

Nevada Department of Health and Human Services

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OVERVIEW and PREVALENCE: Autism Spectrum Disorders

What is autism?

Autism is one of a group of disorders known as autism spectrum disorders (ASDs). ASDs are developmental disabilities that cause substantial impairments in social interaction and communication and the presence of unusual behaviors and interests. Many people with ASDs also have unusual ways of learning, paying attention, and reacting to different sensations. The thinking and learning abilities of people with ASDs can vary—from gifted to severely challenged. An ASD begins before the age of 3 and lasts throughout a person's life.

ASDs include autistic disorder, pervasive developmental disorder - not otherwise specified (PDD-NOS, including atypical autism), and Asperger syndrome. These conditions all have some of the same symptoms, but they differ in terms of when the symptoms start, how severe they are, and the exact nature of the symptoms. The three conditions, along with Rett syndrome and childhood disintegrative disorder, make up the broad diagnosis category of pervasive developmental disorders.

Who is affected?

ASDs occur in all racial, ethnic, and socioeconomic groups and are four times more likely to occur in boys than in girls. CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network released data in 2007 that found about 1 in 150 8-year-old children in multiple areas of the United States had an ASD.

When can autism spectrum disorders be detected?

ASDs can often be detected as early as 18 months. While all children should be watched to make sure they are reaching developmental milestones on time, children in high-risk groups—such as children who have a parent or brother or sister with an ASD—should be watched extra closely. A child with any of the warning signs of ASDs should be checked by a health care professional.

Research shows that early intervention can greatly improve a child's development. CDC is working with national partners on a public awareness campaign to educate parents about how important it is to track their child's development in the first few years of life. The campaign, "Learn the Signs. Act Early," teaches parents, health care professionals, and child care providers about early childhood development, including early warning signs of autism and other developmental disabilities.

Is autism a new disorder?

Autism may seem like a modern disorder, but it's not. People have probably lived with what we know today as autism spectrum disorders throughout history. Some of the earliest published descriptions of behavior that sounds like autism date back to the 18th century. But the disorder did not have a name until the middle of the 20th century.

Autism was first identified as a specific disorder in 1943 by child psychiatrist Dr. Leo Kanner. Based on a study of 11 children, Dr. Kanner published the first description of what he called "autistic disturbances of affective contact." At about the same time, German scientist Dr. Hans Asperger, based on his study of 400 children, described another form of autism that became

known as Asperger syndrome. The criteria used to diagnose ASDs have changed many times since Kanner's original description.

What causes autism?

We have learned a lot about the symptoms of ASDs and have improved efforts to track the disorders, but we still don't know a lot about the causes of ASDs. Scientists think that both genes and the environment play a role, and there might be many causes that lead to ASDs. Family studies have been most helpful in understanding how genes contribute to autism. Studies have shown that among identical twins, if one child has autism, then the other will be affected about 75% of the time. In non-identical twins, if one child has autism, then the other has it about 3% of the time. Also, parents who have a child with an ASD have a 2%–8% chance of having a second child who is also affected.

For most people with ASDs, the cause is not known. But ASDs tend to occur more often than expected among people who have certain other medical conditions, including Fragile X syndrome, tuberous sclerosis, congenital rubella syndrome, and untreated phenylketonuria (PKU). Some harmful drugs taken during pregnancy also have been linked with a higher risk of autism, specifically, the prescription drug thalidomide.

CDC's Centers for Autism and Developmental Disabilities Surveillance and Epidemiology (CADDRE) are working together on a large, population-based study to better understand the possible risk factors for and causes of autism. Called the Study to Explore Early Development (SEED), this project will help answer the many questions needed to find the causes of autism and—if possible—come up with strategies to prevent this complex disorder.

What is the prevalence of Autism Spectrum Disorders (ASD)?

Data from several studies that used the current criteria for diagnosing autism and autism spectrum disorders (ASD), such as Asperger's disorder and pervasive developmental disabilities (PDD-NOS), found prevalence rates for ASDs between 2 and 6 per 1,000 individuals. Therefore, it can be summarized that between 1 in 500 (2/1,000) to 1 in 166 children (6/1,000) have an ASD.

How many children in the United States have an ASD?

There is not a full population count of all individuals with an ASD in the United States. However, using the prevalence data stated above, we can estimate that if 4 million children are born in the United States every year, approximately 24,000 of these children will eventually be diagnosed with an ASD. Assuming the prevalence rate has been constant over the past two decades, we can estimate that up to 500,000 individuals between the ages of 0 to 21 have an ASD. However, many of these individuals may not be classified as having an ASD until school-age or later. Since behaviors related to the ASDs are usually present before the age of 3 years, it is important to make sure the individuals are being identified and are receiving appropriate intervention services as early as possible.

How do the rates of ASDs compare with other childhood disabilities?

A study conducted by the Centers for Disease Control and Prevention, the Metropolitan

Atlanta Developmental Disabilities Surveillance Program, found the rate of autism for children ages 3 to 10 years to be 3.4 per 1,000 children which is lower than the rate for mental retardation (9.7 per 1,000 children); but higher than the rates for cerebral palsy (2.8 per 1,000 children), hearing loss (1.1 per 1,000 children) and vision impairment (0.9 per 1,000 children) found in the same study.

Approximately 2% of children under the age of 18 have a serious developmental disability (DD) and these include mental retardation, cerebral palsy, hearing loss and vision impairment. Of these serious DDs, mental retardation (or intellectual disability) is the most common. A genetic disorder often associated with having mental retardation (MR) or an intellectual disability (ID) that many people recognize is Down syndrome. Current information indicate that having Down syndrome occurs in 1 out of 800 births and is slightly less common than the ASDs. Approximately 17% of children have some type of developmental disability, including more mild conditions such as speech and language disorders, learning disabilities, and ADHD, which appear to be more common than the ASDs.

While developmental disabilities may affect a child's speech or language, physical growth, psychological growth, self-care, or learning, children's health may also be affected by diseases that impact adults as well. A common childhood disease, juvenile diabetes, is prevalent in approximately one in every 400 to 500 children and adolescents, which is in a similar range of the ASDs. However, the ASDs are more common than childhood cancer, which has a prevalence rate of 1.5 per 10,000 children (1 in 300 males and 1 in 333 females have a probability of developing cancer by age 20 according to the National Cancer Institute).

How many children with ASDs are being served through public special education programs?

In 2003 approximately 141,022 children were served under the "Autism" classification for special education services. Not all children with an ASD receive special education services under the classification of "Autism", so the education data underestimate the actual prevalence of the ASDs.

How do the rates of ASDs in special education compare with that of other disabilities?

Autism was added as a special education exceptionality in 1991 and is now the 6th most commonly classified disability in the United States. The most common disability classifications in 2003 were: specific learning disabilities (2,866,908 children served), speech or language impairments (1,129,260 children served), mental retardation (582,663 children served), emotional disturbance (484,479 children served), and other health impairments, which often includes children diagnosed with ADHD (452,442 children served).

Has the number of children being served under an ASD classification in public special education programs changed?

Yes. In 1994 ASDs were the 10th most common disability serving children ages 6-21 in special education. Between 1994 and 2003 the number of children being classified as having an ASD has increased six-fold from 22,664 to 141,022. While it is clear that more children are getting Special Education services for Autism than ever before, it is important to remember that this classification was only added in the early 1990's and the growth of children classified may be in part due to the addition of this as a special education category.

Summary

While, it is clear that more children than ever before are being classified as having an Autism Spectrum Disorder, it is unclear how much of this increase is due to changes in how we identify and classify ASDs in people, or whether this is due to a true increase in prevalence. However, using our current standards, the ASDs are the second most common serious developmental disability after mental retardation/intellectual impairment, but are still less common than other conditions that affect children's development, such as speech and language impairments, learning disabilities, and ADHD. The impact of having a developmental disability is immense for the families affected and for the community services that provide intervention and support for these families. It is important that we treat common DDs, and especially the ASDs, as conditions of urgent public health concern, do all we can to identify children's learning needs, and begin intervention as early as possible to enable all children to reach their full potential.

Source: National Center on Birth Defects and Developmental Disabilities