

CLINICAL CONSULT COLUMN

Q: I recently started working in an acute rehabilitation unit which primarily serves children and adolescents. Previously, I had worked entirely with adults. I understand that there are often disagreements about the priority status of academic and vocational goals especially for older adolescents. Sometimes clinicians feel that academic goals are out of the question and children should simply be trained for entry-level jobs. How can the typical neuropsychological assessment process be adapted to answer questions about vocational training and job selection for children? When does the neuropsychologist get involved in vocational issues? How can the neuropsychologist integrate input from the patient, family, and other team members?

A: Addressing the vocational and educational needs of adolescents with neurological and other severe insults has begun to draw more attention in recent years. The recent advent of the Americans with Disabilities Act (ADA) has made more people aware that persons with disabilities can often be employed competitively if minor adaptations are made. With adolescents, the school has tended to serve the "team leader" function in addressing vocational needs, with varying success. As with all aspects of rehabilitation, the team approach is essential and the team should (at a minimum) include the adolescent, his or her family, a vocational/career counselor, a psychologist and/or neuropsychologist, school representative(s), and other team members (e.g., speech/language pathologist, occupational therapist, physical therapist, nurse, physician) depending upon the specific abilities and impairments of the adolescent involved.

Neuropsychological evaluations can be very useful in developing a profile of strengths and weaknesses that may assist the adolescent in developing long-term goals. Goals need not be limited solely to entry-level jobs; more challenging jobs and postsecondary education are often options. A neuropsychological evaluation is typically most valuable when questions and goals are provided at the outset to the neuropsychologist. This enables the neuropsychologist to more intensively evaluate specific areas of functioning relevant to the individual's goals. For example, if the adolescent is interested in being a teacher, the neuropsychologist

would try to collect information about the individual's ability to be aware of others' (e.g., students', parents') needs, ability to communicate information clearly, mastery of academic material, cognitive flexibility, problem-solving ability, and so forth. Evaluation of an adolescent who wanted to be a small-equipment repairperson might focus more on perceptual-motor skills, sequencing ability, understanding of cause-effect, hypothesis-testing, and the like. Using a process-oriented or qualitative approach to neuropsychological evaluation is likely to yield a wealth of information related to an adolescent or child's abilities in addition to purely quantitative, norm-based measures. Essential information includes: Does the child monitor his or her performance? Does he or she recognize and self-correct when errors occur? How does the child handle perceived failure? When an initial attempt at a task fails, does he or she come up with an alternative approach or persist in using the same strategy? What compensatory strategies does he or she use? Does he or she understand instructions the first time and clarify misunderstandings appropriately? Does he or she learn from errors? Does he or she remember instructions? While few of these questions are answered by scores per se, they can be answered by the neuropsychologist who observes the child's approach to tasks closely and attempts to consider a variety of variables affecting task performance. In addition to employing a qualitative approach to evaluation, the neuropsychologist who is assisting an adolescent with future planning often includes functional tasks in the evaluation. For example, how does the youth go about locating the office of someone he or she is unfamiliar with (Woodrow Wilson Rehab Center Executive Route Finding Task)? Can he or she write a check accurately? Is the child able to recall functional information such as his next appointment or where the waiting room is? Using the same functional tasks repeatedly allows the neuropsychologist to create a set of "internal norms" that provide the basis for comparison and allow appropriate recommendations to be made. Finally, observation in other settings as well as completion of rating scales by the adolescent, his or her family members, teachers, and/or therapists and employers can provide a

more detailed view of the child's functioning outside of the evaluation setting.

With regard to your question about when a neuropsychologist should be involved in vocational issues, my feeling is that whenever future planning is an issue, the neuropsychologist can provide useful input. Roles for the neuropsychologist can include more traditional clinical therapeutic ones, such as helping the child and family to identify potential goals and barriers and helping the team to communicate effectively. Presenting and discussing evaluation results and their implications is another important role. Rehabilitation neuropsychologists may also be able to address issues related to cognitive rehabilitation, including remediation of impairments, use of compensatory strategies, and development of environmental modifications to facilitate performance in both academic and vocational settings. The opportunity for vocational and academic success are enhanced when the family's and other team members' input is successfully integrated. The effectiveness of any plan should be evaluated repeatedly over time, with improvement in functioning noted, barriers to success identified, and a plan for overcoming barriers developed. The school is responsible for developing a transitional individualized educational program (IEP) for students with special needs who are 14 years and older. This provides for several years of evaluation, remediation, modification, and future planning that can be instrumental in the adolescent's success in later years. Educating the adolescent and parents about their rights within the school system and how to advocate for their child and collaborate with the school and other systems can reap great benefits in terms of eventual outcomes.

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OTHER RESOURCES:

1. Wehman P. *Life beyond the classroom*. Baltimore: Paul H. Brookes, 1992.
2. Wolcott G, Lash M. *When your teenager is injured . . . Moving from school to work*. Boston: Tufts University (in press).

Dear Editor:

There has obviously been a surge of interest in recent times regarding mild traumatic brain injury. As a clinician, I have been somewhat frustrated by the lack of information regarding rehabilitative interventions for patients with postconcussive disorders. Is there truly a benefit to such intervention for this patient population? It is my understanding that most of these individuals recover quickly, that is, within two to three months status post their injury. Does it make sense, therefore, to render services diagnostic or otherwise for this particular group of patients? Your comments would be much appreciated.

CP, Phoenix, AZ

Dear CP:

We would like to respond to your question at several different levels. Based on the historical information and research in the area of mild traumatic brain injury, it was once thought that all of these individuals did fine. We now know that this is not the case and there are a significant number of individuals (probably around 20% or so) who have longer-term deficits and functional impairments resulting from their injury (some even permanent). From a neurologic and medical standpoint, most of these individuals have unremarkable elemental neurologic examination. Most even have fairly unremarkable bedside mental status examinations even when more sophisticated assessment strategies are utilized. Neuropsychological evaluation and higher-level cognitive linguistic evaluation are critical in order to delineate some of the more subtle deficits that impede such individuals on a day-to-day, hour-to-hour basis. What is interesting is that many times these individuals test out fairly "normal" on standard assessments used by occupational and speech-language pathology therapists. It really takes a very special knowledge base relative to therapist involvement to work with this patient population. It is critical to perform "domain specific" evaluations to truly assess the magnitude of the subjective

functional complaints. Some of the areas that we advocate for relative to assessment and intervention include:

- Provision of compensatory strategies for executive function deficits.
- Adaptive strategies for higher-level activities of daily living.
- Addressing higher-level linguistic pragmatic deficits via increasing awareness to the specific deficits as well as relearning "social rules."
- Increasing awareness of functional performance deficits to allow implementation of individualized compensatory strategies.
- Assessment of higher-level balance deficits with vestibular habituation training and functional balance retraining as indicated.
- Neuropsychological evaluation to define areas of higher-level cognitive deficit, identify areas of preserved cognitive strength, and provide recommendations regarding compensatory strategies.
- Physiiatric and neuromedical assessment to define sequela directly related to concussive brain injury versus cranial adnexal trauma versus "whiplash" injury and treat each accordingly. As appropriate, diagnostic testing including MRI, SPECT, PET, quantitative EEG, and electronystagmography, among others, may be of benefit in delineating underlying etiology of subjective patient complaints.
- Appropriate prescription of pharmacologic agents to assist in facilitating neural and musculoskeletal recovery. Some of the more salient areas generally amenable to drug treatment include sleep/wake cycle dysfunction; neurobehavioral problems including depression, anxiety, and irritability; and cognitive dysfunction.
- General education regarding clarification for both patient and family as to the etiology, prognosis, and validity of their symptoms.
- Supportive counseling as indicated to deal with expected emotional adjustment issues.

We hope the above information provides you with at least a brief perspective on all that can be done for these individuals. It is our recommendation and experience that an interdisciplinary treatment model ultimately results in the best functional outcome for individuals with postconcussive disorders. Without question, however, there is a need for further research and documentation of treatment efficacy and comparative analysis of treatment strategies. We would reinforce the need for rehabilitation professionals to collectively assess these issues in order to optimize the care that we are able to render this particularly challenging patient population.

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