

Dyslexia is a learning disorder that involves difficulty reading due to problems identifying speech sounds and learning how they relate to letters and words (decoding). Also called reading disability, dyslexia affects areas of the brain that process language.

People with dyslexia have normal intelligence and usually have normal vision. Most children with dyslexia can succeed in school with tutoring or a specialized education program. Emotional support also plays an important role.

Though there's no cure for dyslexia, early assessment and intervention result in the best outcome. Sometimes dyslexia goes undiagnosed for years and isn't recognized until adulthood, but it's never too late to seek help.

Symptoms

Signs of dyslexia can be difficult to recognize before your child enters school, but some early clues may indicate a problem. Once your child reaches school age, your child's teacher may be the first to notice a problem. Severity varies, but the condition often becomes apparent as a child starts learning to read.

Before school

Signs that a young child may be at risk of dyslexia include:

- Late talking
- Learning new words slowly
- Problems forming words correctly, such as reversing sounds in words or confusing words that sound alike
- Problems remembering or naming letters, numbers and colors
- Difficulty learning nursery rhymes or playing rhyming games

School age

Once your child is in school, dyslexia signs and symptoms may become more apparent, including:

- Reading well below the expected level for age
- Problems processing and understanding what he or she hears
- Difficulty finding the right word or forming answers to questions
- Problems remembering the sequence of things
- Difficulty seeing (and occasionally hearing) similarities and differences in letters and words
- Inability to sound out the pronunciation of an unfamiliar word
- Difficulty spelling
- Spending an unusually long time completing tasks that involve reading or writing
- Avoiding activities that involve reading

When to see a doctor

Though most children are ready to learn reading by kindergarten or first grade, children with dyslexia often can't grasp the basics of reading by that time. Talk with your doctor if your child's reading level is below what's expected for his or her age or if you notice other signs of dyslexia.

When dyslexia goes undiagnosed and untreated, childhood reading difficulties continue into adulthood

Causes

Dyslexia tends to run in families. It appears to be linked to certain genes that affect how the brain processes reading and language, as well as risk factors in the environment.

Risk factors

Dyslexia risk factors include:

- A family history of dyslexia or other learning disabilities

- Premature birth or low birth weight
- Exposure during pregnancy to nicotine, drugs, alcohol or infection that may alter brain development in the fetus
- Individual differences in the parts of the brain that enable reading

Complications

Dyslexia can lead to a number of problems, including:

- **Trouble learning.** Because reading is a skill basic to most other school subjects, a child with dyslexia is at a disadvantage in most classes and may have trouble keeping up with peers.
- **Social problems.** Left untreated, dyslexia may lead to low self-esteem, behavior problems, anxiety, aggression, and withdrawal from friends, parents and teachers.
- **Problems as adults.** The inability to read and comprehend can prevent a child from reaching his or her potential as the child grows up. This can have long-term educational, social and economic consequences.

Children who have dyslexia are at increased risk of having attention-deficit/hyperactivity disorder (ADHD), and vice versa. ADHD can cause difficulty sustaining attention as well as hyperactivity and impulsive behavior, which can make dyslexia harder to treat.

Diagnosis

There's no single test that can diagnose dyslexia. A number of factors are considered, such as:

- **Your child's development, educational issues and medical history.** The doctor will likely ask you questions about these areas and want to know about any conditions that run in the family, including whether any family members have a learning disability.
- **Home life.** The doctor may ask for a description of your family and home life, including who lives at home and whether there are any problems at home.
- **Questionnaires.** The doctor may have your child; family members or teachers answer written questions. Your child may be asked to take tests to identify reading and language abilities.
- **Vision, hearing and brain (neurological) tests.** These can help determine whether another disorder may be causing or adding to your child's poor reading ability.
- **Psychological testing.** The doctor may ask you and your child questions to better understand your child's mental health. This can help determine whether social problems, anxiety or depression may be limiting your child's abilities.
- **Testing reading and other academic skills.** Your child may take a set of educational tests and have the process and quality of reading skills analyzed by a reading expert.

Treatment

There's no known way to correct the underlying brain abnormality that causes dyslexia — dyslexia is a lifelong problem. However, early detection and evaluation to determine specific needs and appropriate treatment can improve success.

Educational techniques

Dyslexia is treated using specific educational approaches and techniques, and the sooner the intervention begins, the better. Psychological testing will help your child's teachers develop a suitable teaching program.

Teachers may use techniques involving hearing, vision and touch to improve reading skills. Helping a child use several senses to learn — for example, listening to a taped lesson and tracing with a finger the shape of the letters used and the words spoken — can help in processing the information.

Treatment focuses on helping your child:

- Learn to recognize and use the smallest sounds that make up words (phonemes)
- Understand that letters and strings of letters represent these sounds and words (phonics)
- Comprehend what he or she is reading
- Read aloud to build reading accuracy, speed and expression (fluency)
- Build a vocabulary of recognized and understood words

If available, tutoring sessions with a reading specialist can be helpful for many children with dyslexia. If your child has a severe reading disability, tutoring may need to occur more frequently, and progress may be slower.

Individual education plan

In the United States, schools have a legal obligation to take steps to help children diagnosed with dyslexia with their learning problems. Talk to your child's teacher about setting up a meeting to create a structured, written plan that outlines your child's needs and how the school will help him or her succeed. This is called an Individualized Education Plan (IEP).

Early treatment

Children with dyslexia who get extra help in kindergarten or first grade often improve their reading skills enough to succeed in grade school and high school.

Children who don't get help until later grades may have more difficulty learning the skills needed to read well. They're likely to lag behind academically and may never be able to catch up. A child with severe dyslexia may never have an easy time reading, but he or she can learn skills that improve reading and develop strategies to improve school performance and quality of life.

What parents can do

You play a key role in helping your child succeed. Take these steps:

- **Address the problem early.** If you suspect your child has dyslexia, talk to your child's doctor. Early intervention can improve success.
- **Read aloud to your child.** It's best if you start when your child is 6 months old or even younger. Try listening to recorded books with your child. When your child is old enough, read the stories together after your child hears them.
- **Work with your child's school.** Talk to your child's teacher about how the school will help him or her succeed. You are your child's best advocate.
- **Encourage reading time.** To improve reading skills, a child must practice reading. Encourage your child to read.
- **Set an example for reading.** Designate a time each day to read something of your own while your child reads — this sets an example and supports your child. Show your child that reading can be enjoyable.