

# Autism

## Definition

Autism is a severe disorder of brain function marked by problems with social contact, intelligence and language, together with ritualistic or compulsive behavior and bizarre responses to the environment.

## Description

Autism is a lifelong disorder that interferes with the ability to understand what is seen, heard, and touched. This can cause profound problems in personal behavior and in the ability to relate to others. A person with autism must learn how to communicate normally and how to relate to people, objects and events. However, not all patients suffer the same degree of impairment. There is a full spectrum of symptoms, which can range from mild to severe.

Autism occurs in as many as one or two per 1,000 children. It is found four times more often in boys (usually the first-born) and occurs around the world in all races and social backgrounds. Autism usually is evident in the first three years of life, although in some children it's hard to tell when the problem develops. Sometimes the condition isn't diagnosed until the child enters school.

While a person with autism can have symptoms ranging from mild to severe, about 10% have an extraordinary ability in one area, such as in mathematics, memory, music, or art. Such children are known as "autistic savants" (formerly known as "idiot savants").

## Causes and symptoms

Autism is a brain disorder that affects the way the brain uses or transmits information. Studies have found abnormalities in several parts of the brain that almost certainly occurred during fetal development. The problem may be centered in the parts of the brain responsible for processing language and information from the senses.

There appears to be a strong genetic basis for autism. Identical twins are more likely to both be affected than twins who are fraternal (not genetically identical). In a family with one autistic child, the chance of having another child with autism is about 1 in 20, much higher than in the normal population. Sometimes, relatives of an autistic child have mild behaviors that look very much like autism, such as repetitive behaviors and social or communication problems. Research also has found that some emotional disorders (such as manic depression) occur more often in families of a child with autism.

At least one group of researchers has found a link between an abnormal gene and autism. The gene may be just one of at least three to five genes that interact in some way to cause the condition. Scientists suspect that a faulty gene or genes might make a person vulnerable to develop autism in the presence of other factors, such as a chemical imbalance, viruses or chemicals, or a lack of oxygen at birth.

In a few cases, autistic behavior is caused by a disease such as:

- **rubella** in the pregnant mother
- tuberous sclerosis
- **fragile X syndrome**
- encephalitis
- untreated **phenylketonuria**

The severity of the condition varies between individuals, ranging from the most severe (extremely unusual, repetitive, self-injurious, and aggressive behavior) to very mild, resembling a personality disorder with some learning disability.

Profound problems with social interaction are the most common symptoms of autism. Infants with the disorder won't cuddle; they avoid eye contact and don't seem to want or need physical contact or affection. They may become rigid or flaccid when they are held, cry when picked up, and show little interest in human contact. Such a child doesn't smile or lift his arms in anticipation of being picked up. He forms no attachment to parents nor shows any normal **anxiety** toward strangers. He doesn't learn typical games of childhood, such as peek-a-boo.

### **Language problems**

The child with autism may not speak at all; if he does, it is often in single words. He may endlessly repeat words or phrases that are addressed to him and may reverse pronouns ("You go sleep" instead of "I want to go to sleep").

### **Restricted interests and activity**

Usually a child with autism has many problems playing normally. He probably won't act out adult roles during play time, and instead of enjoying fantasy play, he may simply repeatedly mimic the actions of someone else. Bizarre behavior patterns are very common among autistic children and may include complex rituals, screaming fits, rhythmic rocking, arm flapping, finger twiddling, and crying without tears. Autistic children may play with their own saliva, feces or urine. They may be self-destructive, biting their own hands, gouging at their eyes, pulling their hair, or banging their head.

### **Sensory problems**

The sensory world poses a real problem to many autistic children, who seem overwhelmed by their own senses. A child with autism may ignore objects or become obsessed with them, continually watching the object or the movement of his fingers over it. Many of these children may react to sounds by banging their head or flapping fingers. Some high-functioning autistic adults who have written books about their childhood experiences report that sounds were often excruciatingly painful to them, forcing them to withdraw from their environment or try to cope by withdrawing into their own world of sensation and movement.

### **Intellectual problems**

Most autistic children appear to be moderately mentally retarded. They may giggle or cry for no reason, have no fear of real danger, but exhibit terror of harmless objects.

### **Diagnosis**

There is no medical test for autism. Because the symptoms of autism are so varied, the condition may go undiagnosed for some time (especially in those with mild cases or if other handicaps are also present). It may be confused with other diseases, such as fragile X syndrome, tuberous sclerosis, and untreated phenylketonuria.

Autism is diagnosed by observing the child's behavior, communication skills, and social interactions. Medical tests should rule out other possible causes of autistic symptoms. Criteria that mental health experts use to diagnose autism include: problems with developing friendships

- problems with make-believe or social play
- endlessly repeated words or strings of words
- difficulty in carrying on a conversation

- obsessions with rituals or restricted patterns
- preoccupation with parts of objects

Some children have a few of the symptoms of autism, but not enough to be diagnosed with the "classical" form of the condition. Children who have autistic behavior but no problems with language may be diagnosed with "Asperger syndrome." Children who seem normal at first but who begin to show autistic behavior as they get older might be diagnosed with "childhood disintegrative disorder" (CDD). These problems are sometimes called "autistic spectrum disorders." It is also important to rule out other problems that seem similar to autism.

## **Treatment**

There is no cure for autism. Treatments are aimed at reducing specific symptoms. Because the symptoms vary so widely from one person to the next, there is not a single approach that works for every person. A spectrum of interventions includes training in music, listening, vision, speech and language, and senses. Special **diets** and medications may also be prescribed.

Studies show that people with autism can improve significantly with proper treatment. A child with autism can learn best with special teachers in a structured program that emphasizes individual instruction. The two most-often studied types of treatment are:

### **Educational or behavioral treatment**

Typically, behavioral techniques are used to help the child respond and decrease symptoms. This might include positive reinforcement (food and rewards) to boost language and social skills. This training includes structured, skill-oriented instruction designed to boost social and language abilities. Training needs to begin as early as possible, since early intervention appears to influence brain development.

Most experts believe that modern treatment is most effective when carried out at home, although treatment may also take place in a psychiatric hospital, specialized school, or day care program.

### **Medication**

No single medication has yet proved highly effective for the major features of autism. However, a variety of drugs can control self-injurious, aggressive, and other of the more difficult behaviors. Drugs also can control epilepsy, which afflicts up to 20% of people with autism.

Five types of drugs are sometimes prescribed to help the behavior problems of people with autism:

- stimulants, such as methylphenidate (Ritalin)
- antidepressants, such as fluoxetine (Luvox)
- opiate blockers, such as naltrexone (ReVia)
- antipsychotics
- tranquilizers.

Today, most experts recommend a complex treatment regimen that begins early and continues through the teenage years. Behavioral therapies are used in conjunction with medications.

### **Alternative treatment**

Many parents report success with megavitamin therapy. Some studies have shown that vitamin B<sub>6</sub> improves eye contact and speech and lessens tantrum behavior. Vitamin B<sub>6</sub> causes fewer side effects than other medications and

is considered safe when used in appropriate doses. However, not many health practitioners advocate its use in the treatment of autism, citing that the studies showing its benefit were flawed.

### **DMG (dimethylglycine)**

This compound, available in many health food stores, is legally classified as a food, not a vitamin or drug. Some researchers claim that it improves speech in children with autism. Those who respond to this treatment will usually do so within a week. Again, many doctors do not feel that the studies are adequate to promote this treatment.

### **Exercise**

One researcher found that vigorous **exercise** (20 minutes or longer, three or four days a week) seems to decrease hyperactivity, aggression, self-injury and other autistic symptoms.

### **Prognosis**

While there is no cure, with appropriate treatment the negative behaviors of autism may improve. Earlier generations placed autistic children in institutions; today, even severely disabled children can be helped in a less restrictive environment to develop to their highest potential. Many can eventually become more responsive to others as they learn to understand the world around them, and some can lead nearly normal lives.

People with autism have a normal life expectancy. Some people with autism can handle a job; they do best with structured jobs that involve a degree of repetition.

### **Prevention**

Until the cause of autism is discovered, prevention is not possible.

### **Antidepressants**

A type of medication that is used to treat depression; it is also sometimes used to treat autism.