

Autism

Autism spectrum disorders (ASDs) are a group of life-long developmental disabilities caused by an abnormality of the brain. ASD is characterized by problems with social interaction and communication skills, and by the need for sameness or repetition in behavior. ASD includes autistic disorder, pervasive developmental disorder - not otherwise specified (also known as atypical autism), and Asperger's disorder.

Children with ASD require long-term care and services. Special education costs for a child with ASD are over \$8,000 per year, with some specially structured programs costing about \$30,000 per year, and care in a residential school costs \$80,000 - \$100,000 per year.

Little is known about what causes ASD, although genetic and environmental factors have been suggested. There is no cure for ASD, however, early and intensive education can help children develop skills to cope with the effects of ASD. Also, although available medicines cannot cure ASD, some may relieve symptoms associated with the disorders.

What is Autism?

Autism is classified as one of the pervasive developmental disorders of the brain. It is not a disease. Autism is a brain disorder that typically affects a person's ability to communicate, form relationships with others, and respond appropriately to the environment. Some people with autism are relatively high-functioning, with speech and intelligence intact. Others are mentally retarded, mute, or have serious language delays. For some, autism makes them seem closed off and shut down; others seem locked into repetitive behaviors and rigid patterns of thinking.

Although people with autism do not have exactly the same symptoms and deficits, they tend to share certain social, communication, motor, and sensory problems that affect their behavior in predictable ways.

Causes of Autism

In the majority of cases no specific underlying cause of autism can be identified. A variety of factors are associated with increased incidence of some forms of autism. These include infectious, metabolic, genetic, neurological, and environmental factors. There are many studies that support a genetic contribution. Family studies have shed the most light on this issue. Studies of identical twins, who have the same genetic make-up, have found about a 75 percent concordance rate (both twins have autism); fraternal (non-identical) twins have a 3 percent concordance rate. The risk of autism in siblings ranges from 2 to 6 percent. Finally, among families with autism there is a 10 - 40 percent increase in the diagnosis of other developmental disabilities, such as language delays and learning disabilities. The inheritance pattern is complex and suggests that a number of different genes may be involved.

It is generally accepted that autism is caused by abnormalities in brain structures or functions. Scientists are studying normal brain development to help them determine how abnormalities occur. The brain develops throughout the entire pregnancy cycle and continues to develop during the first few years after birth. Researchers have identified several different problems that can interfere with normal brain development. But identifying the causes of the problems and determining a cure are difficult tasks.

To date, genetic causes for one disorder commonly accompanying autism (Fragile X) and one autism-spectrum disorder (Rett Syndrome) have been identified and genetic "hotspots" for other forms of autism have been indicated. Fragile X is the most common genetically-inherited form of mental retardation currently known and produces many of the same behaviors and symptoms as autism. Rett Syndrome,

which affects only girls, is a progressive brain disease that produces a loss of language/social skills that is similar to autism and is classified as a pervasive developmental disorder (PDD).

The MMR vaccine has not been shown to cause autism in children.

Diagnosis of Autism

Parents are usually the first to notice unusual behaviors in their child. Their baby seemed "different" from birth. The first signs of autism may appear in children who had been developing normally. When an affectionate, babbling toddler suddenly becomes silent, withdrawn, violent, or self-abusive, something is wrong. Unfortunately, friends and relatives can delay the parents in seeking help. Statements such as "He'll grow out of it," or "Every child is different," can assure parents that there is nothing really wrong with their child.

Autism is a type of Pervasive Developmental Disorder. A diagnosis of autistic disorder is made when an individual displays 6 or more of 12 symptoms across three major areas: social interaction, communication, and behavior. When children display similar behaviors but do not meet the criteria for autistic disorder, they may receive a diagnosis of Pervasive Developmental Disorder-NOS (PDD not otherwise specified).

The following are the diagnostic criteria for Autistic Disorder listed in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM IV):

A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3).

1. Qualitative impairment in social interaction, as manifested by at least two of the following:
 - Marked impairments in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction.
 - Failure to develop peer relationships appropriate to developmental level.
 - A lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people).
 - Lack of social or emotional reciprocity (not actively participating in simple social play or games, preferring solitary activities, or involving others in activities only as tools or "mechanical" aids).
2. Qualitative impairments in communication as manifested by at least one of the following:
 - Delay in or total lack of the development of spoken language, not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime.
 - In individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others.
 - Stereotyped and repetitive use of language or idiosyncratic language.
 - Lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level.
3. Restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least two of the following:
 - Encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus.
 - Apparently inflexible adherence to specific, nonfunctional routines or rituals.
 - Stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole body movements).
 - Persistent preoccupation with parts of objects.

Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years:

1. Social interaction
2. Language as used in social communication

3. Symbolic or imaginative play

The disturbance is not better accounted for by Rett Syndrome or Childhood Disintegrative Disorder.

The following are some different methods used to diagnose autism.

Medical Tests

Various medical tests may help with diagnosis and possibly suggest changes in the intervention or treatment strategy.

Hearing: Various tests such as an Audiogram and Tympanogram can indicate whether a child has a hearing impairment. Audiologists, or hearing specialists, have methods to test the hearing of any individual by measuring responses such as turning their head, blinking, or staring when a sound is presented.

Electroencephalogram (EEG): An EEG measures brain waves that can show seizure disorders. In addition, an EEG may indicate tumors or other brain abnormalities. An electroencephalogram is a recording which shows the variations in electrical potentials at a number of scalp sites. Inside the brain, neurons produce their own electrical fields. These fields are measured in units of micro volts. It is thought that an unhealthy brain will have large changes in the electrical potential compared to the potentials produced by a healthy brain.

However, in order to observe an unhealthy brain it must be compared to the same brain when it was healthy. So, for example, to measure the difference between a brain undergoing a seizure, the EEG must last long enough for a seizure to occur. Often a video EEG is done over a period of a day or a week. This form of measuring brain activity is noninvasive (doesn't require any surgical cuts) and relatively inexpensive. This method gives numerical results. The patterns of the numbers are then used to determine whether or not the brain is healthy. The results can also be used to determine which section of the brain is causing problems. Additional tests will likely be needed to make an accurate diagnosis of these conditions.

Metabolic Screening: Blood and urine lab tests measure how a child metabolizes food and its impact on growth and development. Some autism spectrum disorders can be treated with special diets.

Magnetic Resonance Imaging (MRI): An MRI involves using magnetic sensing equipment to create an image of the brain in extremely fine detail. Sometimes children are sedated in order to complete the MRI.

Computer Assisted Axial Tomography (CAT SCAN): An X-ray tube rotates around the child taking thousands of exposures that are sent to a computer where the X-rayed section of the body is reconstructed in great detail. CAT Scans are helpful in diagnosing structural problems with the brain.

Genetic Testing: Blood tests look for abnormalities in the genes which could cause a developmental disability.

Direct Observation

Direct observation, interaction, and interviews assessments: Information about a child's emotional, social, communication and cognitive abilities is gathered through child directed interactions, observations in various situations, and interviews of parents and caregivers. Parents and family members should be actively involved throughout these assessments. What actually occurs during a specific assessment depends on what information parents and evaluators want to know.

Functional assessments: These assessments aim to discover why a challenging behavior (such as head banging) is occurring. Based on the premise that challenging behaviors are a way of communicating, functional assessment involves interviews, direct observations, and interactions to determine what a child with autism or a related disability is trying to communicate through their behavior. Once the purpose of

the challenging behavior is determined, an alternate, more acceptable means for achieving that purpose can be developed. This helps eliminate the challenging behavior.

Play-based assessments: These assessments involve adult observation in structured and unstructured play situations that provide information about a child's social, emotional, cognitive, and communication development. By determining the child's learning style and interaction pattern through play-based assessments, an individualized treatment plan can be developed.

Autism Treatment

When parents learn that their child is autistic, most wish they could magically make the problem go away. They looked forward to having a baby and watching their child learn and grow. Instead, they must face the fact that they have a child who may not live up to their dreams and will daily challenge their patience. Some families deny the problem exists or fantasize about an instant cure. They may take the child from one specialist to another, hoping for a different diagnosis. It is important for the family to eventually overcome their pain and deal with the problem, while still cherishing hopes for their child's future. Most families realize that their lives can move on.

Today more than ever before, people with autism can be helped. A combination of early intervention, special education, family support, and in some cases, medication, is helping increasing numbers of children with autism to live more normal lives. Special interventions and education programs can expand their capacity to learn, communicate, and relate to others, while reducing the severity and frequency of disruptive behaviors. Medications can be used to help alleviate certain symptoms. Older children and adults may also benefit from the treatments that are available today. So, while no cure is in sight, it is possible to greatly improve the day-to-day life of children and adults with autism.

Autism is not a narrowly defined disorder. A person diagnosed with autism can be suffering from a variety of symptoms and affects. Due to the various specific types of autism, a single treatment method does not work for all victims. Treatment needs to be created and modified for each individual. Below are listed two of the methods used to treat autism. For a description of specific treatment methods click [this link](#).

Developmental approaches

Professionals have found that many children with autism learn best in an environment that builds on their skills and interests while accommodating their special needs. Programs employing a developmental approach provide consistency and structure along with appropriate levels of stimulation. For example, a predictable schedule of activities each day helps children with autism plan and organize their experiences. Using a certain area of the classroom for each activity helps students know what they are expected to do. For those with sensory problems, activities that sensitize or desensitize the child to certain kinds of stimulation may be especially helpful.

Behavioral approaches

When people are rewarded for a certain behavior, they are more likely to repeat or continue that behavior. Behavioral training approaches are based on this principle. When children with autism are rewarded each time they attempt or perform a new skill, they are likely to perform it more often. With enough practice, they eventually acquire the skill. For example, a child who is rewarded whenever she looks at the therapist may gradually learn to make eye contact on her own.

It is critical that parents obtain reliable, objective information before enrolling their child in any treatment program. Programs that are not based on sound principles and tested through solid research can do more harm than good. They may frustrate the child and cause the family to lose money, time, and hope.

Autism Coping

Raising a child with autism is a very difficult and stressful task. The strain that it can put on a family is tremendous. An Autistic child requires almost constant supervision and their behavior can adversely affect everyone around them.

Siblings may become super achievers to get their share of the attention--or they may seek negative pursuits, for the same reason. This results from the siblings feeling that they do not get any attention compared to how much time the parents spend with their autistic sibling. Parents need to give their children a safe place to keep their personal belongs and have their own space, so they do not feel that the autistic child gets to have everything. The siblings need to have a private room to go to and not have to deal with their autistic brother or sister. Most important though is for the parents to be sure to spend quality time with their other children. This may require having a close relative or trained baby-sitter to watch the autistic child while the rest of the family has a night out for fun activities.

Autism can be very hard on a marriage. Parents lose almost all of their personal time because of the care their autistic child requires. This can lead to depression, withdrawal of one parent from the care giving, and even divorce or abandonment. Parents need to support each other by making sure to set aside time just for themselves. They also must make sure that they discuss what they have to deal with on a daily basis. If the parents are having problems coping with all of the stress, they need to recognize their limitations and seek professional help. When people are under constant stress, small problems can fester and lead to resentment or angry outbursts. Such problems can only weaken a marriage and add more stress. Parents also must not be afraid to go out in public. Isolating themselves from the surrounding world will only make them feel more alone in dealing with their autistic child.

There are many organizations able to give advice, counseling, and support to families dealing with autism.