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## **Smart Isn't Everything: The Importance of Neuropsychological Evaluation for Students and Individuals on the Autism Spectrum**

Ilene Solomon, Ph.D.,  
Spectrum Services

The decision to have a child or adolescent evaluated is frequently a difficult one for parents to make. Parents wonder if their child is just going through a phase or if their child is developing at a slower pace and will catch up eventually. Often time passes and the child or adolescent has not outgrown the behaviors or the academic problems that were worrisome. At such times parents may decide to have their child evaluated. Because there are many different kinds of evaluations and evaluators, it can be difficult for parents to know how to proceed. This article will familiarize parents and individuals with the purpose and benefits of neuropsychological evaluation.

Parents of children with high functioning autism (HFA) are often puzzled by the fact that their children appear to be so smart and competent academically, yet struggle in school. Children with high functioning autism may have subtle learning issues in domains such as reading, writing, and math. Many times however, these children have little difficulty in these academic areas yet they are experiencing difficulty in school. It is often the behaviors that support academic success (organization, follow-through, remembering, flexibility, persistence, focus, social skills) which are known as executive functioning skills that are weak or deficient for individuals with high functioning autism. Parents are often frustrated by what they perceive as "laziness" in their child. What looks like "laziness" or lack of caring may actually indicate the presence of subtle brain dysfunctions which are developmental in nature. It is important to identify these brain related problems so that appropriate academic and behavioral interventions can be implemented in a timely manner. When effective interventions are put in place early, it is less likely that problems will snowball into more severe emotional and behavioral difficulties (Silver, CH. et al. 2006).

It is the province of neuropsychology to understand how problems in executive functioning interact with other weaknesses or deficits to impede academic and life success. Executive skill deficits may interfere with a person's success in life beyond the academic years. It becomes difficult to function on a job if one can't organize and prioritize tasks or has little ability to "get going" or follow through on an assignment. In addition to understanding deficits, a neuropsychological evaluation can also delineate a pattern of strengths which can help form the basis of appropriate compensatory skills.

## **What Is a Neuropsychological Evaluation?**

Neuropsychology is the evidence-based study of brain-behavior relationships. A neuropsychological evaluation is a systematic assessment of these relationships. Neuropsychology is a specialty within the broader field of clinical psychology. It is conducted by a neuropsychologist, a psychologist who has gone on to have extensive specialized training in neuropsychology. School psychologists are not typically trained in neuropsychology nor do they have the time to conduct these extensive evaluations.

For some children and adolescents school based evaluations may be adequate for identifying their learning differences. However, for other students, common academic evaluations and learning strategies are not sufficient to identify the underlying problems or to formulate effective educational plans. Many students have had repeated school-based evaluations or generic psychological/behavioral assessments that never make clear what the underlying problems are (Silver CH., et al., 2006). It becomes difficult to formulate effective strategies without a clear and detailed picture of those problems. School-based evaluations often rely heavily on summary scores. A child's abilities are more than the sum of his or her scores. Scores do not identify a child's abilities. Scores merely tell us how a child performed on a task relative to same-aged peers. Over-reliance on scores, without knowledge of brain-behavior relationships, often leads to misdiagnosis. General academic or cognitive scores do not indicate whether your child can persist at a task or pay attention, or how your child best processes information (Koziol, LK and Budding, D., *in press*). Many times a school-based evaluation or generic psychological evaluation will not find the underlying problems because they are sampling a limited domain of behaviors. These limited domains are often the domains that children with high functioning autism excel at. For example, a child with Asperger's syndrome or high functioning autism will often perform well on IQ tests or academic achievement tests.

A neuropsychological evaluation systematically assesses all the domains that effect school performance with an understanding of how these domains relate to each other. These domains include:

- cognitive ability
- attention
- learning
- memory
- language
- visual-spatial ability
- sensory-motor ability
- executive functioning
- social-emotional processes including social skills

## **What Is Executive Function?**

Executive functioning skills are skills that support many academic and life tasks. They include, but are not limited to planning, getting started (initiation), organization, problem-solving, persistence, flexibility, and self-regulation. Individuals with Asperger Syndrome and high functioning autism often have difficulty with these executive function skills. This keeps them from successfully using their intellectual abilities. People with these difficulties may not complete assignments, may complete them and not hand them in, may not know what their assignments are, and may not know how to get started or how to break down tasks into their smaller components. Executive function is an area seldom assessed by school-based or generic

psychological/behavioral evaluations. These skills are neurodevelopmental in nature. Problems with executive may indicate subtle dysfunctions in brain circuitry. Many parents, students and adults are frustrated by these behaviors and view them as emotional in nature or as a moral failing on the part of the child, adolescent or adult. These attitudes further reinforce low self-esteem and poor effort. Rather, it is important to understand that these are brain-based behaviors that the individual has weaknesses in. A neuropsychological evaluation should delineate the profile of strengths and weaknesses in executive functioning in order to build on the strengths and propose appropriate intervention for the weaknesses or deficits. Timely intervention is important because executive functioning deficits can and do persist past the school years and can affect independent functioning on a job and in social interactions. Sometimes parents in their frustration and worry have been their children's "executive functioners" in order to get them through the school years and high school graduation. This behavior is understandable in the face of fear of failure and difficulty to get your child to change. However, such behavior does not assist the child/adolescent/young adult to learn how to compensate and be independent further limiting life choices in several realms: occupational, social, knowing how to make effective life decisions despite being "smart," and knowing how and when to advocate for oneself.

### **Why Evaluate Language?**

Students with Autism Spectrum Disorders (ASDs) who are considered to be high functioning typically appear to be fluid with language. They often have good vocabulary, remember lots of information, and have good oral speaking ability. They will often score well on tests of basic language skills. However, some of these students may have subtle but real difficulties with higher order language and pragmatics. Pragmatic language is the social aspect of language. For example, turn taking behaviors and topic maintenance in conversation are aspects of pragmatic language. Higher order language refers to abilities such as understanding inferences, nuance, and ambiguity. It is important to assess these language abilities as they can affect reading comprehension, written expression and social interactions. As students progress in their schooling, the ability to utilize higher order language becomes more important and some children with HFA may start to have academic problems.

### **How Will a Neuropsychological Evaluation Be of Benefit?**

It is well-known that children with ASDs often receive several misdiagnoses before being correctly diagnosed. Most neurodevelopmental problems (reading disorders, learning disorders, attention deficit disorder etc.) have symptom overlap. For example, the inability to sustain one's attention to a boring task is a symptom of many neurodevelopmental problems not just ADHD. Without taking a thorough history and systematically sampling multiple domains, your child might receive a misdiagnosis. A neuropsychologist is trained to understand the correct questions to ask and tasks to give to arrive at the best diagnostic formulation.

A neuropsychologist integrates the findings from the domains discussed above, to arrive at an understanding of the brain behavior relationships and their impact on academic, behavioral, and life skills performance. School-based evaluations are often performed by multiple evaluators within their area of specialty (Speech, Education etc.). However, the results are seldom integrated into a greater understanding of how one domain affects another.

With this understanding, a neuropsychological evaluation should yield results that lead to an appropriate and effective educational plan or transition plan for an adolescent or young adult. It should help adults with the transition into the work world and help them understand their

strengths and their limitations in terms of job and career choice. For example, a person might have difficulty with multi-tasking and should not take a job that involves such intense levels of multi-tasking like being a pilot. A mere diagnosis is not sufficient. In the case of children and adolescents, it should give parents suggestions for how to help your child at home. There is no point in having such an extensive evaluation without it resulting in a detailed plan of how to approach your child educationally and behaviorally. A diagnosis is not sufficient to tell us what the individual needs. The plan should be based on the findings of the evaluation and should be of sufficient detail and clarity for parents, educators, and adults to understand the best methods to teach your individual child or to support independent adult functioning. It should include information about:

- Strengths and weaknesses
- How your child learns
- Recommended educational approaches
- Recommended strategies for abilities that support academic achievement and life skills such as social skills, pragmatic language, and executive function abilities.
- Recommended strategies for home
- Anticipated problems as academic demands change
- Recommended resources and referrals
- Steps for transition planning
- Occupational direction

### **My Adolescent is College-Bound. How Can a Neuropsychological Evaluation be Helpful?**

Colleges are held to a different standard for providing services and accommodations than are elementary, middle and high schools. Public schools are mandated to provide services to students who meet criteria under IDEA. Colleges and universities are providing services under ADA. It is not enough under ADA to have a diagnosis; one must demonstrate functional impairment to meet criteria under ADA. ADA gives students with disabilities the right to equal access to higher education. Specific accommodations are not mandated, and students and their families must then negotiate appropriate accommodations. (Some colleges are better equipped than others to provide necessary accommodations.)

To qualify for accommodations, most colleges and universities require a comprehensive evaluation that samples the domains of a neuropsychological evaluation, as indicated above. Adolescents with ASDs who are college-bound will typically look fine on intelligence and achievement testing alone, and will not demonstrate their actual functional impairments if only these types of tests are given. A complete neuropsychological evaluation should help colleges better understand the student's needs. It should help the student understand his or her own learning profile, strengths and weaknesses and be better prepared for self-advocacy.

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Ilene R. Solomon, Ph.D. has practiced psychology for twenty-five years. Much of her professional career has been devoted to helping children and their parents with a wide range of neurodevelopmental problems including Asperger Syndrome and high functioning autism as well as other learning and social learning problems. She specializes in the neuropsychological evaluation of developmental disorders as well as providing therapeutic assistance to parents, families, and children. She has a particular interest in the interface between evaluation and developing educational programming and consults to schools about Asperger Syndrome. She has worked in school, hospital and private practice settings and has taught on the university level. She has post-doctoral certificates in Neuropsychology and Organizational Development. She is an associate of the Institute for Cognitive Diversity at Bank Street College of Education in Manhattan. Her offices are in Nassau County and Manhattan. She can be reached at [irsphd@gmail.com](mailto:irsphd@gmail.com) and (516) 747-8583.