

# An Overview of Autism Spectrum Disorders

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## **AUTISM SPECTRUM DISORDERS OVERVIEW**

Autism spectrum disorders (ASD) are complex developmental disabilities that are the result of a neurological disorder affecting the normal functioning of the brain, impacting development in the areas of social interaction and communication skills. Both children and adults with ASD typically show difficulties in verbal and non-verbal communication, social interactions, and leisure or play activities. Children and adults with ASD can exhibit a wide range of impairments in social interaction and communication, and with any degree of severity. Two children, both with the same diagnosis, can act completely different from one another and have varying capabilities.

There is no cure for ASD and it is considered a life-long disability. Treatment, though, can be effective in improving the overall functioning level of the person with ASD. Treatment approaches vary with symptoms that the child with ASD demonstrates.

## **NEW DIAGNOSTIC REQUIREMENTS FOR AUTISM SPECTRUM DISORDERS**

The diagnostic category of ASD was revised with the publication of the DSM-5, the Diagnostic and Statistical Manual – Version 5. There are no subtypes of ASD, and the subtype previously referred to as Asperger's Disorder has been eliminated. Now, the diagnosis of ASD is made when a child meets the following criteria:

- Deficits in social communication and social interaction: [all three conditions must be met]
  - Deficits in social-emotional reciprocity
  - Deficits in nonverbal communicative behaviors
  - Deficits in developing and maintaining relationships
- Restricted, repetitive patterns of behavior, interests, or activities: [two of the four conditions must be met]
  - Stereotyped or repetitive speech, motor movements, or use of objects
  - Excessive adherence to routines, ritualized behaviors, or resistance to change
  - Highly restricted, fixated interests that are abnormal in intensity or focus
  - Hyper- or hypo- reactivity to sensory input or unusual interests in sensory aspects of the environment
- Some of the symptoms present since early childhood
- Symptoms impair everyday functioning

Severity level is categorized by the extent to which the symptoms impair daily functioning. Specifically, a child with a Level 1 severity requires support due to significant deficits in social communication that lead to interference in one context/setting; a child with a level 2 severity requires substantial support due to marked deficits that are obvious to the casual observer and across contexts/settings; and, a child with Level 3 severity requires very substantial support due to minimal social communication and marked interference in daily life.

Youth who do not meet the above criteria but show persistent difficulties (stemming back to the early developmental period) with the social use of verbal and nonverbal communication are now diagnosed with Social (Pragmatic) Communication Disorder, a new diagnosis with the publication of DSM-5. These children will show the following symptoms, and to the degree that functional limitations are noticeable in communication, social participation, social relationships, academic achievement, and/or occupational (work) performance:

- Deficits in using communication for social purposes (e.g., greeting others)
- Impairment in ability to change communication to match the context or needs of a listener in a social situation (e.g., not using overly formal language)
- Difficulties following the rules for conversation and storytelling (e.g., taking turns, using nonverbal gestures)
- Difficulties understanding what is not explicitly stated (e.g., making inferences) and/or nonliteral language (e.g., idioms, multiple meanings, humor)

## **CAUSES OF ASD**

It is now well-established and accepted that ASD are neurological disorders. It is clear that children with ASD are born with the disorder or born with the potential to develop it. Bad parenting does not cause it. It is not a mental illness. Children with ASD are not unruly kids who choose not to behave. No known psychological factors have been shown to cause ASD. Vaccines do not cause it.

There is no known single cause for ASD, but it is generally accepted that it is caused by abnormalities in brain structure or function. Brain scans show differences in the shape and structure of the brain in autistic versus non-autistic children. While no one gene has been identified as causing ASD, in many families there appears to be a pattern of autism or related disabilities, supporting a genetic basis to the disorder. Researchers are searching for, and finding, irregular segments of genetic code that autistic children have inherited.

ASD tends to occur more frequently than expected among individuals who have certain medical conditions, including Fragile X syndrome, tuberous sclerosis, congenital rubella syndrome, and untreated phenylketonuria (PKU). Some harmful substances ingested during pregnancy have also been associated with an increased risk of ASD.

Researchers are investigating the possibility that, under certain conditions, a cluster of unstable genes may interfere with brain development, resulting in ASD. Still other researchers are investigating problems during pregnancy or delivery, as well as environmental factors such as viral infections, metabolic imbalances, and exposure to environmental chemicals. However, in 2002, The Agency for Toxic Substances and Disease Registry (ATSDR) prepared a review of hazardous chemical exposures and ASD and found no compelling evidence for an association. It has also been strongly established that the MMR vaccines do not contribute to the cause of ASD.

## **TREATMENT FOR ASD**

Treatment approaches are evolving as more is learned about ASD. Because of the individual differences among these children, the Autism Society of America supports an individualized approach that addresses the core deficits of ASD (e.g., communication, social, academic difficulties) and that matches each family's preferences and needs. Treatment for ASD will not "cure", and any treatments that tout a cure should never be considered. Treatment for ASD should address the core deficits of the child, with long-term treatment being expected.

Early intervention is important in addressing the symptoms associated with ASD. The earlier treatment is started, the better the chance the child will reach closer-to-normal functioning levels. Treatment should begin at time of diagnosis, even for children diagnosed as young as 18 months old.

The National Autism Center completed and released the results from The National Standards Project, a comprehensive review of the literature to address what treatments work. The study was huge and completed in two parts (2009 and 2015), researching over 1300 studies and covering the range of autism spectrum disorders and for toddlers through adulthood. The project identified treatments as established treatments (meaning that there ample research exists to show that those treatments are effective with ASD), as emerging treatments (meaning that there is some support for their effectiveness), and as unestablished (meaning that there is no support for those treatments and they should not be recommended). The full report is on line at [www.nationalautismcenter.org](http://www.nationalautismcenter.org).

In general, treatment programs should focus on three components: language development, behavioral modification, and social skills training. Medication treatment is sometimes included in the treatment of ASD as well.

*Language development.* Language development is not only delayed but impaired for many children with ASD; therefore, speech and language therapy is often a critical treatment component. A qualified speech and language therapist makes an assessment of the child's baseline language development, and goals are set to improve the child's ability to use language to communicate with others.

Language therapy may take years, but initial progress should be observed within the first three to six months. After this period, growth often plateaus for awhile before making another jump. It is not clear why this pattern is observed, and parents should be informed that this plateau is not uncommon.

For children who never develop functional language, language therapy helps the child develop a method of communication; sometimes via abbreviated sign language, sometimes by a pictorial card system.

*Behavioral modification.* There are many treatment programs that use a behavioral modification approach to improve social communication and behavior; i.e., Applied Behavior Analysis (ABA), Discrete Trial Training, TEACCH, Lovaas Method. The basic premise of these treatment programs is that behavior that is rewarded is more likely to be repeated than behavior that is ignored or punished. These programs use repeated trials of behavioral responses to shape behaviors into appropriate patterns. The National Standards project has listed these treatment methods as effective with ASD. Their greatest drawback is the time needed to bring improvement. For example, ABA and the Lovaas Method both require 30 to 40 hours per week of treatment, and for several years.

Many of the negative behaviors observed in a child with ASD are borne from anxiety and sensory-related anxiety and thus respond well to behavioral treatment. These behaviors can include skin picking, hair pulling, screeching, head banging, somatic complaints, hitting/kicking, and emotional outbursts. Behavioral treatment approaches help the parents and other caregivers recognize the antecedents to the child's negative behavior and alter the environment so as to limit the behavior problems, as well as intervene immediately to help the child cope with the anxiety-provoking situation.

*Social Skills training.* Children with ASD lack social awareness and are often seen as rude and inconsiderate when in actuality they do not understand the rules of social conduct. Social skills training deigns to help the child with ASD develop a stronger social skills repertoire. Methods of social skills training recognized by The National Standards Project are numerous and include specific methods such as Floor Time and Social Stories, as well as social groups designed specifically for children with limited social understanding. Like language therapy, social skills training is long-term and begins with a thorough assessment by a therapist regarding the areas of impairment.

*Medication treatment.* Although there is no medication regime specific to ASD, medication treatment can be a helpful treatment component. In general, medication is utilized to address problematic behaviors that are interfering with the child's overall functioning. Behaviors which have responded positively to medication treatment include attention problems, anxiety, aggressive behaviors, mood disruptions/emotional outbursts, depression, stereotypic motor tics, and self-injurious behaviors.

Medication treatment should always be undertaken by a medical professional knowledgeable in ASD. A good medication regime may take months to determine, and sometimes a child with ASD may need to be on more than one medication for optimal response.