

Learning Disorders

Also called Specific Learning Disabilities (SLDs)

Description of the Disability

Learning Disorder (LD) is an umbrella term for a group of related cognitive disorders involving the ability to acquire and use information through listening, speaking, or reading, and the related ability to use information through writing or mathematical reasoning. People with LD have problems storing, processing, and producing information. In some cases, these problems initially seem to be sensory problems with hearing or vision, but the individual's senses test as normal.

Researchers do not know what causes LD, but it seems to involve difficulty integrating various functions in the brain. LD can run in families, so there is a hereditary component but it may also involve other factors, including pre-natal difficulties, infant or toddler head injuries, and child abuse.

LD symptoms can vary significantly from person to person, and are generally chronic but not progressive. A child with LD will not outgrow it, although he or she may learn compensation strategies to partially overcome it. LD does not include learning issues caused by environmental or economic disadvantage, visual or hearing impairments, mental retardation, or mental disorders. However, LD may coexist with those disabilities. The learning and processing difficulties of LD are not related to intelligence or sensory impairment, and individuals with LD typically have average to above average IQ scores.

There are several types of learning disorder (see below) based on what particular cognitive skills are affected. Diagnosing a particular disorder means documenting a significant deficit in the person's achievement in one of these skill areas compared to the achievement predicted based on the person's overall intelligence. The DSM IV defines a significant deficit (for this situation) as more than 2 standard deviations below the norm. In general, the person will have normal cognitive functions and a normal IQ except for the particular cognitive skills affected by the learning disorder.

There are many different ways of classifying learning disorders but most of the classifications group the disorders functionally in terms of academic skills affected.

- **Reading Disorder** - difficulty with comprehension, reading aloud, or word recognition
- **Math Disorder** - difficulty performing sequential operations, understanding concepts, recognizing numbers, symbols
- **Disorder of Written Expression** – difficulty with grammar, punctuation paragraph construction, spelling, handwriting
- **Other** - low level difficulties in the above that cumulatively lower ability, or difficulties in other important areas

The different classification systems for LD usually elaborate some of these. The DSM describes Math Disorders as containing at least 4 components; linguistic (naming, decoding math symbols), perceptual (reading symbols, understanding groupings), attention (copying, following procedures), and mathematical (understanding steps, counting, multiplying). NIMH classification for learning disorders has many subcategories. In particular, NIMH's system adds a **Development Language Disorder** with subcategories for difficulty speaking, difficulty hearing (the conceptual or comprehension part of hearing, not the sensory part), and difficulty with expression (difficulty choosing words). Other classification systems may include **Reasoning Disorder** (difficulty organizing and integrating thoughts), **Memory Disorder** (difficulty remembering information and instructions), and **Coordination Disorder**.

It is significant that these labels mostly involve school-related academic skills. Although the symptoms of learning disorder can show up in early infancy, usually the problems are not noticed until the child enters formal schooling and is challenged with increasingly abstract assignments. Because of this association with school, people tend to think of LD as a childhood disorder, but the symptoms usually remain throughout adulthood and impact activities of daily life in various ways.

In addition to the functional, diagnostic symptoms, people with learning disorders may experience related, secondary symptoms. These can be grouped into four categories: academic, cognitive, physical, and behavioral/social.

Possible Academic Symptoms:

- Lower performance on group tests compared to peers
- Decrease in reading and writing abilities over time
- Difficulty copying
- Need extra time completing work
- Easily confused by instructions
- Difficulty with sequencing tasks

Possible Physical Symptoms:

- General awkwardness
- Poor visual-motor coordination
- Easily distracted
- Difficulty concentrating
- Lack of hand preference or mixed dominance

Possible Cognitive Symptoms:

- Difficulty discriminating size, shape, or color
- Difficulty with concepts of time
- Distorted body image
- Poor organizational skills
- Difficulty with abstract reasoning, problem-solving
- Disorganized thinking
- Poor short-term or long-term memory
- Delay reaching development milestones

Possible Behavioral/Social Symptoms:

- Impulsive behavior
- Difficulty dealing with frustration or change
- Poor peer relationships
- Low self-esteem, feelings of failure
- Self-defeating behavior
- Frustration
- Overly excitable during group play
- Poor social judgment
- Inappropriate or excessive displays of affection
- Rapid mood changes
- Difficulty making decisions

The number of symptoms that an individual displays is NOT correlated to the severity of that individual's disorder.

A person with LD may also experience problems with some social skills, creating challenges in maintaining employment for adults with LD. Most people fired from jobs are fired for poor attitude, inappropriate behavior, and poor interpersonal skills. Individuals with LD may have difficulty interpreting social situations, understanding humor, reading body language, using appropriate language, and interpreting the moods of others. This can make them appear to be insensitive to others' feelings. If an individual with LD has little work experience (especially if they are just coming out of high school), they may have difficulty with the differences in appropriate behavior for work settings, social settings, and intimate relationship settings. These problems may impact on a person's family life, social life, self-control, self-esteem, home management skills, money management skills, and independent living skills.

LD may coexist with Attention Deficit / Hyperactivity Disorder (see entry on ADHD), but they are separate disabilities. LD may also coexist with Conduct Disorder, Oppositional Defiant Disorder, Anxiety Disorders, Major Depressive Disorder, or Dysthymic Disorder (see entries). For adults with LD, a diagnosis of a coexisting Personality Disorder may be added (personality disorders are not diagnosed in children). Many individuals with LD experience significant failures in school or work before their disability is identified, which can cause self-esteem problems.

Incidence Statistics

- Estimates of the number of individuals in the US with LD range from 5-20% of the population
- Some researchers believe that individuals with LD represent the largest disability population in the US
- 5% of school children age 6-15 receive services for LD
- Some researchers believe that 50% or more of low literacy adults have LD
- Men with LD outnumber women with LD 5 to 1
- Difficulty with language and reading is the most common form of LD. Up to 80% of students with LD have difficulty reading.

- Most individuals with LD who are successful in college have tried college more than once
- The number of college students self-reporting LD doubled between 1985 and 1995, while self-reports of most other disabilities remained steady
- LD can run in families, suggesting a possible genetic component
- It is estimated that 20% of people with LD have ADHD
- Common terms associated with LD include **Dyslexia** (difficulty processing writing), **Dysgraphia** (difficulty writing), **Dyscalcula** (difficulty with math), and **Dyspraxia** (difficulty with motor coordination)

Common Treatments, Medications, and Side Effects

There are no approved medications for learning disorders. Instead, treatment focuses on coping skills and environmental accommodations. Typically, a learning styles inventory is conducted to identify appropriate accommodations. Following that, the individual will experiment with different techniques and figure out what works for them. Since learning disorders are most commonly identified in childhood, most of the accommodations are related to school tasks.

Common assistive approaches used in classrooms include:

- Allowing extra time for careful reading or re-reading
- Providing the same information in different media formats, such as taped textbooks, text-to-speech automated reading systems, multimedia computer programs, and captioned videotape.
- Using highlighters, index cards, color-coding, graph paper for organizing information
- Having others read aloud to them
- Composing on a computer with spell-check and related software
- Dictating into a tape recorder for note-taking
- Having another student take class notes with carbon paper and then share the copy
- Allowing verbal rather than written reports
- Providing written instructions and demonstrations to augment verbal instructions
- FM amplification (teacher wears broadcasting microphone) to reduce distractions
- Audio taping lectures (especially with tape recorder with variable-speed playback)
- Digital (or even talking) clocks, watches, timers as reminders
- Headphones/earplugs to reduce background noises and help the person stay focused
- Using large display calculators
- Using talking or printing calculators (or similar software)

Possible Functional Issues

Possible functional issues include the following:

- Distractibility
- Difficulty with sustained concentration
- Difficulty with reading/writing/spelling
- Difficulty with math skills
- Difficulty handling money
- Difficulty with time management
- Difficulty following directions
- Difficulty with judgment/decision making
- Difficulty planning
- Difficulty with language comprehension or expression
- Difficulty with dealing with criticism, pressure, or change
- Difficulty with impulse control
- Reduced social skills
- Low self-esteem, difficulty advocating for themselves

Initial Interview Considerations

Initial Questions

- How do they think their disability affects them in school, work or everyday activities?
- What specific issues do they think they have? What issues would cause potential problems for them at work?
- How would they describe their learning style? What works best for them?
- What did they do well in at school and what did they have trouble with?
- What kinds of problems do they think LD has caused with social relationships? How has it affected their relationships with others, including family?
- How often, if ever, do friends say they are getting too loud or boisterous? (gets at social skills and response to social situations)
- What sorts of things distract them most? Sounds? Other people?
- What problems do they have keeping a checkbook, filling out checks, filling out forms?
- What problems, if any, do they have counting money?

- What sorts of tools help them write better?
- What medications are they taking? Are there any side effects?
- What is a typical weekend like for them? (gets at other interests, hobbies, skills)
- What clubs, church groups, or teams do they belong to?

Initial Observations

- Do they seem to have difficulty following the conversation?
- Over the following weeks, do they carry out their agreed tasks?
- How does their self-image seem? Do they seem to be confident, insecure, depressed?
- What compensating skills do they use during the interview, if any? (This might include simple things such as a tape recorder or note pad, asking to have information repeated, or using a highlighter on printed material.)

Interview Accommodations (if any)

- Offer them a chance to take written materials home and read them more carefully
- Offer to have someone read the materials aloud into a tape recorder, either ahead of time or for pick-up later.
- Provide an electronic copy of written materials if available
- Provide them plenty of time to fill out any forms
- Double-check any forms they fill out to make sure they completed the forms accurately
- Follow-up a week later to see if they have any questions about the materials or process

Possible Accommodations and Assistive Technology

- Flexible work deadlines to allow extra time for reading or writing
- Notebooks, highlighters, and other paper-based organizers
- Having co-workers read memos and other documents aloud
- Having a co-worker proofread written documents
- A computer (possibly laptop) with spell-check, word prediction, and related software.
- Personal data management software that allows key-word search and retrieval of files
- Hand-held talking electronic devices with dictionary, thesaurus, etc.
- Speech recognition software (speech-to-text)
- Screen reader software (text-to-speech)
- Tape recorder for notes and dictation
- Providing memos and documents in electronic or large print formats

- Job coach to help adjust to work environment in school-to-work transitions
- Training in time management
- Reduced class load if taking college courses

Career Planning Issues

- Determine their specific learning issues and learning style. A learning styles inventory may be useful.
- Examine the successes the individual has had in school, in social relationships, and in independent living. Many individuals with LD become very creative and resourceful in meeting challenges - potentially useful skills to consider when helping them make career choices.
- Overall intelligence for the individual may be very high, even if the individual has to spend extra time acquiring and organizing information. Many individuals with LD have become successful professionals in business, science, and other fields.
- Determine if there are issues with social relationships and behavior. This may be related to a limited work history or immaturity. In particular, assess whether the individual has issues with impulse control, distractibility, evaluating consequences of their behavior.
- Discuss how their coping skills from school (or other jobs) may need to change in the new job. They may need support and time for making those changes
- Consider setting short-term, realistic goals to help build the individual's confidence in job seeking and career building.
- Many individuals with LD are interested in taking college classes, and often they can do very well in college with adequate supports. It may be helpful to set short-term goals, such as an initial course or two to let them test their own abilities. It can also be useful to review their past academic record and any standardized admissions scores such as SAT, ACT, GRE, or MCAT to identify areas of strength and weakness.
- Include job-keeping skills in planned services. The individual may have difficulty with inappropriate behavior and attitudes, with reading facial and body language, or with work culture. They may also face future challenges if job duties change. Often individuals with LD are reluctant to ask for help until it is too late. Supports should be in place in advance.
- For high school aged individuals, a Work-First approach should be discussed. This approach focuses on going to work immediately rather than taking post-secondary training towards achieving a long-term career goal. Work-first allows the individual time to adjust to differences in the world of work versus school. Often the compensating skills they use in school are different from those needed in the work place. In addition they have time to learn more about jobs and possible careers. Later they can decide if they wish to attend post secondary training and pursue a larger career goal. Even volunteer work can be very useful.
- When job hunting, have the individual request job descriptions before applying for jobs. He/she should study those and be prepared to describe how they can fulfill the duties.

- Discuss other responsibilities such as writing checks, filling out tax forms, writing shopping lists, etc. to determine if those will be challenges. The individual may need initial support in dealing with those tasks if they don't have prior experience.

Emerging Issues

- Root causes of LD, specific types of LD
- Awareness of LD as separate from mental retardation, low IQ, or illiteracy, or TBI
- Useful accommodations

Additional Information Resources

- LD Online: www.ldonline.org/ld_indepth/adult/index.html
- National Center for Learning Disabilities: www.nclld.org/
- Learning Disabilities Association of California: ldaca.org/