# LEARNING PROBLEMS AND DISORDERS

## KEY FACTS

- Approximately 5 percent of students in public schools in the United States are identified as having a learning disorder (Wolraich et al., 1996).
- It has been found that deficits in phonologic awareness are the most common type of reading deficit (Torgensen, 1996).
- Approximately 35 percent of juvenile offenders have learning disabilities (Casey and Keilitz, 1990).
- About 50 percent of youths with a history of substance abuse have reading problems (Bock, 1998).
- Children of parents with reading disabilities are eight times more likely than the general public also to have a reading problem (Coordinated Campaign for Learning Disabilities, 2001).

The terms "learning problem" and "learning disorder" generally refer to difficulty mastering basic academic skills such as reading, spelling, and arithmetic. Learning disorders have been defined as a significant discrepancy between academic achievement in a specific area (or subject) and general intelligence, although how large the discrepancy must be for a child or adolescent to qualify as having a learning disorder is open to interpretation (American Academy of Child and Adolescent Psychiatry, 1998). Children and adolescents with learning problems and disorders are often rejected by their peers. In addition to academic difficulties, they may have difficulty responding to social cues and may suffer from low self-esteem.

# DESCRIPTION OF SYMPTOMS

## Learning Problem

(Diagnostic code: V40.0)

*Adapted from DSM-PC. Selected additional information from DSM-PC is available in the appendix. Refer to DSM-PC for further description.*

Learning problems are learning difficulties that affect a child's or adolescent's functioning but are not severe enough to meet criteria for the diagnosis of a learning disorder.

### Infancy

- Learning problems are considered under the rubric of developmental delay in this age group

### Early Childhood

- Delays in recognition of letters and numbers, shapes, colors, sounds, and symbol associations
- Development in areas such as game playing, dressing, and toilet learning (i.e., not the precursors of academic activities) is within normal range

### Middle Childhood

- Underachievement in comparison to expectations based on measured intelligence
- Inconsistent academic performance from term to term
- Poor performance in some subjects
- Mild to moderate lack of interest in school

### Adolescence

- Weak reading skills
- Homework problems
- Organizational difficulties
- Failure in certain subjects
- Poor written and verbal skills, but not poor enough to qualify adolescent for having an academic disorder

The descriptions of learning disorders are similar to the developmentally based descriptions provided above for problems, but the manifestations described are more severe.

## Reading Disorder (Dyslexia)

(Diagnostic code: 315.00)

*Adapted from DSM-PC. Selected additional information from DSM-IV-TR is available in the appendix. Refer to DSM-PC and DSM-IV/DSM-IV-TR for full psychiatric criteria and further description.*

- Reading achievement, as measured by individually administered standardized tests of reading accuracy or comprehension, is substantially below that expected given the child's or adolescent's chronological age, measured intelligence, and education.
- The reading disturbance significantly interferes with academic achievement or daily activities that require reading skills.
- Reading difficulties exceed problems caused by any sensory deficit that may be present.
- Recent research on reading disorders indicates that problems of processing, such as phonemic decoding (breaking words into their component language sounds), are a key factor in reading disorders and

*(continued on next page)*

Description of Symptoms *(continued)*

### Reading Disorder (Dyslexia) *(continued)*

may be a more important diagnostic indication of a reading disorder than a discrepancy between cognitive and academic skills (Love and Webb, 1992; Shaywitz, 1996; Torgesen et al., 1994, as cited in American Academy of Child and Adolescent Psychiatry, 1998).

## Mathematics Disorder (Dyscalculia)

(Diagnostic code: 315.1)

*Adapted from DSM-PC. Selected additional information from DSM-IV-TR is available in the appendix. Refer to DSM-PC and DSM-IV/DSM-IV-TR for full psychiatric criteria and further description.*

- Mathematical ability, as measured by individually administered standardized tests, is substantially below that expected given the child's or adolescent's chronological age, measured intelligence, and education.
- The disturbance significantly interferes with academic achievement or daily activities that require mathematical ability.
- Difficulties in mathematical ability exceed problems caused by any sensory deficit that may be present.

## Disorder of Written Expression

(Diagnostic code: 315.2)

*Adapted from DSM-PC. Selected additional information from DSM-IV-TR is available in the appendix. Refer to DSM-PC and DSM-IV/DSM-IV-TR for full psychiatric criteria and further description.*

- Writing skills, as measured by individually administered standardized tests (or functional assessment of writing skills), are substantially below that expected given the child's or adolescent's chronological age, measured intelligence, and education.
- The disturbance significantly interferes with academic achievement or daily activities that require the composition of written texts (i.e., writing grammatically correct sentences and organized paragraphs).
- Difficulty acquiring writing skills exceeds problems caused by any sensory deficit that may be present.

## COMMONLY ASSOCIATED DISORDERS

### Attention Deficit Hyperactivity Disorder

(Diagnostic code: 314.xx)

Consider attention deficit hyperactivity disorder (ADHD) if the child or adolescent has problems paying attention, is impulsive, or is overactive.

### Communication Disorders

(Diagnostic code: 315.xx)

Communication disorders include expressive language disorders, mixed receptive-expressive language disorders, stuttering, and phonological disorder. Consider these disorders if the child or adolescent has difficulty understanding directions or expressing ideas in sentences, stutters, or has difficulty with articulation.

### Developmental Coordination Disorder

(Diagnostic code: 315.4)

*Developmental coordination disorder is a developmental delay in fine and/or gross motor functioning (e.g., difficulty with buttoning clothes, assembling puzzles, writing legibly, building models, playing ball and other sports; general clumsiness) not attributable to a physical condition or other mental disorder.*

### Poor Self-Esteem That in Severe Cases Can Result in Depressed Mood or Anxiety

(Diagnostic codes: 296.xx, depressed mood; 300.xx, anxiety)

## INTERVENTIONS

Children or adolescents who are later diagnosed with learning disorders frequently first present in primary care practice settings with concerns about academic performance and/or behavioral issues. Primary care health professionals, often in collaboration with the school, can play a key role in evaluating a child or adolescent with academic or behavioral difficulties and in recommending appropriate interventions. (See *Bright Futures Case Studies for Primary Care Clinicians:* Learning Disorders: The Tale of Tommy's Testing [Knight and Frazer, 2001] at http://www.pedicases.org.)

Children and adolescents with learning problems or disorders in reading, mathematics, or written expression may require highly systematic, individualized instruction in the area of deficit. Along with such instruction, the child or adolescent may benefit from modifications in the curriculum that facilitate his ability to use and enhance compensatory mechanisms (e.g., a teacher might allow a child or adolescent with spelling deficits and/or poor handwriting skills to use word-processing programs with spell checks). Instruction should build on the child's or adolescent's strengths as well as address his weaknesses. In addition to receiving specific instruction directed toward remediating the disorder, the child or adolescent should be encouraged to take part in activities that allow him the opportunity to excel.

### Child or Adolescent

1. The definition, etiology, and guidelines for diagnosis and treatment of learning problems and disorders are still evolving. It is recommended that primary care health professionals obtain a

family history of learning problems or disorders if they suspect that a child or adolescent may have a learning problem or disorder. In addition, primary care health professionals may find the following tools helpful in identifying children and adolescents who require further evaluation for possible learning problems or disorders: (1) the Ages and Stages Questionnaires (ASQ) (Bricker and Squires, 1999), (2) the Child Development Inventories (CDIs) (Ireton, 1992), and (3) the Parents' Evaluation of Developmental Status (PEDS) (Glascoe, 1997) (Filipek et al., 1999). If there are substantial, ongoing educational issues, a referral for a full psychological or neuropsychological assessment from the school or from other educational assessment specialists in the community is recommended.

In attempting to determine whether a child or adolescent has a learning problem or disorder, primary care health professionals may find it useful to look for the symptoms listed below (Wolraich et al., 1996). Because some of these symptoms overlap with those of mental retardation, the primary care health professional should consider referring the child or adolescent for psychometric testing. (See also the following Tool in the *Mental Health Tool Kit:* Tool for Families: Learning Disabilities: Common Signs, p. 143.)

### *Early Childhood*

- Has difficulty naming common objects
- Has difficulty understanding simple concepts (e.g., big vs. little; on vs. in)
- Has delayed recognition of letters and numbers, shapes, colors, sounds, and symbol association

- Cannot assemble simple puzzles or categorize objects
- Does not recognize colors by age 4–5; has difficulty learning color names
- Cannot recite the alphabet by age 4–5

### *Middle Childhood*

- Cannot count to 20 by age 5
- Does not associate sounds with letters; has difficulty learning phonics
- Spells poorly compared to same-age peers
- Has problems with written composition (e.g., narration, organization, grammar, punctuation) compared to same-age peers
- Does not acquire computational skills (adding and subtracting)
- May have difficulty understanding concepts like time
- Missequences syllables (e.g., "aminals" for "animals")
- Has difficulty remembering own address and telephone number

- Has problems with verbal sequences (e.g., placing months of the year or days of the week in correct order)
- Has difficulty remembering and executing multi-step directions (even two or three steps)
- Reverses letters (e.g., writes "b" for "d," "p" for "q") past age 7

### *Adolescence*

- Has weak reading skills
- Has weak organizational skills (e.g., has difficulty remembering homework, finding books)
- Fails or has pronounced difficulty in certain school subjects (e.g., history, foreign language, math)
- Cannot express thoughts in writing
- Cannot use quantitative skills in a functional manner (e.g., has difficulty applying arithmetic concepts to physics problems)

2. Explore for other difficulties, including medical conditions, that may be contributing to the problem or interfering with treatment. Consider in particular the following:
   - Attention deficit hyperactivity disorder (ADHD)
   - Communication disorders
   - Developmental coordination disorder
   - Poor self-esteem leading to depressed or anxious mood
   - Underlying conditions that can cause learning difficulties (e.g., Turner syndrome, neurofibromatosis, significant anemia)
3. Discuss with parents the benefit of training children in phonological awareness (the ability to segment, blend, and otherwise manipulate the sounds of spoken language). Encourage parents to help their child use sounds as he learns to read and to talk to their child's teachers about how to best help their child with reading. Training young children who are learning to read in phonological awareness may help prevent some children with reading problems from developing more serious disorders.
4. To support a child's or adolescent's interest in learning, encourage the child or adolescent and the family to work with community or school librarians to identify appropriate materials (e.g., books on tape, reading material appropriate for the child's or adolescent's skill level, videotapes, computer learning games).
5. Children and adolescents with learning problems and disorders may experience low self-esteem. Talk with the child or adolescent in developmentally appropriate language about learning problems and disorders and their treatment. Help the child or adolescent identify academic and other areas of strength, and encourage him to pursue activities in which he can excel.
6. Help to ensure that the child or adolescent is not penalized (e.g., prohibited from joining a sports team or a club) because of low grades in the area of disability.

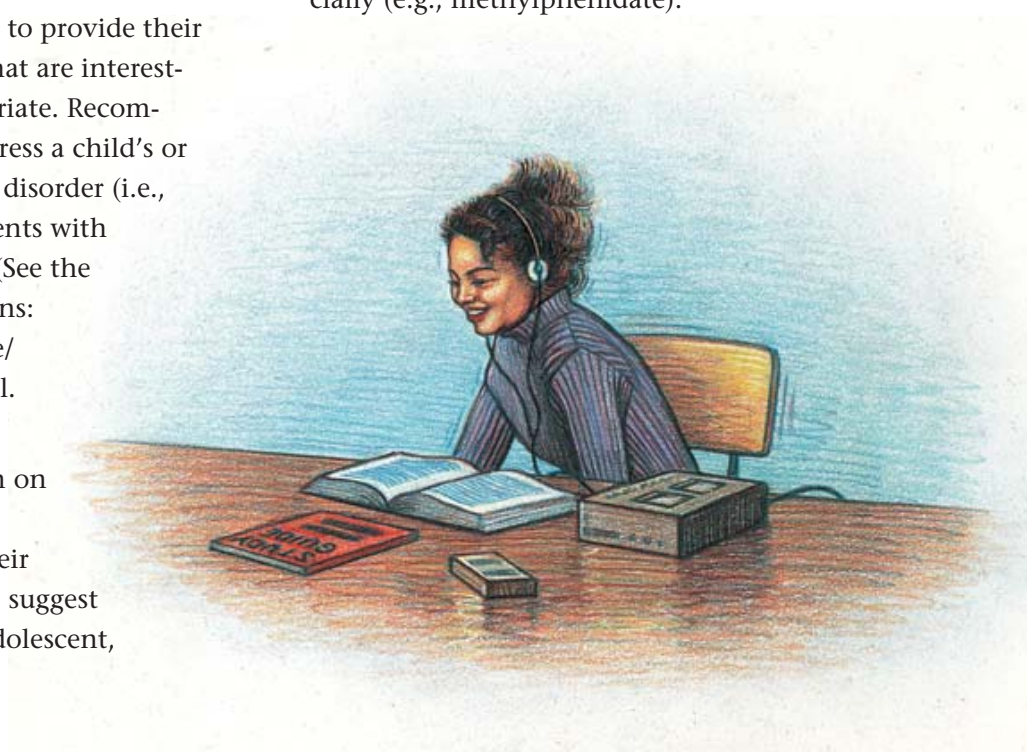
## Family

1. Ensure that parents have a practical understanding of learning problems and disorders. Answer any questions and address any concerns parents may have about their child's or adolescent's learning problem or disorder. (See Tool for Families: Learning Disabilities: Common Signs, *Mental Health Tool Kit,* p. 143.)

2. Support parents in helping their child or adolescent identify and maximize areas of strength and ability. Encourage parents to provide opportunities for their child's or adolescent's involvement in activities in which she can excel (e.g., sports, music, model building). Focusing on a child's or adolescent's strengths and areas of success will help her maintain self-esteem.
3. Educate parents about the process of requesting a comprehensive evaluation of their child's or adolescent's learning needs through the public school system. (See #3 in Community and School, p. 258, for further discussion.)
4. Encourage parents who have learning difficulties themselves to use what they have learned from their own experiences to support their child's or adolescent's learning and sense of connectedness to school.
5. Encourage parents to read to their child or adolescent beginning in infancy and to provide their child or adolescent with books that are interesting and developmentally appropriate. Recommend books that specifically address a child's or adolescent's learning problem or disorder (i.e., stories about children or adolescents with learning problems or disorders). (See the following Web sites for suggestions: http://www.ldonline.org/kidzone/read-up.html; http://www.ldanatl.org/store.)
6. Provide parents with information on activities they can do at home or resources they can use to help their child or adolescent. For example, suggest that they read to their child or adolescent, provide her with books on tape, use a picture dictionary, obtain a word-processing program with spell check, or teach the child to use a calculator.
7. Provide parents with information about parent and advocacy organizations. (See Tool for Families: Learning Disabilities: An Action Plan, *Mental Health Tool Kit,* p. 145.)

## Community and School

1. Following guidelines for confidentiality, and after obtaining appropriate permission, address any concerns that school personnel may have about the child's or adolescent's health or medical conditions.
2. After obtaining appropriate permission, communicate with school personnel about any medications that might affect a child's or adolescent's learning adversely (e.g., phenobarbital) or beneficially (e.g., methylphenidate).



3. For children and adolescents demonstrating learning difficulties in school, the first step is to determine the extent of the learning difficulties by conducting psychometric testing. Such testing should be available through the public schools and should take place in a timely manner. In each state, clear guidelines for providing such testing have been developed based on the federal requirements in the Individuals with Disabilities Education Act (IDEA).

   It is important for primary care health professionals to understand regulations concerning testing and special education services so that they can advise parents, thereby helping parents act as effective advocates for their child or adolescent. For example, in some states, parents may be required to request testing in writing and to indicate that they are aware of the time frame within which the testing should occur. Some parents may appreciate assistance from the primary care health professional in contacting the school. Ensure that parents know that their child or adolescent may also qualify for services under Section 504 of the Rehabilitation Act.

   For further information about eligibility and services, families can consult the school's special education coordinator, the local school district, the state department of education's special education division, the U.S. Department of Education's Office of Special Education Programs (http://www.ed.gov/offices/OSERS/OSEP), the IDEA '97 Web site (http://www.ed.gov/offices/OSERS/IDEA), or the U.S. Justice Department's Civil Rights Division (http://www.usdoj.gov/crt/edo).

   For parents who choose not to use the public school system, for those who want a second opinion after their child or adolescent has been tested, and for those whose child's or adolescent's case is complex or confusing, it is helpful to keep a list of alternative sources for evaluation. These sources may include psychologists specializing in educational testing and interdisciplinary clinics that assess children and adolescents for school problems.

4. Review copies of the child's or adolescent's psychometric assessments, Individualized Education Program (IEP), and achievement test scores to help the family monitor the school services received and their child's or adolescent's progress. (See Tool for Families: Individualized Education Program [IEP] Meeting Checklist, *Mental Health Tool Kit,* p. 120.) Consider participating in school conferences or IEP planning meetings for the child or adolescent.

5. Recommend occupational and/or physical therapy evaluations for children and adolescents with poor coordination.

6. With permission from the family, maintain ongoing contact with the school about a child's or adolescent's progress (e.g., a 5-minute telephone call to a school guidance counselor or teacher can provide helpful information about a child's or adolescent's functioning).

## Resources for Families

Council for Exceptional Children (CEC)
Division for Learning Disabilities (DLD)
1920 Association Drive
Reston, VA 22091-1589
Phone: (703) 620-3660
Web site: http://www.dldcec.org

Council for Learning Disabilities (CLD)
P.O. Box 40303
Overland Park, KS 66204
Web site: http://www.cldinternational.org

International Dyslexia Association (IDA)
8600 LaSalle Road
Chester Building, Suite 382
Baltimore, MD 21286-2044
Phone: (410) 296-0232
Web site: http://www.interdys.org

LD OnLine
Web site: http://www.ldonline.org

LD OnLine is a service of the Learning Project at WETA, Washington, DC, in association with the Coordinated Campaign for Learning Disabilities.

Learning Disabilities Association of America
4156 Library Road
Pittsburgh, PA 15234-1349
Phone: (412) 341-1515
Web site: http://www.ldanatl.org

National Center for Learning Disabilities
381 Park Avenue South, Suite 1401
New York, NY 10016
Phone (information and referral service):
(888) 575-7373
Web site: http://www.ncld.org

National Information Center for Children and Youth with Disabilities (NICHCY)
P.O. Box 1492
Washington, DC 20013
Phone: (800) 695-0285
Web site: http://www.nichcy.org

Schwab Foundation for Learning
1650 South Amphlett Boulevard, Suite 300
San Mateo, CA 94402
Phone: (800) 230-0988
Web site: http://www.schwablearning.org

## Selected Bibliography

American Academy of Child and Adolescent Psychiatry. 1998. Practice parameters for the assessment and treatment of children and adolescents with language and learning disorders. *Journal of the American Academy of Child and Adolescent Psychiatry* 37(10Suppl.): 46S–62S.

American Psychiatric Association. 1994. *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.) (DSM-IV). Washington, DC: American Psychiatric Association.

American Psychiatric Association. 2000. *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision) (DSM-IV-TR). Washington, DC: American Psychiatric Association.

Bock R. 1998. *Why Children Succeed or Fail at Reading: Research from NICHD's Program in Learning Disabilites* [fact sheet]. Rockville, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute of Child Health and Human Development. Web site: http://www.nichd.gov/publications/pubs/readbro/htm.

Bricker D, Squires J. 1999. *The Ages and Stages Questionnaires* (2nd ed.). Baltimore, MD: Paul H. Brookes.

Casey P, Keilitz I. 1990. Estimating the prevalence of learning disabled and mentally retarded juvenile

offenders: A meta-analysis. In Leone PE, ed., *Understanding Troubled and Troubling Youth* (pp. 82–101). Newbury Park, CA: Sage Publications.

Coordinated Campaign for Learning Disabilities. 2001. Common Questions. In Coordinated Campaign for Learning Disabilities [Web site]. Cited January 14, 2002; available at http://www.aboutld.org/questions.html.

Filipek PA, Accardo PJ, Baranek GT, et al. 1999. The screening and diagnosis of autistic spectrum disorders. *Journal of Autism and Developmental Disorders* 29(6):439–484.

Glascoe FP. 1997. *Parents' Evaluations of Developmental Status (PEDS)*. Nashville, TN: Ellsworth & Vandermeer.

Ireton H. 1992. *Child Development Inventories*. Minneapolis, MN: Behavior Science Systems.

Knight JR, Frazer C. 2001. Learning disorders: The tale of Tommy's testing. In Knight JR, Frazer C, Emans SJ, eds., *Bright Futures Case Studies for Primary Care Clinicians: Child Development and Behavior*. Boston, MA: Bright Futures Center for Education in Child Growth and Development, Behavior, and Adolescent Health. Web site: http://www.pedicases.org.

Torgensen JK. 1996. A model of memory from an information processing perspective: The special case of phonological memory. In Lyon GR, Krasnegor NA, eds., *Attention, Memory and Executive Function* (pp. 157–184). Baltimore, MD: Paul H. Brookes.

Wolraich ML, Felice ME, Drotar D, eds. 1996. *The Classification of Child and Adolescent Mental Diagnoses in Primary Care: Diagnostic and Statistical Manual for Primary Care (DSM-PC) Child and Adolescent Version*. Elk Grove Village, IL: American Academy of Pediatrics.