



Autism Spectrum Disorder (ASD)

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What is Autism Spectrum Disorder?



Autism spectrum disorder (ASD) is a developmental disability caused by differences in the brain. Some people with ASD have a known difference, such as a genetic condition. Other causes are not yet known. Scientists believe there are multiple causes of ASD that act together to change the most common ways people develop. We still have much to learn about these causes and how they impact people with ASD.

People with ASD may behave, communicate, interact, and learn in ways that are different from most other people. There is often nothing about how they look that sets them apart from other people. The abilities of people with ASD can vary significantly. For example, some people with ASD may have advanced conversation skills whereas others may be nonverbal. Some people with ASD need a lot of help in their daily lives; others can work and live with little to no support.

ASD begins before the age of 3 years and can last throughout a person's life, although symptoms may improve over time. Some children show ASD symptoms within the first 12 months of life. In others, symptoms may not show up until 24 months of age or later. Some children with ASD gain new skills and meet developmental milestones until around 18 to 24 months of age, and then they stop gaining new skills or lose the skills they once had.

As children with ASD become adolescents and young adults, they may have difficulties developing and maintaining friendships, communicating with peers and adults, or understanding what behaviors are expected in school or on the job. They may come to the attention of healthcare providers because they also have conditions such as anxiety, depression, or attention-deficit/hyperactivity disorder, which occur more often in people with ASD than in people without ASD.

Signs and Symptoms

People with ASD often have problems with social communication and interaction, and restricted or repetitive behaviors or interests. People with ASD may also have different ways of learning, moving, or paying attention. These characteristics can make life very challenging. It is important to note that some people *without* ASD might also have some of these symptoms.

[Learn more about signs and symptoms of ASD »](#)



Diagnosis

Diagnosing ASD can be difficult since there is no medical test, like a blood test, to diagnose the disorder. Doctors look at the child's behavior and development to make a diagnosis. ASD can sometimes be detected at 18 months of age or younger. By age 2, a diagnosis by an experienced professional can be considered reliable.¹ However, many children do not receive a final diagnosis until they are much older. Some people are not diagnosed until they are adolescents or adults. This delay means that people with ASD might not get the early help they need.

[Learn more about screening and diagnosis of ASD »](#)

Treatment

Current treatments for ASD seek to reduce symptoms that interfere with daily functioning and quality of life. ASD affects each person differently, meaning that people with ASD have unique strengths and challenges and different treatment needs.² Treatment plans usually involve multiple professionals and are catered to the individual.

[Learn about treating the symptoms of ASD »](#)

Risk Factors

There is not just one cause of ASD. There are many different factors that have been identified that may make a child more likely to have ASD, including environmental, biologic, and genetic factors.

Although we know little about specific causes, the available evidence suggests that the following may put children at greater risk for developing ASD:

- Having a sibling with ASD
- Having certain genetic or chromosomal conditions, such as fragile X syndrome or tuberous sclerosis

- Experiencing complications at birth
- Being born to older parents

CDC is currently working on one of the largest U.S. studies to date on ASD. This study called the [Study to Explore Early Development \(SEED\)](#), was designed to look at the risk factors and behaviors related with ASD. CDC is now conducting a follow-up study of older children who were enrolled in SEED to determine the health, functioning, and needs of people with ASD and other developmental disabilities as they mature.

How Often ASD Occurs

CDC's [Autism and Developmental Disabilities Monitoring \(ADDM\) Network](#) has been estimating the number of 8-year-old children with ASD in the United States since 2000.

ASD occurs in all racial, ethnic, and socioeconomic groups. It is more than 4 times more common among boys than among girls.

[Learn more about how CDC estimates the number of children with ASD »](#)

If You're Concerned

As a parent, you already have what it takes to help your young child learn and grow. CDC has developed materials to help you track your child's developmental milestones and share that progress, or any concerns, with your child's doctor at every check-up.

[Learn more about CDC milestone checklists and other parent materials »](#)



Contact your child's doctor if you think your child might have ASD or if you have any other concerns about the way your child plays, learns, speaks, or acts.

If you are still concerned, **ask the doctor for a referral to a specialist** who can do a more in-depth evaluation of your child. Specialists who can do a more in-depth evaluation and make a diagnosis include

- Developmental pediatricians (doctors who have special training in child development and children with special needs)
- Child neurologists (doctors who work on the brain, spine, and nerves)
- Child psychologists or psychiatrists (doctors who know about the human mind)

At the same time, call your state's public early childhood system to request a free evaluation, sometimes called a Child Find evaluation, **to find out if your child qualifies for intervention services**. You do not need to wait for a doctor's referral or a medical diagnosis to make this call.

Where to call for a free evaluation from the state depends on your child's age:

- If your child is not yet 3 years old, contact your local early intervention system.
 - You can find the right contact information for your state by calling the Early Childhood Technical Assistance Center (ECTA) at 919-962-2001.
 - Or visit the [ECTA website](#). 
- If your child is 3 years old or older, contact your local public school system.
 - Even if your child is not yet old enough for kindergarten or enrolled in a public school, call your local elementary school or board of education and ask to speak with someone who can help you have your child evaluated.
 - If you're not sure who to contact, call the ECTA at 919-962-2001.
 - Or visit the [ECTA website](#). 

Research shows that early intervention services can greatly improve a child's development.^{3,4} In order to make sure your child reaches their full potential, it is very important to receive services as soon as possible.

References

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3. Handleman, J.S., Harris, S., eds. Preschool Education Programs for Children with Autism (2nd ed). Austin, TX: Pro-Ed. 2000.
4. National Research Council. Educating Children with Autism. Washington, DC: National Academy Press, 2001.

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