Dr. Moldover & Associates

Who Needs a Neuropsych?

Child neuropsychological evaluations can address four basic questions:

Is there a problem?

Child development is highly variable. Children mature and develop skills on different timetables. A child who demonstrates a delay or a challenging behavior may not actually be outside of the range of developmental variability. An evaluation can help to clarify whether or not there is a genuine concern.

What is the problem?

Learning and behavioral problems may be rooted in any number of underlying causes. An evaluation may help to clarify the actual diagnosis driving the concerns.

What do we do about the problem?

There are typically a wide variety of possible approaches for addressing any particular problem. An evaluation can lend insights into what is likely to be the most effective.

Are we making progress?

Developmental and educational gains can be hard to discern from one day to another. An evaluation can look at certain benchmarks and offer insight into whether interventions are yielding acceptable progress.

For information and a free copy of “Your Child’s Assessment and Diagnosis: A Guide for Parents” visit us online at www.drmoldover.com
NONVERBAL LEARNING DISABILITIES

CONFUSION OVER NLD
- At least 10 other descriptive names for symptoms similar to NLD in the literature.
- No developmental process confirmed.
- No agreed upon diagnostic criteria for entrance into a classification system, such as the DSM.
- Not specifically protected under educational law.

"DEFINING" NLD
- Developmental disorder
  - Strengths
    - Verbal skills
    - Reasoning
  - Weaknesses
    - Visual-spatial
    - Gross and fine motor skills
    - Executive functioning
    - Low Academic Skills
    - Social Emotional Functioning
DEVELOPMENT

- Developmental disorder
- Neuropsychological characteristics discernible by age 8 or 9 years
- Language Milestones
- Motor Milestones
- Tactile Perceptual Problems

VERBAL SKILLS

- Hallmark of individuals with NLD is the contrast between relatively strong verbal abilities and weak nonverbal abilities
- Verbal Memory > Visual Memory
- Extensive vocabulary
- Decline in verbal ability during adolescence
  - Progressive and neuronal aspects of language

VISUAL-SPATIAL SKILLS

- Core deficit is in visual-motor integration and visual-spatial ability
- Areas of difficulty:
  - Pattern construction
  - Spatial arrangement
  - Spatial memory
  - Spatial structural confusion
  - Navigating space
  - Display disoriented sense of time
GROSS AND FINE MOTOR SKILLS

- Bilateral difficulties with fine and gross motor skills and coordination
- Fine motor: tying shoelaces, buttoning, zipping, dressing, handwriting
- Gross motor:
  - Disorganized, clumsy and uncoordinated
  - Problems learning how to skip, ride a bike
  - Difficulty in gym class and with team sports

EXECUTIVE FUNCTIONING

- Frequently an area of difficulty
- Difficulties may be seen in following areas:
  - Slowing attention
  - Working memory
  - Cognitive shifting
  - Planning and organization
  - Understanding problem solving, concept formation and hypothesis testing
  - Inflexibility
  - Self-monitoring
  - Transitioning between activities

ACADEMICS

- Strong early learning
- Begin to struggle in 3rd or 4th grade
- Reading
  - Advanced reading over math skills
  - Word recognition generally age appropriate
  - Over time decoding skills become more advanced than comprehension skills
  - Difficulty with comprehension of complex written text (comprehending text, identifying theme, making inferences)
**ACADEMICS (CONTINUED)**

- Written expression
  - Difficulty with organization of ideas
  - Difficulty with physical act of writing
  - Spelling typically intact, with errors predominantly phonetically inaccurate

**MATH**

- Seven common types of math errors:
  - Spatial orientation errors: misaligning columns
  - Verbal arithmetical errors: misunderstanding the sign of operation or replacing small digits by decimal points
  - Procedures errors: failing to complete all the steps in a problem or completing them in the wrong order

**MORE MATH**

- Failure to shift psychological set errors: when a child gives a set of similar problems and fails to shift mental set when another type of problem occurs
- Graphomotor errors: when a child's handwriting is so poor that they cannot read their work correctly
- Memory errors: when a child cannot remember a particular math fact
- Judgment and reasoning errors: when children attempt to independently solve math problems that are beyond their skill level, or when they lack insight into appropriateness of answers
EVEN MORE MATH

- Difficulty with material that are visually overwhelming (charts, graphs, maps, number lines, homework sheets).
- Difficulty judging size, weight, and distance and with telling time using an analog clock.

SOCIAL-EMOTIONAL

- Typically results in problems with interpersonal perception, social judgment and social interactions.
- Difficulty with nonverbal communication (ambiguities, silences, inferences, humor, sarcasm, facial expression, tone, gestures).
- Difficulty maintaining appropriate personal space.
- Difficulties often lead to poor social skills and increased social isolation.

SOCIAL-EMOTIONAL

- At greater risk for experiencing low self-esteem and developing internalizing disorders.
- Possibly at increased risk for suicide as adults.
DIFFERENTIAL DIAGNOSIS

- NLD vs. Autism Spectrum Disorder
  - Individuals with ASD often have language impairment and demonstrate unusual patterns of communication, which is typically not present in NLD.
  - Individuals with Asperger's Syndrome often demonstrate narrow interests, where those with NLD do not.
  - Individuals with ASD tend to have more severe social deficits and do not seem to share social connections. Individuals with NLD ache social connections but have difficulty with the skills required for their interactions.

ETIOLOGY

- Still largely unexplained, but research suggests it is the result of right hemisphere dysfunctions.
- White matter anomalies are responsible for the defective processing of sensory or motor information, the ability to respond to changes in functional demands, and interhemispheric integration.
- Right hemisphere is responsible for visuo-spatial region, and the left hemisphere has more regulatory and task control, which produces a deficit in transfer information simultaneously.

ETIOLOGY (CONTINUED)

- Consequently, white matter dysfunction compromises the functioning of the right hemisphere more than the left.
- Damage in the development of the white matter pathway is thought to result in the manifestation of NLD. The more white matter that is impaired, the greater the likelihood of NLD.
- White matter disorder is common in children with documented white matter dysfunction (Williams Syndrome, Wiscardehers ADHD, early Hydrocephalus).