Autism spectrum disorder (ASD) is a complex developmental condition involving persistent challenges with social communication, restricted interests and repetitive behavior. While autism is considered a lifelong condition, the need for services and supports because of these challenges varies among individuals with autism.

According to the Centers for Disease Control and Prevention, an estimated one in 36 children has been identified with autism spectrum disorder.

Diagnosis of Autism Spectrum Disorder

Early signs of this condition can be noticed by parents/caregivers or pediatricians before a child reaches one year of age. However, the need for services and supports typically become more consistently visible by the time a child is 2 or 3 years old. In some cases, the problems related to autism may be mild and not apparent until the child starts school, after which their deficits may be pronounced when amongst their peers.

Social communication deficits may include[1]:

- Decreased sharing of interests with others.
- Difficulty appreciating their own & others' emotions.
- Aversion to maintaining eye contact.
- Lack of proficiency with use of non-verbal gestures.
- Stilted or scripted speech.
- Interpreting abstract ideas literally.
- Difficulty making friends or keeping them.

Restricted interests and repetitive behaviors may include[1]:

- Inflexibility of behavior, extreme difficulty coping with change.
- Being overly focused on niche subjects to the exclusion of others.
- Expecting others to be equally interested in those subjects.
- Difficulty tolerating changes in routine and new experiences.
- Sensory hypersensitivity, e.g., aversion to loud noises.
- Stereotypical movements such as hand flapping, rocking, spinning.
- Arranging things, often toys, in a very particular manner.

Parent/caregiver/teacher concerns about the child's behavior should lead to a specialized evaluation by a developmental pediatrician, pediatric psychologist, child neurologist and/or a child and adolescent psychiatrist. This evaluation involves interviewing the parent/caregiver, observing, and interacting with the child in a structured manner, and sometimes conducting additional tests to rule out other conditions. In some ambiguous cases the diagnosis of autism may be deferred, but an early diagnosis can greatly improve a child's functioning by providing the family early access to supportive resources in the community.

The first step is seeking an evaluation. Most parents start with their pediatrician who is checking on developmental milestones.

- **If your child is under the age of 3 years**, you can obtain an evaluation through your local early intervention system. (Learn more about early intervention and find local contact information.)
- **If your child is over the age of 3**, you can get an evaluation through your local school (even if your child does not go there). Contact your local school's preschool special education team to request an evaluation. (Learn more about requesting an evaluation.)

Example: Tomás is a 6-year-old boy whose family is troubled by Tomás' intense love of trains. His interest in trains, in addition to giving him great pleasure and serving to communicate his preferences, can sometimes lead to unintended consequences. For example, he gets angry and upset if his old trains are thrown away, or if his parents can't hold his train while he eats breakfast and gets ready for school in the morning. Teachers report that at school he tends to be very quiet and only listens when the topic of trains is brought up.

Risk Factors

The current science suggests that several genetic factors may increase the risk of autism in a complex manner. People with certain specific genetic conditions such as Fragile X Syndrome and Tuberous Sclerosis are at increased risk for being diagnosed with autism.These two conditions together with hundreds of individually rare genetic causes for autism explain over 30% of cases. Because of this, multiple professional medical societies recommend genetic testing as the standard of care after a diagnosis of autism is made. See more on genetic testing from the CDC.

Certain medications, such as valproic acid and thalidomide, when taken during pregnancy, have been linked with a higher risk of autism as well.[2] Having a sibling with autism also increases the likelihood of a child being diagnosed with autism. Parents being older at the time of pregnancy is additionally linked with greater risk of autism. Vaccines on the other hand have **not** been shown to increase the likelihood of an autism diagnosis, and race, ethnicity or socioeconomic status does not seem to have a link either. Male children tend to be diagnosed with autism more often than those assigned female sex at birth.

Treatment

There are several effective interventions that can help a child reach their full potential.:

- **Applied behavioral analysis:** Involves systematic study of the child's functional challenges, which is used to create a structured behavioral plan for improving their adaptive skills and decreasing inappropriate behavior
- **Social skills training:** Done in group or individual settings, this intervention helps children with autism improve their ability to navigate social situations
- **Speech & language therapy:** Can improve the child's speech patterns and understanding of language
- **Occupational therapy**: Can address adaptive skills deficits with activities of daily living, as well as problems with handwriting
- **Parent management training**: Parents learn effective ways of responding to problematic behavior and encouraging appropriate behavior in their child. Parent support groups help parents cope with the stressors of raising a child with autism
- **Special education services**: Are provided by schools under an Individual Education Plan and can include a range of services and accommodations for social communication deficits, restricted interests and repetitive behaviors. This can include special classes for very young children to address language, social skills and other needs.
- **Treating co-occurring conditions:** Children with autism are more likely to experience insomnia, attention-deficit/hyperactivity disorder (ADHD), intellectual disability, anxiety, and depression than peers without autism. These conditional also need to be addressed. The impact of these conditions can be reduced with the proper services, which can include any of the above, as well as psychotherapy and/or medication. Treating these conditions typically involves coordination with a pediatrician or primary care clinician.
- **Medication:** A child psychiatrist can evaluate for other mental health conditions and prescribe medication if appropriate. For example, autism-related irritability that does not respond to behavioral interventions can be reduced by medications such as aripiprazole and risperidone (the two medications approved by the Food and Drug Administration for irritability associated with autism), prescribed judiciously by a knowledgeable clinician in collaboration with the child's parents. (Read more in the Parents' Medication Guide from the American Academy of Child and Adolscent Psychiatry and APA)

Several complementary and alternative interventions involving special diets and supplements have been tried over the years. Most of these interventions, including therapies, diets, and "natural treatment," do not have scientific evidence supporting them and can lead to false expectations. Parents should be very cautious about treatments that are advertised as being able to "cure"

autism. Research into these types of interventions continues, and parents/caregivers interested in them should discuss them with their child's treating clinician.

Additional information can be found in the Expert Q&A section.

Tips for Parents

- Learn as much as possible about autism spectrum disorder.
- Provide consistent structure and routine.
- Connect with other parents of children with autism and resources in your community.
- Seek professional help for specific concerns.
- Take time for yourself and other family members.
- Understand your rights relating to your child's education, evaluation, and treatment.
- Having a child with autism affects the whole family. In addition to the unique contributions and characteristics of each person on the autism spectrum, navigating this process as a family can be stressful and lead to challenges. Paying attention to the physical and emotional health of the whole family is important.

Many national and local advocacy organizations provide information, resources and support to individuals with autism spectrum disorder and their families. A few are listed in the Resources section.

Related Conditions

- Attention-deficit/hyperactivity disorder
- Social communication disorder
- Specific learning disorder
- Intellectual disability

Physician Review

Amalia Londoño Tobón, M.D., IMH-E® Mentor
Perinatal, Child and Family Psychiatrist-Researcher
Assistant Professor, Georgetown University Medical Center
Department of Psychiatry, MedStar Georgetown University Hospital

Daniel Moreno De Luca, M.D. MSc.
CASA Research Chair
Associate Professor & Principal Investigator
Precision Medicine in Autism (PRISMA) Group
Child and Adolescent, and Adult Psychiatry, University of Alberta

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☆ **OTHER RESOURCES**

More on Autism Spectrum Disorder

- AACAP & APA - Autism Spectrum Disorder: Parents' Medication Guide (.pdf)
- Autism Society of America
- Autism Speaks
- American Academy of Pediatrics - Autism spectrum disorder
- Centers for Disease Control and Prevention (CDC) - autism spectrum disorders
- Center for Parent Information and Resources - resources by state

Medical leadership for mind, brain and body.