

Facts

A Learning Disability (LD) affects people's ability to either interpret what they see and hear or connect information from different parts of the brain. The limitations show up in many ways, such as specific difficulties with spoken and written language, coordination, self-control, or attention; and can extend to schoolwork, making learning to read, write, or do math more difficult.

LD is a broad term that covers a host of possible causes, symptoms, treatments, and outcomes; but, in general, they can be divided into three broad categories:

- Developmental speech and language disorders
- Academic skills disorders
- "Other," which includes certain coordination disorders and learning handicaps not covered by the other terms.

Each of these categories includes a number of more specific disorders. When applying for health insurance coverage of diagnostic and treatment services, the specific diagnosis is commonly based upon criteria and characteristics which appear in a reference book called the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition). Some people have many overlapping learning disabilities, others may have a single, isolated learning problem that has little impact on other areas of their life.

Nearly 4 million school-age children have LD.

Signs & Symptoms

Parents are usually the first to notice delays in their child's overall development. Teachers may be the first to notice a continuing difficulty with reading, writing or arithmetic, while pediatricians may notice small difficulties, such as lack of coordination.

Diagnosis of learning disabilities is made using standardized tests that compare the child's level of ability to what is considered normal development for a person that age and intelligence. Each type of learning disability is diagnosed, however, 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. Academic skills disorders are evaluated using standardized tests. Vision and hearing are tested to be sure the child can see words clearly and hear adequately.

Causes

At one point, scientists thought all learning disabilities were caused by a single neurological problem. Research indicates, however, that most learning disabilities do not come from a single, specific area of the brain, but from difficulties in bringing together information from various brain regions. A leading theory today is that learning disabilities begin from small disturbances in brain structures and functions. Some scientists believe that the disturbance, in many cases, begins before birth.

Throughout pregnancy, the brain develops from a few all-purpose cells to a complex organ made of billions of specialized, interconnected nerve cells, called "neurons". During this process, brain development is vulnerable to disruptions. If the disruption happens early on, the fetus may die or the infant may be born with widespread disabilities and possibly mental retardation. If the disruption occurs later, when the cells are becoming specialized and moving into place, there may be errors in the cell makeup, location, or connections. Some researchers think that these errors may show up later as learning disorders.

Other factors that affect brain development include: genetic factors, tobacco, alcohol, and other drug use, problems during pregnancy or delivery, or toxins in the environment.

Learning disabilities tend to run in families, suggesting that there is a genetic link. However, some learning difficulties may be a result of the family environment. For example, parents with language disorders may talk less to children, or use incorrect language. In this case, the child may lack a good model for learning language and may seem to be learning disabled.

Researchers have found that mothers who smoke during pregnancy are more likely to have smaller babies. Newborns weighing less than 5 pounds are at a greater risk for a variety of problems, including learning disorders.

Heavy alcohol use during pregnancy has been linked with Fetal Alcohol Syndrome, a condition that leads to low birth weight, intellectual impairment, hyperactivity, and physical defects. Any alcohol use during pregnancy may affect the child's development and lead to problems with learning, attention, memory, or problem solving.

Drugs, especially crack, seem to affect the development of brain receptors. Because children with

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certain learning disabilities have difficulty understanding speech sounds or letters, some researchers believe that learning disabilities and attention deficit/hyperactivity disorder are associated with faulty receptors. Research indicates drug abuse is a possible cause of receptor damage.

Other possible causes of learning disabilities involve complications during pregnancy. The umbilical cord may become twisted and temporarily cut off oxygen to the fetus. In some cases, the mother's immune system reacts to the fetus, which can cause newly formed brain cells to settle in the wrong part of the brain.

New brain cells and their networks continue to form for a year or so after the birth of the child; these cells are vulnerable to certain disruptions as well. Environmental toxins, such as cadmium and lead, are becoming a focus of research. In addition, there is growing evidence that learning problems may develop in children with cancer who had been treated with chemotherapy or radiation at an early age. This seems especially true for children who received radiation to the skull.

Treatment

With more research, scientists hope to learn how differences in the structures and processes of the brain contribute to learning disabilities and how these differences might be treated or prevented.

In the meantime, creating a plan for getting help is critical. Because learning disabilities affect the child and family in many ways, help may be needed on a number of fronts: educational, medical, emotional, and practical.

In school, special education teachers design an Individualized Educational Program (IEP) which outlines the specific skills the child needs to develop, as well as appropriate learning activities that build on the child's strengths. The types of tasks the child is able to do and the senses that function well are identified, as well as areas with which the child has difficulty. Special education programs may be provided in a separate all-day classroom, or as a special education class that the student attends for several hours each week. Some parents hire tutors to work with their child after school. If the problems are severe, some parents place their child in a special school for the learning disabled.

In trying to do everything possible to help their children, many parents have been quick to try new treatments. Some of the treatments that have *not* proven effective in treating the majority of children with learning disabilities or attention disorders include: megavitamins, colored lenses, special diets, sugar-free diets, body stimulation, or manipulation.

Helping Yourself or Someone Else

Having a child with a learning disability may be an emotional burden for the family. Parents often feel many emotions, including denial, blame, frustration, anger and despair. Siblings may be annoyed or embarrassed by their

brother or sister, or jealous of all the attention the child receives. Children with learning disorders often absorb what others say about them. They may begin to define themselves as "behind," "slow," or "different."

Without professional help, the situation can get out of control. The more often children or teenagers fail, the more they may act out their frustration, and damage their self-esteem. The more they act out, the more trouble and punishment it brings, further lowering their self-esteem.

Counseling can be very helpful to people with learning disabilities and their families. It can help the people involved gain greater self-control and a better attitude. Family members may benefit from the opportunity to express their feelings and get support and reassurance.

Support groups can also be a source of information, practical suggestions, and mutual understanding. Self-help books written by teachers and mental health professionals are also beneficial.

Parents and teachers can help by structuring tasks and environments for the child in ways that allow the child to succeed. They can find ways to help students build on their strengths and work around their disabilities. A counselor or school psychologist can help find practical solutions that make it easier for the child and family to cope day by day.

Several publications, organizations, and support groups exist to help individuals, teachers and families understand and cope with learning disabilities. A wealth of information can be found in libraries and book stores or by searching the internet. A good starting point is the National Institute of Mental Health, at www.nimh.nih.gov, or the National Information Center for Children and Youth with Disabilities, at www.nichcy.org, or 1-800-695-0285.

Even though learning disabilities cannot be cured, there is still cause for hope. Because certain learning problems reflect delayed development, many children do eventually catch up.

Sources:

National Institute of Mental Health

For more information contact

National Institute of Mental Health
www.nimh.nih.gov
(800) 421-4211 (depression info)
(888) 826-9438 (anxiety info)
(301) 443-4513 (other info)

Mental Health America
www.nmha.org
(800) 969-6642

The Center for Mental Health Services
www.mentalhealth.org/cmhs/