BRIEF INTERVENTIONS: LEARNING DISABLITIES
BI-PED PROJECT (BRIEF INTERVENTIONS: PEDIATRICS)
Emotional Health Committee Maryland Chapter American Academy of Pediatrics

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School is the "workplace" for children and adolescents. Successful school performance is essential for psychological and social growth. It is for these reasons that pediatricians must inquire about school and school performance at every well-child visit and, when possible, at acute care visits in between.

For clarification purposes, it is important to distinguish between learning disorders and learning disabilities. The medical model uses the term *learning disorder* and stresses a deficit in a specific academic skill. The educational and legislative model uses the term *learning disability* and tends to place focus not just on the specific skill involved but on the underlying processing problems.

Psychological and educational testing can establish the diagnosis of a learning disability. Standardized psychological testing typically examines the subtests of verbal and nonverbal abilities as well as memory and processing speed. Educational testing examines academic achievement. Learning disabilities may be identified when there are:
a) significant discrepancies within the subtests of psychological testing
b) significant delays in academic performance and/or
c) significant discrepancies between lower scores on academic performance and the child's potential ability reflected by higher scores on psychological testing

Recognizing the child with LD

- Incidence of Learning Disabilities (LD) is 8-10%.
- It is estimated that 50% of individuals with LD will have a co-existing condition such as ADHD. Children may also present with Oppositional Defiant Disorder, anxiety or depression.
    - Often ADHD is diagnosed first. Therefore, LD must always be considered when evaluating and managing a child with ADHD.

- LD may present as a behavior problem. Children with learning disabilities may cope by becoming the class clown, may become angry and oppositional due to frustration leading to difficulty with self-regulation, may feel anxious and overwhelmed or may simply give up and become withdrawn. Some children may remain quiet, hoping not to be noticed. Teachers and parents may become focused on the overt behaviors and not recognize the underlying learning problem.
- Children with LD may also present with recurrent somatic complaints such as headaches or abdominal pain or school refusal

The role of the pediatric practitioner in regard to children with LD is early identification, recognition of co morbid conditions and when appropriate, and referral for appropriate testing and intervention.

Schematic for Understanding Learning Disabilities:

- Input Disabilities: such as auditory perception or visual perception problems. Children with auditory perception problems may present with difficulty following directions (e.g. repeatedly asking "what?"), may need directions repeated and may display difficulty with oral comprehension. Children with visual perception problems may present with difficulty in letter recognition or make letter reversals. Children with perceptual problems should be screened for sensory deficits through audiometric and visual testing.

- Integration Disabilities: including sequencing, abstraction, and/or integration difficulties. Children with sequencing difficulty may have trouble with *temporal sequential ordering* such as learning days of the week or struggle to learn the alphabet. Children with *auditory or visual sequencing problems* may have difficulty following verbal or written directions in order or performing tasks in the correct order. *Abstraction* difficulty may present with difficulty "getting jokes" in the older child or adolescent or difficulty with dealing with nuances in discussion or when reading or writing.

  Organizational problems may interfere with the ability to organize information or thoughts when writing or speaking or with organizing the actions needed to carry out tasks. These individuals also may have difficulty organizing their environment and personal space (e.g., bedroom) or their schoolwork (e.g., notebook, backpack, desk). They may also have difficulty with organizing time and planning. This may

result in trouble preparing for exams and completing long term projects (e.g., science projects, term papers). These difficulties with organizing tasks, time or space are often referred to as "*Executive Function Disorders".*

- Memory Disabilities: including working, short-term, and long-term memory problems. Children with memory problems may forget directions or forget to complete or turn in homework. Working memory refers to the ability to hold several thoughts in memory at the same time. These individuals may experience problems in learning tasks such as multiplication or division that require performing several operations at the same time.

- Output Disabilities: both language and motor. Children with *language output* problems may display difficulty expressing thoughts verbally or communicating thoughts in writing. Children with *motor output problems* may display gross motor difficulties such as clumsiness or difficulty with sports. Fine motor difficulties may present with difficulty with tying shoes, hand writing, coloring, using scissors, or cutting food.

A Developmental Model of Learning – The brain continues its maturation process throughout childhood and adolescence. With each new period of maturation, the child is able to perform new or more complex tasks. If an area of the brain is "wired differently" or underdeveloped, the functions performed by this area will not develop as expected. Understanding the developmental progression of learning helps one to identify learning disabilities and to understand their impact on the child.

Learning to Read:

- PreK/Kindergarten: need to learn rapid letter recognition and phonics
- $1^{st}/2^{nd}$ Grade: learn to read (from sounding out and sight reading to fluent reading)
- $3^{rd}/4^{th}$ Grade: learn reading comprehension
- 5^{th} Grade: learning to read and retain longer, more complex material
- Middle School: shift from reading as a skill to reading to learn content
- High School: reading fluency is assumed; focus on content

Learning to Write:

- PreK/Kindergarten: develop motor skills and learn to form letters
- 1st/2nd Grade: learn to form letters correctly, on line and in the correct place, learn capitalization, early punctuation and early spelling
- 3rd/4th Grade: learn spelling, grammar, punctuation, capitalization and early spelling
- 5th Grade: learn to organize thoughts and write full complete answers
- Middle/High School: learn more complex organizational skills and write longer, more complex answers and reports

Learning to do Math:

- PreK/Kindergarten: learn to recognize and to form numbers; learn one to one correspondence
- 1st/2nd Grade: learn to concept of "base 10", learn the concept of "conservation of numbers," then learn addition and subtraction
- 3rd-5th Grade: learn multiplication and division, fractions and decimals
- Middle/High School: apply learned knowledge and progressively learn higher level math (* if there are reading comprehension difficulties, then word problems may be an issue)

Learning Organizational Skills:

- Early Elementary: learn basic routines and basic organizational skills
- Late Elementary: learn more complex routines and organizational skills
- Middle School: reading, writing and math fluency, learn to organize concepts and flow of thoughts into meaningful clusters
- High School: increasingly master greater demands of reading, writing and math fluency; learn to organize information to be learned and to be written

Executive Function Skills;

- Middle School: learn strategies for learning and time planning
- High School: develop increasingly more complex ability to analyze develop, and carry out learning tasks with effective

strategies; develop increasing ability for time planning and completing tasks in a timely way

Office Strategies to Identify Concerns for Learning Disabilities:

1. Identify risk factors for learning problems (not necessarily LD):
    - Medical History (i.e. prematurity, congenital anomalies, lead poisoning, head injury, in utero alcohol exposure, seizure disorder or other chronic health condition)
    - Social History (i.e. abuse or neglect, adoption, frequent moves)
    - Family History (i.e. school struggle or failure, LD/ADHD)
    - School History (i.e. school struggles from the start or in later grades or with specific topics, school absenteeism, repeated grades, avoiding homework) It is often helpful to obtain report cards and interim reports to review.
2. Office-based sources of information:
    - Brief screening tests are neither sensitive nor specific, but they may assist the pediatrician in delineating areas that need further exploration and evaluation. These might include grade-level reading, writing, and math samples.
    - Taking a good history, including a brief but detailed review of systems for learning and language disabilities is important to determine the need for further evaluation.
3. Review of systems for Learning Disabilities:
    - Based on the developmental model of learning described above, the authors have developed the following office based *Review of Systems* for learning disabilities (see Learning Disabilities Review of Systems Worksheet)

    - These questions can be asked of the child, with input from the parent if a learning disability is suspected

FINALIZING THE DIAGNOSIS OF A LEARNING DISABILITY: INTERVENTIONS FOR THE PEDIATRIC PRACTITIONER

(also see the Learning Disability Interventions Worksheet in the Learning Problems module)

If a learning disability is suspected based on the child's history or after using the screening questions outlined above, a child should be referred for psychoeducational or neuropsychological testing. The federal Individuals with Disabilities Education Act (IDEA) ensures services to all children with disabilities.

In order to facilitate the provision of testing or services by the school:

1. The pediatric clinician can write a letter to the school delineating his/her evaluation and concerns and ask the school to consider further evaluations such as psychoeducational testing, occupational therapy, physical therapy, speech pathology.
2. When indicated, pediatric practitioners can also write a letter to the school suggesting that a 504 plan might be helpful (see BI-PED module on ADHD for a Sample 504 letter). This letter should state the diagnosis and can suggest specific accommodations that may be helpful for the particular student. Such accommodations may include:
    - seating in proximity to the teacher and/or away from distractions
    - repeating directions and breaking directions into smaller units
    - reducing volume or complexity of homework tasks
    - providing for opportunities to be out of seat in an acceptable manner for the particular classroom
3. Parents can also be empowered to write a letter to the school requesting further evaluation (most schools will not initiate testing without a parent request). Parents can initiate evaluations at school for their children by discussing their concerns with the child's teacher or meeting with the head of the school screening team.
4. Consider attending IEP meetings (in person or via conference call) and/or assist parents by reviewing a child's IEP and testing.

5. If a learning disability is suspected, pediatric practitioners can also refer patients to community resources for further evaluation and treatments (psychoeducational testing, neuropsychological testing, speech, OT, tutoring, etc.). If the patient is being referred for testing privately, when appropriate, the letter can stress that such testing is "medically necessary to finalize the medical diagnosis and to assist in designing the necessary medical treatment plan". This may help facilitate coverage for testing by the patient's insurance plan.

Reference:

Guide to Learning Disabilities for Primary Care: How to Screen, Identify, Manage, and Advocate for Children with Learning Disabilities. Silver L, Silver D. American Academy of Pediatrics 2010
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