

A close-up, blue-toned photograph of a jigsaw puzzle. The puzzle pieces are interlocked, and the word "Autism" is printed in a white, sans-serif font on a missing piece in the center. The background is a soft, out-of-focus blue, suggesting a sky or a calm environment. The lighting is even, highlighting the texture of the puzzle pieces and the sharp edges of the missing piece.

**Autism**

# Summary

Autism...

# What is Autism?

The Autism Spectrum Disorder (ASD) is a developmental disability that can have significant implications on a child's ability to function and interface with the world around them.

The disorder spans a spectrum from the least affected to the most severely affected.

**-Those with the most severe disability need a lot of help with their daily lives whereas those that are least affected may not.**



# How frequent is the Autism Spectrum Disorder?

According to the U.S. Centers for Disease Control and Prevention (CDC) update from July 2016, the prevalence of the autism spectrum disorder is about 1 in 68 children. Furthermore, ASD is about 4.5 times more common among boys (1 in 42) than among girls (1 in 189).

The disorder occurs in all racial, ethnic, and socioeconomic groups. Studies on three continents, namely Asia, Europe, and North America have identified individuals with ASD with an average prevalence of between 1% and 2%.

## How frequent is the Autism Spectrum Disorder? (cont'd.)

The reported prevalence of 1 in 68 children represents an increase from the prevalence of 1 in 150 reported in the year 2000. Autism occur concurrently with other developmental, psychiatric, neurologic, chromosomal, and genetic diagnoses.

In fact, according to the CDC, the co-occurrence of one or more non-ASD developmental diagnoses is 83% and that of one or more psychiatric diagnoses is 10%.

# Causes

Although some individuals with the disorder have a genetic cause, there are many others without a genetic cause for whom an exact etiology or causative factor has not been identified. Environmental and biologic causes are also postulated in addition to genetic causes.

## Causes (cont'd.)

Individuals with Fragile X syndrome, Down's syndrome, and Tuberous Sclerosis are at a higher risk for the development of the autism spectrum disorder. Siblings of those with autism, children born to older parents, prematurely born and low birth weight infants, and those exposed to certain maternal medications during pregnancy such as valproic acid are at higher risk of developing the autism spectrum disorder.

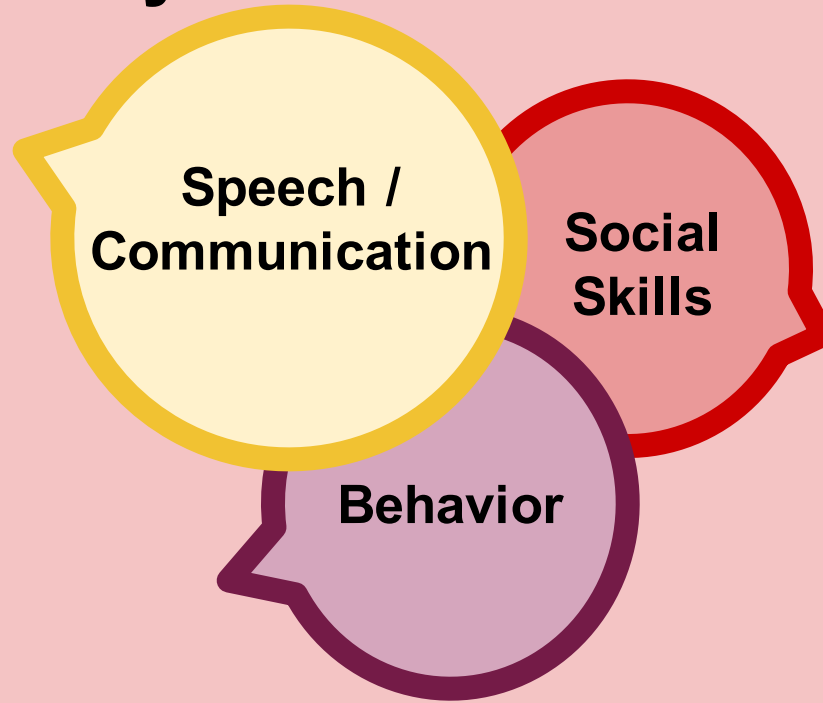
The risk of having a second child with ASD is 2-18% higher if a previous child has been affected.

# Symptoms and signs

Individuals with autism do not necessarily look obviously different from others. There may, however, be impaired in their speech, behavior, learning, and the way they perceive the world around them. The diagnostic segments that previously comprised the disorder, namely, autistic disorder, Pervasive Developmental Disorder (PDD-NOS), and Asperger Syndrome are now classified as a single disorder: the autism spectrum disorder.



**The three main domains that are affected  
by the disorder are:**



## Symptoms and signs (cont'd.)

Symptoms manifest before age 3 years, though children may be diagnosed after the age of three years in many cases. Some children manifest symptoms very early in life with up to half of parents noticing these symptoms in the first year of life. Almost all parents notice symptoms within the first two years of their child's life.

Further, although symptoms may improve with time, they generally last throughout life.

# Symptoms of autism include the following:

1. A child may not point at objects to show interest such as a picture on the wall.
2. They may not look towards objects when their parent points at them.
3. The child may have trouble interacting with other children or with adults.
4. They may want to play alone or may avoid eye contact with others.
5. They may have difficulty relating with the feelings of others or discussing their own feelings.

# Symptoms of autism include the following (cont'd.)

6. They may avoid direct physical contact such as being held by their parent.
7. They may appear unresponsive to others when they are spoken to.
8. They may repeat words or sounds or phrases they hear and use them instead of normal speech.
9. They may have trouble expressing themselves and having their needs met.
10. They may not indulge in "pretend play" - such as, when a child pretends to feed her doll or pretends to drive a fire engine.

# Symptoms of autism include the following (cont'd..)

11. They may tend to do things over and over again.
12. They may line their toys up in a straight line.
13. They may have unusual reactions to the way things smell, taste, look, feel, or sound.
14. They may become unable to do things they once could.
15. They may be very resistant to changes in their schedule or changes in the way things are done around the house.

# Diagnosis and differential diagnoses

According to the CDC, research has found that ASD can sometimes be detected at 18 months or younger. By age 2, a diagnosis by an experienced professional can be considered very reliable. However, many children do not receive a final diagnosis until they are much older. Even though ASD can be diagnosed as early as age 2 years, most children are not diagnosed with ASD until after age 4 years.

# The median age of first diagnosis by subtype is as follows:

**Autistic disorder:** 3 years, 10 months

**Pervasive developmental disorder-not otherwise specified (PDD-NOS):** 4 years, 1 month

**Asperger disorder:** 6 years, 2 months

This delay means that children with an ASD might not get the help they need. **The earlier an ASD is diagnosed, the sooner treatment services can begin.**

# The diagnostic process

The diagnostic process includes initial screening performed at the child's doctor's office using initial screening tools such as the MCHAT (Modified Checklist for Autism in Toddlers), the PEDS (Parents' Evaluation of Developmental Status) and the ASQ (Ages and Stages Questionnaires) in addition to a full history, developmental history, and a physical examination.

Any concerns either expressed by a parent, or discovered by the child's doctor should be further evaluated.



## The diagnostic process (cont'd.)

The ASRS (Autism Spectrum Rating Scales) is a norm referenced parent questionnaire that provides a detailed analysis with T scores and centiles based on the parent's answers.

The further diagnostic evaluation includes an evaluation by a doctor or psychologist trained in the diagnosis of autism. In addition to the screening tests, and parent reports, a full history including the developmental history and physical examination should be performed.

# The diagnostic process (cont'd..)

There are further diagnostic tests that may be performed such as the Autism Diagnosis Interview – Revised (ADI-R), the Autism Diagnostic Observation Schedule (ADOS-2), and the Childhood Autism Rating Scale (CARS).

The diagnostic criteria according to the American Psychiatric Association's Diagnostic and Statistical Manual, Fifth Edition (DSM-5) are used to help diagnose ASD. You can click here to read

them: <https://www.cdc.gov/ncbddd/autism/hcp-dsm.html>.

# Treatment

According to the U.S. National Institutes of Health (NIH), as of the time of writing, there is no curative medication for ASD or its core symptomatology.



# Early Intervention Services

Early interventions occur at or before preschool age, when a young child's brain is still forming. Early intervention services give children the best start possible and the best chance of developing to their full potential. The sooner a child gets help, the greater the chance for learning and progress.

With early intervention, between 3% and 25% of children with autism make such significant progress that their symptoms may be undetectable.

# Behavior management therapy

This modality attempts to reduced unwanted behaviors and increase or reinforce desirable behaviors.

It is often based on Applied Behavior Analysis (ABA).

# Cognitive Behavior Therapy (CBT)

This modality attempts to enable the person with autism learns to identify and change thoughts that lead to problem feelings or behaviors in particular situations.

# **Educational and school based therapies**

This is designed to meet the child's individualized needs while educating the child in the restrictive environment. Educating people with autism often includes a combination of one-on-one, small group, and regular classroom instruction.



# Speech therapy

This is a very valuable component of the therapeutic toolbox for ASD. Speech therapy enables the individual to enhance both their verbal or spoken skills and non-verbal communication skills to enhance their ability to interact with others.

Non-verbal communication techniques may include using hand signals or sign language and using picture symbols to communicate (Picture Exchange Communication System) and AAC devices

# Social skills training

This modality addresses one of the core deficits of the person with the autism spectrum disorder. This training teaches children the skills they need to interact with their peers.

It includes repeating and reinforcing certain behaviors. Social skills training can help improve relationships. Some of the key components of this training in elementary age children include conversation skills, handling teasing, being a good sport, and showing good host behavior during play dates.

# Occupational therapy

Occupational therapy helps people with autism spectrum disorder do everyday tasks by finding ways to work within and make the most of their needs, abilities, and interests. An occupational therapist might find a specially designed computer mouse and keyboard to ease communication, teach personal care skills such as getting dressed and eating, and do many of the same types of activities that physical therapists do.

# Physical Therapy

Physical therapy includes activities and exercises that build motor skills and improve strength, posture, and balance.

This type of therapy aims to help a child build muscle control and strength so that he or she can play more easily with other children.

# Medication

Although there is no curative medication available, health care providers often use medications to deal with a specific behavior, such as to reduce self-injury or aggression. The use of medication is not without risk and families should seek the advice of the physician managing their child in the process of deciding about medication use.

# Nutritional therapy

Proper nutrition is important given that children with ASD may be very particular with the foods they eat. Families should seek the advice of a qualified nutritionist or dietician before adopting any special diets. Many children with ASD are placed on gluten-free or casein-free diets. Available research data do not support the use of a casein-free diet, a gluten-free diet, or a combined gluten-free, casein-free diet as a primary treatment for individuals with ASD. We do not endorse the use of any special diets seeking expert advice.

# Parent mediated therapy

In parent-mediated therapy, parents learn therapy techniques from professionals and provide specific therapies to their own child. This approach gives children with autism spectrum disorder consistent reinforcement and training throughout the day.

Parents can also conduct some therapies with children who are at risk of autism but are too young to be diagnosed.

Several types of therapies can be parent-mediated, including: joint attention therapy, social communication therapy, and behavioral therapy.

# **Developmental, Individual Differences, Relationship-Based Approach (DIR; also called "Floortime")**

Floortime focuses on emotional and relational development (feelings, relationships with caregivers). It also focuses on how the child deals with sights, sounds, and smells.



# Sensory Integration Therapy

Some children with the autism spectrum disorder have difficulty with processing sensory stimuli such as sounds, lights, other visual stimuli, and touch. Sensory integration therapy helps the person deal with these sensory stimuli and could help a child who is bothered by certain sounds or does not like to be touched.

# Joint Attention Therapy

People with autism usually have difficulty with joint attention. This means that they have trouble following someone's gaze or pointed finger to look at something. Joint attention is important to communication and language learning. Joint attention therapy focuses on improving specific skills related to shared attention, such as: pointing, showing, and coordinating looks between a person and an object.

# Complementary and Alternative Treatments (CAM)

According to the U.S. CDC, parents and health care professionals use treatments that are outside of what is typically recommended by the pediatrician. These types of treatments are known as complementary and alternative treatments (CAM). They may include special diets, chelation (a treatment to remove heavy metals like lead from the body), biologicals (e.g., secretin), or body-based systems (like deep pressure). These types of treatments are very controversial. Current research shows that as many as one third of parents of children with an ASD may have tried complementary or alternative medicine treatments, and up to 10% may be using a potentially dangerous treatment. Before starting such a treatment, check it out carefully, and talk to your child's doctor. Here is a link to the National Center for Complementary and Alternative Medicine webpage on autism: <https://nccih.nih.gov/health/autism>



ambitious  
understanding  
trustworthy  
intelligent  
sincere  
misunderstood  
*just like you*