

# American Academy of Pediatrics



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## The Prevalence of Autism Spectrum Disorders

The American Academy of Pediatrics (AAP) has prepared this Q&A to answer parents' questions about autism.

A national survey of parents showed the prevalence of autism spectrum disorders (ASDs) is approximately 1 in 91 U.S. children. The study, "The Prevalence of Parent-Reported Diagnosis of Autism Spectrum Disorder Among Children in the United States, 2007," was published in the Oct. 5, 2009, issue of *Pediatrics*. The study drew on data from the 2007 National Survey of Children's Health, a telephone survey of parents conducted jointly by the Health Resources and Services Administration and the Centers for Disease Control and Prevention.

### 1. What did this study find?

Based on parents' responses to a telephone survey, the prevalence of ASD was 1 in 91 children (ages 3-17), or 1 percent of the U.S. population. Odds for having an ASD were four times higher for boys than for girls. Most of the parents of children with ASD described the condition as "mild" or "moderate." About 38 percent of the children who were ever diagnosed with ASD were no longer reported by their parents to have the diagnosis. Children diagnosed with ASD had more problems obtaining referrals and coordinating their health care.

### 2. How does this compare to other studies?

Recent studies have reported the prevalence of ASDs ranging from 1 in 200 children to 1 in 111 children. ASD rates in these studies vary according to child age, gender, race or ethnicity, geographic location, and socioeconomic status. The statistic most often quoted -- 1 in 150 children -- comes from the Autism and Developmental Disabilities Monitoring (ADDM) Network, which looked at 8-year-olds in 15 cities in 2002. ADDM data is more accurate than a survey based on parent responses because it confirms the reports of parents and caregivers with a review of the children's medical records.

### 3. Why is the prevalence of ASDs higher?

Heightened public awareness and the fact that services are available to treat children with ASD may lead to more diagnoses than in the past. Children now diagnosed with ASD might have been given a different diagnosis (such as mental retardation or language disorder) in the past, or children with mild symptoms may not have been diagnosed with any disability. Also, the average age of diagnosis is decreasing; that means a higher total prevalence at any one point in time.

Pediatricians are actively screening for ASD and are willing to make the diagnosis at younger ages and in a broader population.

It's also possible there is a true increase in the incidence of ASDs. The answers to this question will come from well-designed, population-based, prospective studies that examine rates in the same population and use the same classification methods over time.

#### **4. Why did some children “lose” their autism diagnosis? Did they recover?**

Some children with ASD may improve over time to the extent that they might no longer meet diagnostic criteria for the disorder. Studies have found 3 percent to 25 percent of children improve to the point they are no longer considered to have autism. However, they may continue to have other developmental and behavioral symptoms. The children who improve are likely to have good learning abilities and to have received behavioral therapy. The AAP advocates early screening at 18 and 24 months of age and early diagnosis to enable effective interventions so that children with autism and related disorders may reach their maximum potential.

#### **5. What do scientists know about the causes of ASD?**

The variability of ASD has posed a great challenge for researchers looking for a cause. It is likely there are many factors that contribute to ASD:

- Genetics: Studies have identified a clear genetic component to ASD. There appear to be multiple genes that predispose an individual for the development of specific symptoms of ASD. Identifiable genetic conditions may account for 10 percent to 20 percent of ASD cases. Siblings of children with ASD have a higher likelihood of being diagnosed with an ASD, or to have isolated symptoms of ASD.
- Environment: Researchers are exploring many promising lines of study, including what environmental factors during pregnancy could affect the developing brain. There is evidence that prenatal exposure to particular medications (such as valproate), testosterone level, alcohol exposure, and infections (including rubella and cytomegalovirus) may be associated with an increased risk of ASD. Children born prematurely and at very low birthweights are also at higher risk of ASD. Large epidemiologic studies, such as the National Children's Study, funded by the National Institutes of Health, will be able to examine the exposures in children. The one exposure that has been studied is vaccines. Expert review of the scientific literature finds no causal link between vaccines and autism.
- Neurobiology: Scientists examining brain function are identifying abnormal connectivity between brain cells responsible for imitation, facial expression and sensory processing. This type of research may help explain why people with autism have difficulties with learning and understanding social interaction.

The information contained in this publication should not be used as a substitute for the medical care and advice of your pediatrician. There may be variations in treatment that your pediatrician may recommend based on individual facts and circumstances.