



Autism Spectrum Disorder (ASD)

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Condition Basics

What is autism spectrum disorder (ASD)?

Autism spectrum disorder (ASD) is a developmental disorder. It affects a person's behavior. And it makes communication and social interactions hard.

ASD can range from mild to severe. The type of symptoms a person has and how severe they are varies. Some children may not be able to function without a lot of help from parents and other caregivers. Others may learn social and verbal skills and lead independent lives as adults.

Most people with ASD will always have some trouble when they communicate or interact with others. But finding and treating ASD early has helped many people who have ASD to lead full lives. They can do things like go to college and work.

ASD now includes conditions that used to be diagnosed separately. These include:

- Autism.
- Asperger's syndrome.
- Pervasive developmental disorder.
- Childhood disintegrative disorder.

You or your doctor might use any of these terms to describe the condition.

What causes it?

The exact cause of ASD isn't known. But many factors may be involved. A change in certain genes or an interaction of several genes may be responsible. And something in the environment may play a role in these gene changes. Studies show that vaccines don't cause ASD.

What are the symptoms?

Symptoms include communication and behavior problems, like delays in learning to talk and a strong need for sameness. Other symptoms include problems using or responding to gestures, problems making eye contact, and having unusual attachments to objects. Usually symptoms are noticed by age 2.

How is it diagnosed?

Doctors use screening questions, exams, and tests to see how your child behaves and interacts with others. Talk with the doctor about what you've observed. The doctor will use all of this information, along with his or her judgment, to assess how your child is developing and look for signs of ASD.

How is ASD treated?

Treatment for ASD usually involves behavioral training. This training rewards wanted behavior to teach children social and other skills. Treatment may also include structured teaching. This involves organizing a child's day and school setting to help a child learn new skills. Some children also need things like speech therapy, physical therapy, or medicine.

What Increases Your Risk

ASD tends to run in families. So it may be something that you inherit. ASD tends to occur more often in people who have certain genetic conditions. These may include fragile X syndrome and tuberous sclerosis.

Some things increase the chance that you'll have a baby with ASD. These things are called risk factors.

The risk of having a baby with ASD is higher if either birth parent:

- Is at an older age.
- Has another child who has ASD.
- Has a family history of learning problems or ASD.

Learn more

Symptoms

Behavior and symptoms of ASD can range from mild to severe. Parents often say that their child with ASD prefers to play alone and doesn't make eye contact with other people.

In most cases, symptoms are noticed by the time a child is 2 years old. Some symptoms may be seen as early as age 9 months.

Core symptoms

How severe the symptoms are varies a lot. But all people with ASD have some symptoms in these areas:

- **Communication and social interactions.** Symptoms may include:
 - Problems with nonverbal communication skills. These include eye-to-eye gazing, facial expressions, and body posture. A child may not use or respond to gestures or pointing.

- Problems making friends with children the same age.
- A lack of interest in sharing enjoyment, interests, or achievements with other people.
- A lack of empathy. People with ASD may have a hard time understanding someone else's feelings, such as pain or sadness.
- Problems having a conversation. People with ASD have a hard time keeping a conversation going after it starts.
- Not being able to notice small differences in speech tone, pitch, and accent that change the meaning of others' speech. For example, a person with ASD may not know when someone is using humor. They may interpret what someone says word for word and not understand the implied meaning.
- **Repetitive behaviors and limited interests in activities or play.** Symptoms may include:
 - An unusual focus on pieces. Younger children with ASD often focus on parts of toys, such as the wheels on a car, rather than playing with the whole toy.
 - A strong focus on certain topics. For example, older children and adults may be very focused on video games, trading cards, or license plates.
 - A need for sameness and routines. For example, a child with ASD may always need to eat bread before salad. Or a child may insist on taking the same route every day to school.
 - Body rocking and hand flapping.
 - Repetitive use of language. People with ASD often repeat over and over a phrase they have heard. (This is called echolalia.)
 - Reacting too much or too little to one or more senses. These include sight, sound, taste, touch, and smell. For example, a child may get easily overwhelmed by bright lights, crowds, or loud noises. Or the child may describe a light touch as painful and deep pressure as something calming. Others may not feel pain at all.

What Happens

ASD during childhood

People who have ASD are born with it. In most cases, symptoms are noticed by the time a child is 2 years old. Some symptoms may be seen as early as age 9 months.

Parents often become concerned when their toddler:

- Doesn't like to be held.
- Doesn't seem interested in playing certain games, such as peekaboo.
- Doesn't begin to talk. Or sometimes a child with ASD may start to talk at the same time as others who are the same age but then stop gaining new skills or lose their social and language skills.

During the second year of life, parents may notice that their child repeats certain phrases, rituals, or routines. For example, a child with ASD may insist on putting textbooks, notepads, and pencils in a backpack the same way every time. Or a child may insist that a game be played in a certain way. Parents may also notice that their child repeats certain behaviors. For example, a child may rock their body or flap their hands over and over again.

Parents may also be confused about their child's hearing abilities. It often seems that a child with ASD doesn't hear. But at other times, they may appear to hear a distant background noise, such as the whistle of a train.

With early and intensive treatment, most children can improve. They can improve their ability to interact with others, communicate, and help themselves as they grow older.

ASD during teen years

During the teen years, the patterns of behavior often change. Many teens gain skills. But they still lag behind in how well they can interact with and understand others. For example, they may not pick up on social cues. They may not be able to read others' body language, start a conversation or keep it going, and take turns talking. They may not understand a joke or may take a sarcastic comment literally.

Puberty and growing sexuality may be harder for teens who have ASD than for others this age.

ASD during adulthood

More and more adults who have ASD are able to work and live on their own. And many of them are going to college or vocational school.

People who have average to above-average intelligence are often successful in school and at their jobs and able to live on their own. They are able to do this even though they still have some trouble interacting with other people.

But some adults need help. This is especially true for those with below-average intelligence who are unable to speak. They may need part- or full-time supervision at a supportive living center or group home.

Other problems related to ASD

People with ASD may also have other problems. These include:

- Attention deficit hyperactivity disorder (ADHD) or symptoms similar to ADHD.
- **Problems with coordination.** People who have ASD may lack coordination or be somewhat clumsy. They may have unusual facial expressions, body postures, and gestures. And they may have poor handwriting or have trouble with other motor skills, such as riding a bike.
- **Sleep problems.**
- **Strong food likes and dislikes.** Children with ASD may be sensitive to the color, taste, smell, or texture of food.
- **Eating things that aren't food.** These may include eating chalk, dirt, hair, paint, or paper. This is a condition called pica.
- **Wandering off from a caregiver.** For many caregivers, this is one of the most stressful behaviors they must learn to cope with. Wandering off puts the child's safety at risk.
- Depression, anxiety, or seizures.

Exams and Tests

There is no single test to diagnose ASD. Doctors use screening questions, exams, and tests to see how your child behaves and interacts with others. Talk with the doctor about what you've observed. The doctor will use all of this information, along with their judgment, to assess how your child is developing and if there are signs of ASD.

Screening questions are often asked at the 18-month and 24-month well-child visits. But they may be asked sooner if you are concerned that your child may have signs of ASD. The questions cover how your child talks, moves, and interacts with others. The answers help your doctor understand how your child is developing and if your child has signs of a developmental problem related to ASD. Screening questions can be a useful tool. But if your child's symptoms are mild, signs of ASD may be missed.

All doctors who do well-child visits watch for early signs of developmental disorders. A child who has these

signs of developmental delays should be evaluated:

- No babbling, pointing, or other gestures by 12 months of age
- No single words by 16 months
- No 2-word spontaneous phrases by 24 months, except for repeated phrases (echolalia)
- **Any** loss of any language or social skills at **any** age

If there are no clear signs of problems from the screening tests, most children don't need more evaluation until the next well-child visit.

But if your child is at a higher risk for ASD, they may need more screening and need to be screened more often. Examples of things that put a child at higher risk are having a sibling with ASD and having a genetic condition such as fragile X syndrome.

Anyone who develops problems with socializing, learning, or behavior should also be evaluated.

If your doctor thinks your child may have ASD, they may refer you to a specialist.

Exams and tests

Behavioral assessments. The specialist will use questions and guidelines to find out if your child has ASD or a different problem, such as a language delay or ASD and another condition. They'll look at your personal and family health history, observe your child, and do developmental and intelligence tests.

Physical assessments and laboratory tests. Other tests may be used to find out if a physical problem may be causing symptoms. These tests include:

- A physical exam. Your doctor may look for certain physical features that may be a sign of a genetic condition associated with ASD.
- Chromosomal analysis. This may be done if there is intellectual disability or if there is a family history of it.
- Hearing tests. These help to tell if hearing problems may be causing developmental delays, especially those related to social skills and language use.
- Vision tests. These help to tell if vision problems may be causing ASD symptoms. These symptoms include being sensitive to bright light or having problems making eye contact or responding to gestures or pointing.
- Speech, language, and motor skills tests. These may be done to see how well your child talks and moves.
- Testing for lead poisoning. This is especially important if a child has a condition called pica. A person who has pica craves things that are not food, such as dirt or flecks of old paint. In most cases, children with developmental delays keep putting items in their mouth after this stage has passed in other children.

Other tests may be done in certain cases. Some examples include an electroencephalograph (EEG), an MRI, and metabolic tests.

Learn more

Treatment Overview

What type of treatment is best for your child depends on the symptoms. These are different for each child. Treatment may change over time.

Treatment may include:

- **Behavioral programs and structured teaching.** There are many different programs that can help your child. Some start early in your child's development. These help children focus on improving their ability to communicate, learn, be social, and adapt to new situations.
 - Many programs are based on applied behavior analysis (ABA). This method rewards wanted behavior. Some people think ABA therapy for autism tries too hard to change behaviors to fit typical standards, which might ignore the unique needs of someone with ASD.
 - Treatment may also include structured teaching. This involves organizing a child's day and school setting to help the child learn new skills. Other methods, like modeling behavior or modifying a child's environment, may be used.
- **Specialized therapies.** These therapies are important parts of managing ASD.
 - Speech therapy. This can help your child improve language skills and communicate better.
 - Physical therapy. This can help improve coordination and motor skills.
 - Occupational therapy. This may help your child improve motor skills like handwriting or completing activities of daily living, such as bathing and brushing teeth.
- **Medicines.** These might be used to treat symptoms of ASD. Symptoms include being cranky or hyperactive. Sometimes medicine is also used to treat other problems such as anxiety, depression, or obsessive-compulsive disorder.
- **Cognitive behavioral therapy.** This might be used to help treat anxiety and depression in people who have ASD.
- **Community support and parent training.** Talk to your doctor about sources of support and training. Or contact an ASD organization.

Treatment may also address other problems related to ASD, like seizures or sleep problems.

If you're concerned about your child's development, you don't have to wait for a diagnosis of ASD to start treatment. Each state offers early intervention programs to children under the age of 3 who show signs of developmental delays. These programs can help children develop age-appropriate skills and behaviors. And they can help children get back some of the skills and abilities they may have lost to prevent more delays. Ask your doctor about getting a referral to one of these programs. Or visit www.ectacenter.org/contact/ptccoord.asp to find out what programs there are in your area.

Learn more

Self-Care

There are many ways you can help your child as they grow and develop. Here are some ideas that may help.

- Educate yourself about ASD. This can help your child develop independence.
 - Ask your doctor or contact ASD groups for help finding training about ASD. Parent and family education can reduce family stress and help your child function better.
 - Learn about your child's educational rights. Federal laws require services for children with special needs, including those with ASD. For example, public schools are required to create an Individualized Education Program (IEP). An IEP details your child's disability, appropriate teaching methods, and goals for the school year. There may also be state and local laws or policies to aid children who have ASD. Find out what services are available in your area.
- Plan for your child's future. Some adults with ASD can live by themselves, work, and be as independent as other people their age. Others need continued support. As your child gets older:
 - Think about where your adult child will live or go to college.
 - Think about what training and job resources your child may need.
 - Find out if your child is eligible for assistance.

- When a child with ASD becomes an adult, they are still eligible for certain services. But they will have to request or apply for these services themselves. You can take steps to help make sure that your child will have proper care and resources throughout life.
- Work closely with others who care for your child. The best treatment for children with ASD is a team approach and a consistent, structured program. Everyone involved needs to work together to set goals for:
 - School.
 - Behavior and interactions with family and other children.
 - Adjustment to different places.
 - Social and communication skills.
- Promote healthy growth and development.
 - Encourage your child to be physically active. Physical activity can help your child stay healthy. It also gives your child a way to build self-esteem, confidence, and friendships with other children. Work with your child's doctors to learn how physical activities may be best worked into your child's routine.
 - Encourage healthy eating. Children with ASD often have picky eating habits or may take a long time to learn to like new foods. Children with ASD are very sensitive to textures. Keep this in mind when you prepare healthy foods. For example, your child may prefer a banana that's been blended instead of a whole banana.
 - Help your child get enough sleep. Having a routine, including a set bedtime and time to get up, can help. If you can, keep video games, TVs, and computers out of your child's bedroom. Children with ASD are more likely to sleep fewer hours if they have these devices in their bedroom. If your child doesn't get enough sleep, their ASD symptoms may be worse.
- Provide support at home. Here are some things to know and ways you can help your child.
 - Your child has strengths. Help build those strengths by encouraging your child to explore interests at home and in school.
 - Routines are helpful. Children with ASD benefit from daily routines for meals, homework, and bedtime. They also like specific rules. Consistent expectations mean less stress and confusion for them.
 - Change or new situations may be stressful. Try to identify stress triggers. Avoid them if you can. Prepare your child in advance for hard situations, and teach your child ways to cope.
- Seek extra help during the teen years. The teen years can be a very hard time for children with ASD. But community services and public programs can help. A teen may benefit from a group home, special employment, and other programs designed to ease the transition into adulthood.
- Take care of yourself. Raising a child who has ASD can be stressful. Here are some ways to cope.
 - Get involved in a hobby, visit with friends, and learn other ways to relax.
 - Think about respite care. This is a family support service that provides a break for parents and siblings. Planned breaks help you connect with others in your family or have time for yourself.
 - Join a support group for parents and siblings of those with ASD. People who take part in support groups can benefit from others' experiences. Contact the Autism Society of America at www.autism-society.org for more information on support groups in your area.
 - Seek counseling if you or another family member has trouble handling stress.

Learn more

Watch

Complementary Treatments

You may hear about other approaches to treat ASD, such as complementary or alternative practices. There is

no evidence to show that these things have any benefit. And some of these treatments may be harmful or have risks associated with them.

When you're thinking about any type of treatment, find out about the source of the information and about whether the treatments are backed up by science. Stories by people who were helped by a treatment are not enough evidence to support using a treatment. Talk with your doctor about any complementary health practice that you would like to try or are already using.

Be extra careful about any treatment that:

- Is based on scientific theories that seem too simple.
- Is based upon a few stories (anecdotal evidence), not scientific research.
- Seems to provide dramatic or "miraculous" results.
- Doesn't have specific treatment goals or target behaviors.
- Is said not to need scientific research because it has no risks or side effects.

Learn more

Related Information

- Caregiver Tips
- Depression in Children and Teens
- Down Syndrome
- Epilepsy
- Obsessive-Compulsive Disorder (OCD)

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