result of brain injury. A neuropsychologist is a psychologist with specialized training in brain-behavior relationships and instead of being a medical doctor (M.D.) the academic credentials for a neuropsychologist will likely be Ph.D. or Psy.D.

### **What is the Neuropsychological Assessment/Evaluation?**

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. The neuropsychological assessment is usually conducted as soon as the patient is neurologically stable. A neuropsychological evaluation requires many hours of interview and testing. The neuropsychologist will review the case history, hospital records, interview the individual and his/her family, 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 the family. Once the neuropsychologist has completed the scoring and the narrative portion of the assessment, a meeting should be scheduled with the individual and the family to discuss the findings. It is helpful to ask that the conference be tape recorded or bring a tape recorder with you. 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 on 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 individuals musical appreciation, rhythm, etc." 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. The plan should ideally be implemented by therapists, such as a day treatment program, residential programs, and/or out patient 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.

## **Is A Neuropsychological Assessment Expensive?**

An assessment can be a costly procedure. Limitations imposed by managed care plans often permits use of only those providers on the plan which 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. Youngsters 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 students 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 and 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.

### References:

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