

## What Is a Learning Disability?

Unlike other disabilities, such as paralysis or blindness, a learning disability (LD) is a hidden handicap. A learning disability doesn't disfigure or leave visible signs that would invite others to be understanding or offer support. A woman once blurted to Wallace, "You seem so intelligent--you don't *look* handicapped!"

LD is a disorder that affects people's ability to either interpret what they see and hear or to link information from different parts of the brain. These limitations can show up in many ways--as specific difficulties with spoken and written language, coordination, self-control, or attention. Such difficulties extend to schoolwork and can impede learning to read or write, or to do math.

Learning disabilities can be lifelong conditions that, in some cases, affect many parts of a person's life: school or work, daily routines, family life, and sometimes even friendships and lay. In some people, many overlapping learning disabilities may be apparent. Other people may have a single, isolated learning problem that has little impact on other areas of their lives.

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## What Are the Types of Learning Disabilities?

"Learning disability" is not a diagnosis in the same sense as "chickenpox" or "mumps." Chickenpox and mumps imply a single, known cause with a predictable set of symptoms. Rather, LD is a broad term that covers a pool of possible causes, symptoms, treatments, and outcomes. Partly because learning disabilities can show up in so many forms, it is difficult to diagnose or to pinpoint the causes. And no one knows of a pill or remedy that will cure them.

Not all learning problems are necessarily learning disabilities. Many children are simply slower in developing certain skills. Because children show natural differences in their rate of development, sometimes what seems to be a learning disability may simply be a delay in maturation. To be diagnosed as a learning disability, specific criteria must be met.

The criteria and characteristics for diagnosing learning disabilities appear in a reference book called the DSM (short for the *Diagnostic and Statistical Manual of Mental Disorders*). The DSM diagnosis is commonly used when applying for health insurance coverage of diagnostic and treatment services.

Learning disabilities can be divided into three broad categories:

- Developmental speech and language disorders
- Academic skills disorders
- "Other," a catch-all that includes certain coordination disorders and learning handicaps not covered by the other terms

Each of these categories includes a number of more specific disorders.

### Developmental Speech and Language Disorders

Speech and language problems are often the earliest indicators of a learning disability. People with developmental speech and language disorders have difficulty producing speech sounds, using spoken language to communicate, or understanding what other people say. Depending on the problem, the specific diagnosis may be:

- Developmental articulation disorder
- Developmental expressive language disorder
- Developmental receptive language disorder

***Developmental Articulation Disorder*** -- Children with this disorder may have trouble controlling their rate of speech. Or they may lag behind playmates in learning to make speech sounds. For example, Wallace at age 6 still said "wabbit" instead of "rabbit" and "thwim" for "swim." Developmental articulation disorders are common. They appear in at least 10 percent of children younger than age 8. Fortunately, articulation disorders can often be outgrown or successfully treated with speech therapy.

***Developmental Expressive Language Disorder*** -- Some children with language impairments have problems expressing themselves in speech. Their disorder is called, therefore, a developmental expressive language disorder. Susan, who often calls objects by the wrong names, has an expressive language disorder. Of course, an expressive language disorder can take other forms. A 4-year-old who speaks only in two-word phrases and a 6-year-old who can't answer simple questions also have an expressive language disability.

***Developmental Receptive Language Disorder*** -- Some people have trouble understanding certain aspects of speech. It's as if their brains are set to a different frequency and the reception is poor. There's the toddler who doesn't respond to his name, a preschooler who hands you a bell when you asked for a ball, or the worker who consistently can't follow simple directions. Their hearing is fine, but they can't make sense of certain sounds, words, or sentences they hear. They may even seem inattentive. These people have a receptive language disorder. Because using and understanding speech are strongly related, many people with receptive language disorders also have an expressive language disability.

Of course, in preschoolers, some misuse of sounds, words, or grammar is a normal part of learning to speak. It's only when these problems persist that there is any cause for concern.

### **Academic Skills Disorders**

Students with academic skills disorders are often years behind their classmates in developing reading, writing, or arithmetic skills. The diagnoses in this category include:

- Developmental reading disorder
- Developmental writing disorder
- Developmental arithmetic disorder

**Developmental Reading Disorder** -- This type of disorder, also known as dyslexia, is quite widespread. In fact, reading disabilities affect 2 to 8 percent of elementary school children.

When you think of what is involved in the "three R's"--reading, 'riting, and 'rithmetic--it's astounding that most of us do learn them. Consider that to read, you must simultaneously:

- Focus attention on the printed marks and control eye movements across the page
- Recognize the sounds associated with letters
- Understand words and grammar
- Build ideas and images
- Compare new ideas to what you already know
- Store ideas in memory

Such mental juggling requires a rich, intact network of nerve cells that connect the brain's centers of vision, language, and memory.

A person can have problems in any of the tasks involved in reading. However, scientists found that a significant number of people with dyslexia share an inability to distinguish or separate the sounds in spoken words. Dennis, for example, can't identify the word "bat" by sounding out the individual letters, b-a-t. Other children with dyslexia may have trouble with rhyming games, such as rhyming "cat" with "bat." Yet scientists have found these skills fundamental to learning to read. Fortunately, remedial reading specialists have developed techniques that can help many children with dyslexia acquire these skills.

However, there is more to reading than recognizing words. If the brain is unable to form images or relate new ideas to those stored in memory, the reader can't understand or remember the new concepts. So other types of reading disabilities can appear in the upper grades when the focus of reading shifts from word identification to comprehension.

**Developmental Writing Disorder** -- Writing, too, involves several brain areas and functions. The brain networks for vocabulary, grammar, hand movement, and memory must all be in good working order. So a developmental writing disorder may result from problems in any of these areas. For example, Dennis, who was unable to distinguish the sequence of sounds in a word, had problems with spelling. A child with a writing disability, particularly an expressive language disorder, might be unable to compose complete, grammatical sentences.

**Developmental Arithmetic Disorder** -- If you doubt that arithmetic is a complex process, think of the steps you take to solve this simple problem: 25 divided by 3 equals ?

Arithmetic involves recognizing numbers and symbols, memorizing facts such as the multiplication table, aligning numbers, and understanding abstract concepts like place value and fractions. Any of these may be difficult for children with developmental arithmetic disorders. Problems with numbers or basic concepts are likely to show up early. Disabilities that appear in the later grades are more often tied to problems in reasoning.

Many aspects of speaking, listening, reading, writing, and arithmetic overlap and build on the same brain capabilities. So it's not surprising that people can be diagnosed as having more than one area of learning disability. For example, the ability to understand language underlies learning to speak. Therefore, any disorder that hinders the ability to understand language will also interfere with the development of speech, which in turn hinders learning to read and write. A single gap in the brain's operation can disrupt many types of activity.

### **"Other" Learning Disabilities**

The DSM also lists additional categories, such as "motor skills disorders" and "specific developmental disorders not otherwise specified." These diagnoses include delays in acquiring language, academic, and motor skills that can affect the ability to learn, but do not meet the criteria for a specific learning disability. Also included are coordination disorders that can lead to poor penmanship, as well as certain spelling and memory disorders.

### **Attention Disorders**

Nearly 4 million school-age children have learning disabilities. Of these, at least 20 percent have a type of disorder that leaves them unable to focus their attention.

Some children and adults who have attention disorders appear to daydream excessively. And once you get their attention, they're often easily distracted. Susan, for example, tends to mentally drift off into a world of her own. Children like Susan may have a number of learning difficulties. If, like Susan, they are quiet and don't cause problems, their problems may go unnoticed. They may be passed along from grade to grade, without getting the special assistance they need.

In a large proportion of affected children--mostly boys--the attention deficit is accompanied by hyperactivity. Dennis is an example of a person with attention deficit hyperactivity disorder--ADHD. They act impulsively, running into traffic or toppling desks. Like young Dennis, who jumped on the sofa to exhaustion, hyperactive children can't sit still. They blurt out answers and interrupt. In games, they can't wait their turn. These children's problems are usually hard to miss. Because of their constant motion and explosive energy, hyperactive children often get into trouble with parents, teachers, and peers.

By adolescence, physical hyperactivity usually subsides into fidgeting and restlessness. But the problems with attention and concentration often continue into adulthood. At work, adults with ADHD often have trouble organizing tasks or completing their work. They don't seem to listen to or follow directions. Their work may be messy and appear careless.

Attention disorders, with or without hyperactivity, are not considered learning disabilities in themselves. However, because attention problems can seriously interfere with school performance, they often accompany academic skills disorders.

### **How Are Learning Disabilities Formally Diagnosed?**

By law, learning disability is defined as a significant gap between a person's intelligence and the skills the person has achieved at each age. This means that a severely retarded 10-year-old who speaks like a 6-year-old probably doesn't have a language or speech disability. He has mastered language up to the limits of his intelligence. On the other hand, a fifth grader with an IQ of 100 who can't write a simple sentence probably does have LD.

Learning disorders may be *informally flagged* by observing significant delays in the child's skill development. A 2-year delay in the primary grades is usually considered significant. For older students, such a delay is not as debilitating, so learning disabilities aren't usually suspected unless there is more than a 2-year delay. *Actual diagnosis* of learning disabilities, however, is made using standardized tests that compare the child's level of ability to what is considered normal development for a person of that age and intelligence.

For example, as late as fifth grade, Susan couldn't add two numbers, even though she rarely missed school and was good in other subjects. Her mother took her to a clinician, who observed Susan's behavior and administered standardized math and intelligence tests. The test results showed that Susan's math skills were several years behind, given her mental capacity for learning. Once other possible causes like lack of motivation and vision problems were ruled out, Susan's math problem was formally diagnosed as a specific learning disability.

Test outcomes depend not only on the child's actual abilities, but on the reliability of the test and the child's ability to pay attention and understand the questions. Children like Dennis, with poor attention or hyperactivity, may score several points below their true level of ability. Testing a child in an isolated room can sometimes help the child concentrate and score higher.

Each type of LD is diagnosed in slightly different ways. To diagnose speech and language disorders, a speech therapist tests the child's pronunciation, vocabulary, and grammar and compares them to the developmental abilities seen in most children that age. A psychologist tests the child's intelligence. A physician checks for any ear infections, and an audiologist may be consulted to rule out auditory problems. If the problem involves articulation, a doctor examines the child's vocal cords and throat.

In the case of academic skills disorders, academic development in reading, writing, and math is evaluated using standardized tests. In addition, vision and hearing are tested to be sure the student can see words clearly and can hear adequately. The specialist also checks if the child has missed much school. It's important to rule out these other possible factors. After all, treatment for a learning disability is very different from the remedy for poor vision or missing school.

ADHD is diagnosed by checking for the long-term presence of specific behaviors, such as considerable fidgeting, losing things, interrupting, and talking excessively. Other signs include an inability to remain seated, stay on task, or take turns. A diagnosis of ADHD is made only if the child shows such behaviors substantially more than other children of the same age.