

Changes in Prevalence of Parent-Reported Autism Spectrum Disorder in School-Aged U.S. Children: 2007 to 2011-2012

Stephen J. Blumberg, Ph.D.
Matthew D. Bramlett, Ph.D.
Michael D. Kogan, Ph.D.
Laura A. Schieve, Ph.D.
Jessica R. Jones, M.P.H.
Michael C. Lu, M.D., M.P.H.



Centers for Disease Control and Prevention
National Center for Health Statistics

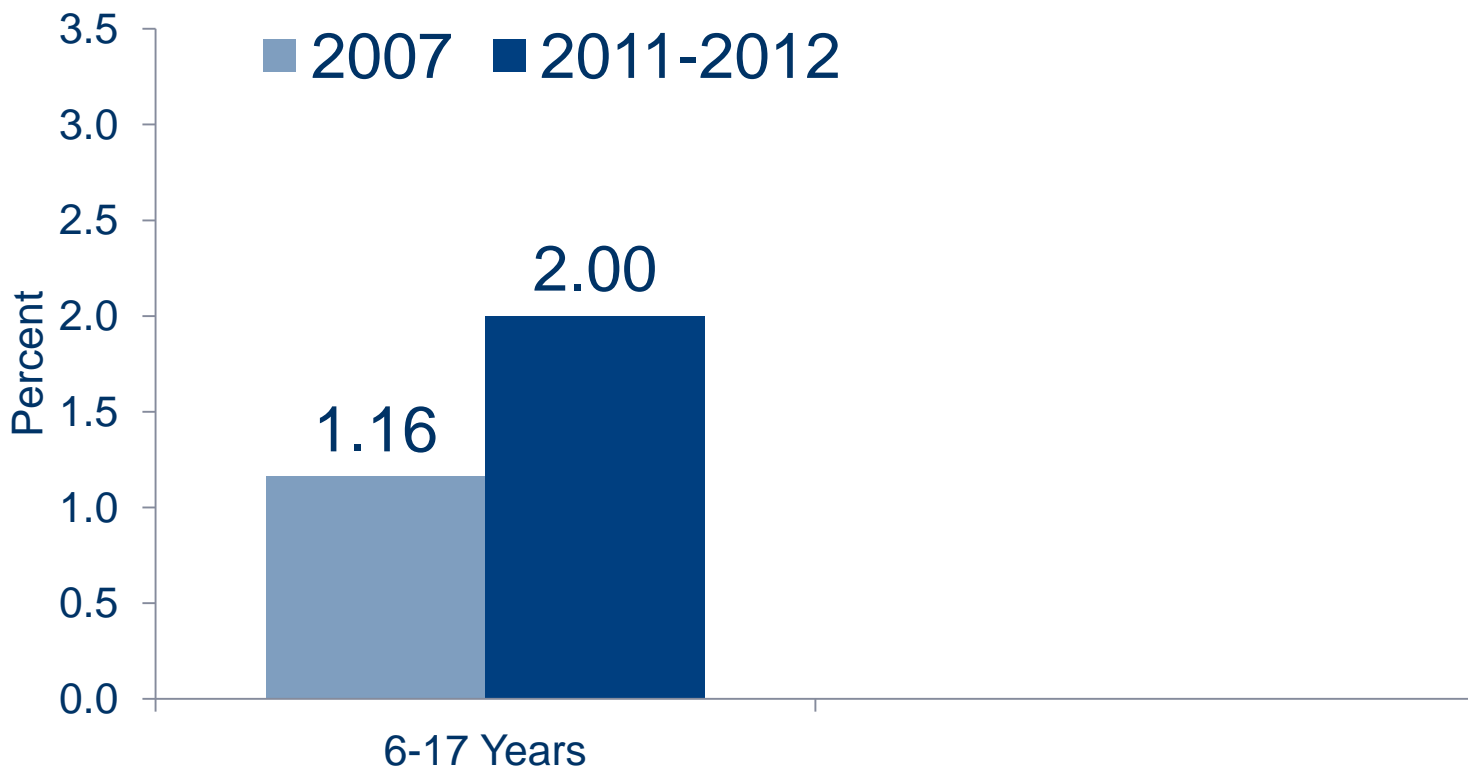
National Health Statistics Report #65
Released March 20, 2013

National Survey of Children's Health Questions to Identify Parent-Reported ASD

- Has a doctor or other health care professional ever told you that your child had autism, Asperger disorder, pervasive developmental delay, or other autism spectrum disorder?
- Does your child currently have autism or autism spectrum disorder?



Percentage of children aged 6-17 years with parent-reported ASD: U.S., 2007 and 2011-2012



1-in-50, or 1-in-88?

National Survey of Children's Health

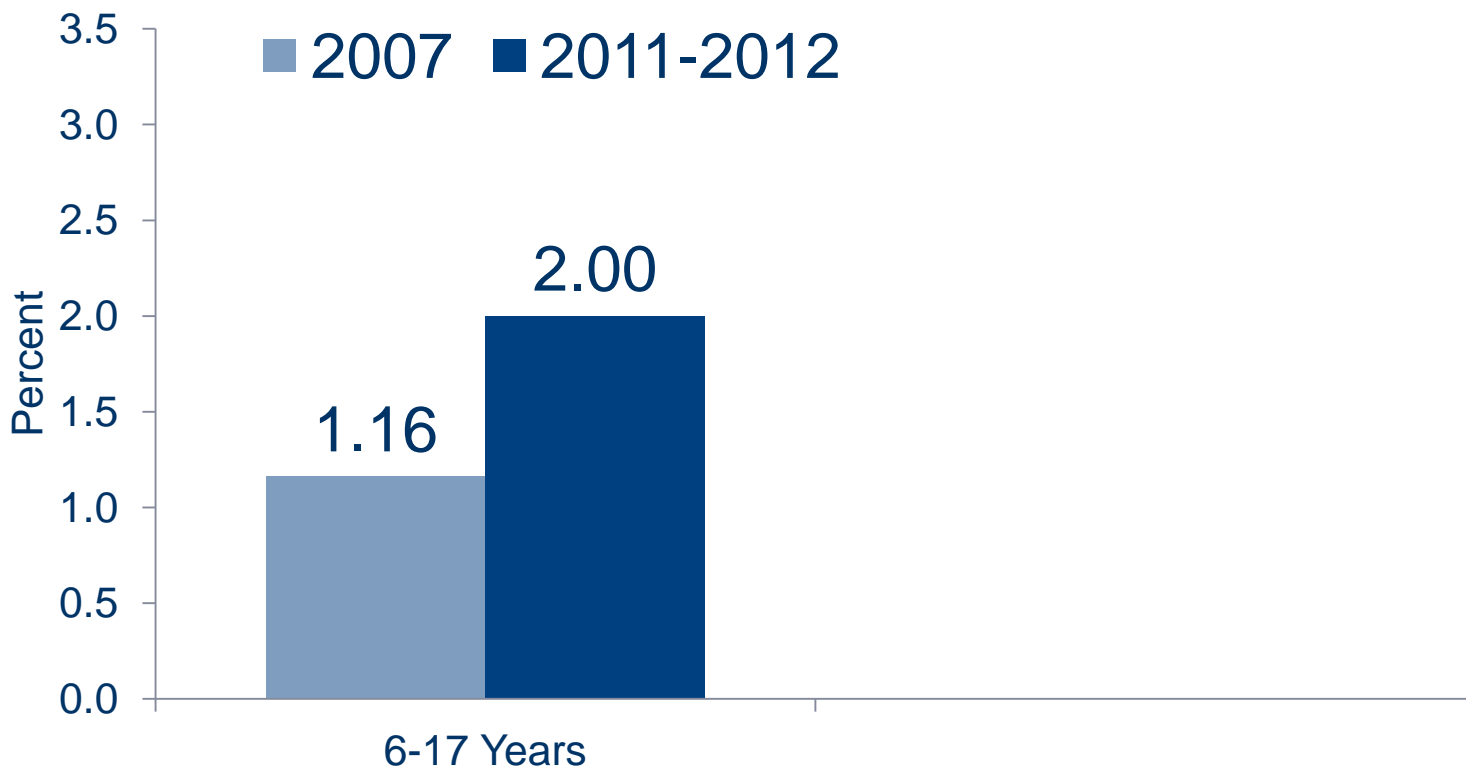
- 1 in 50
- Data from 2011-2012
- Telephone survey of parents
- School-age children 6-17
- National, in all 50 states and DC

Autism and Developmental Disabilities Monitoring Network

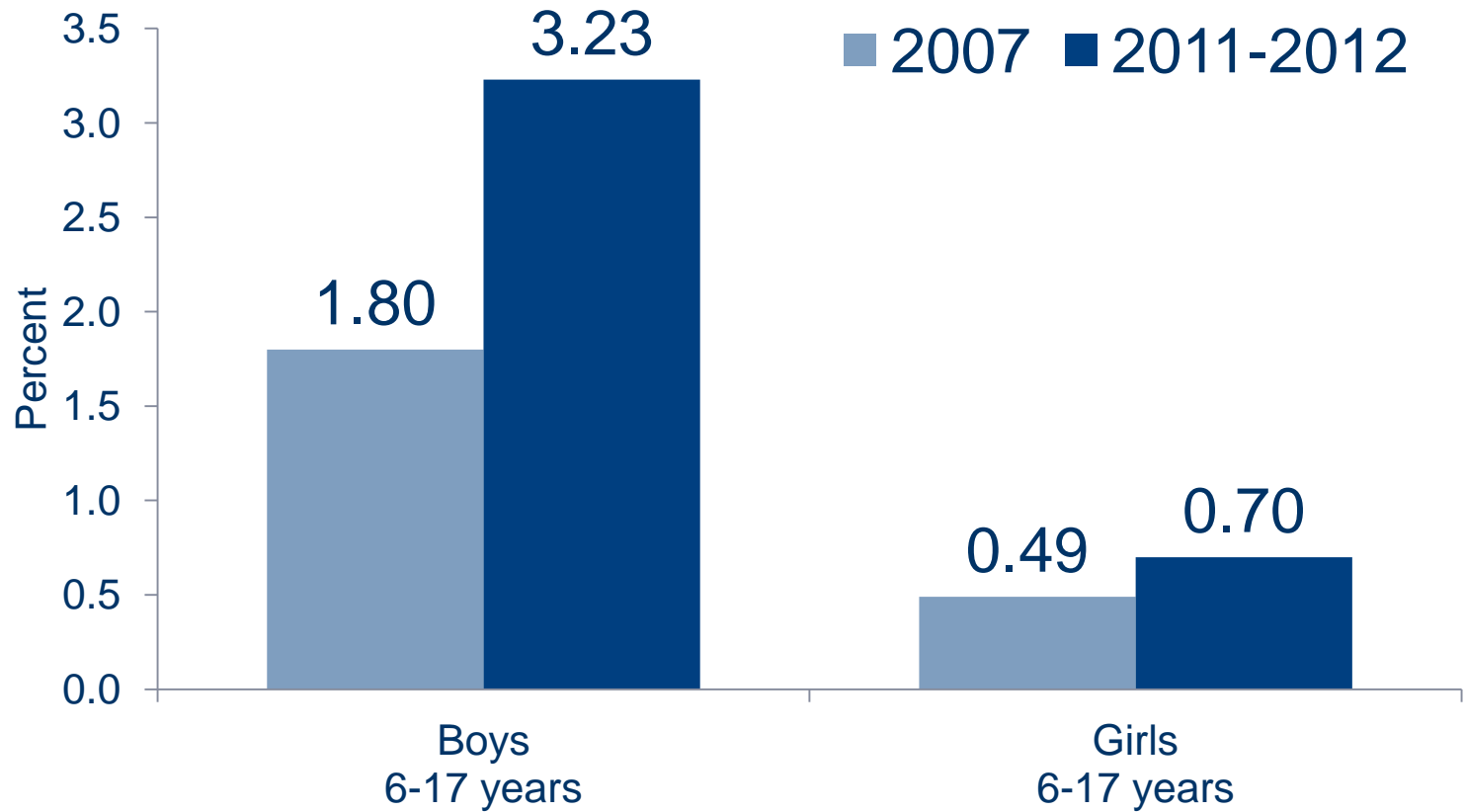
- 1 in 88
- Most recent estimate is for 2008
- Medical and educational record review
- 8-year-olds
- 14 sites



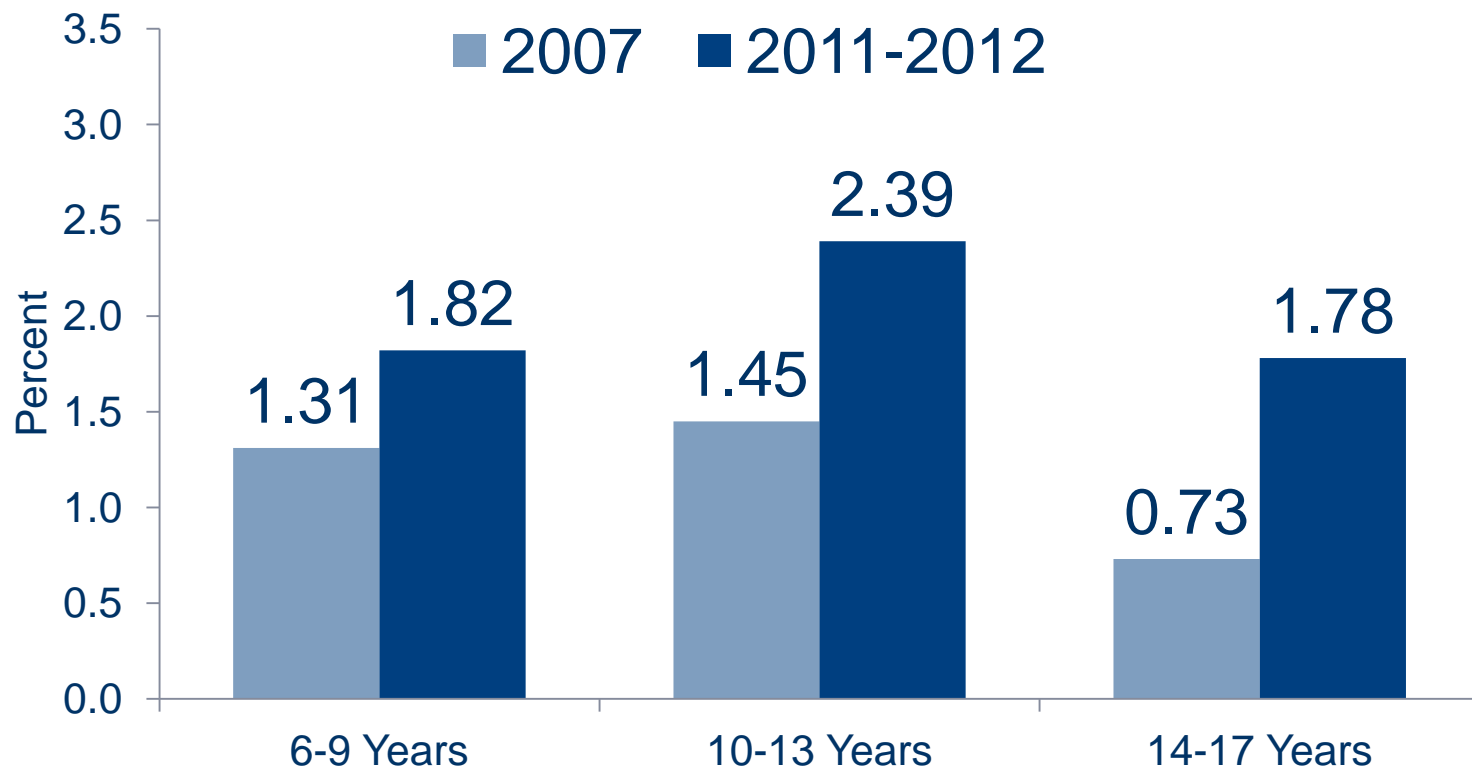
Percentage of children aged 6-17 years with parent-reported ASD: U.S., 2007 and 2011-2012



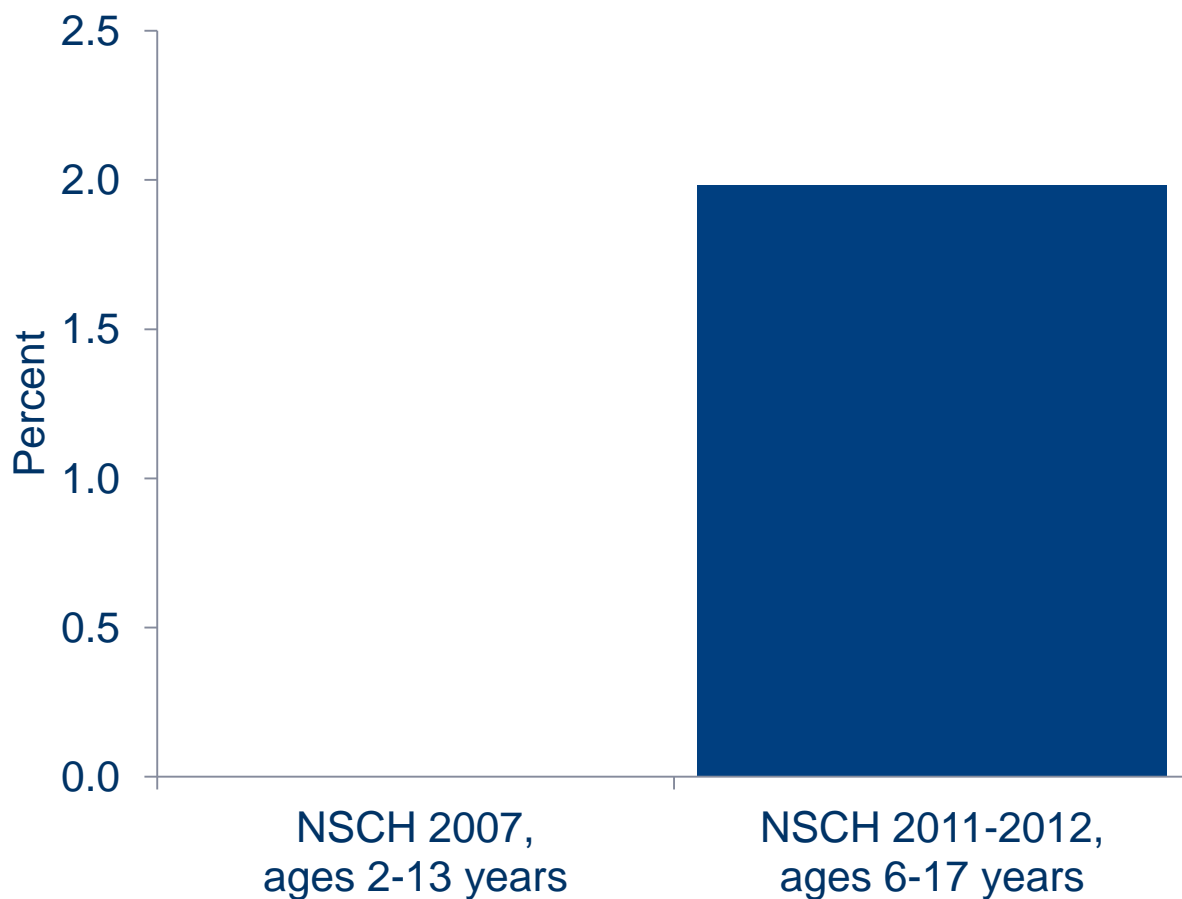
Percentage of children aged 6-17 years with parent-reported ASD, by sex: U.S., 2007 and 2011-2012



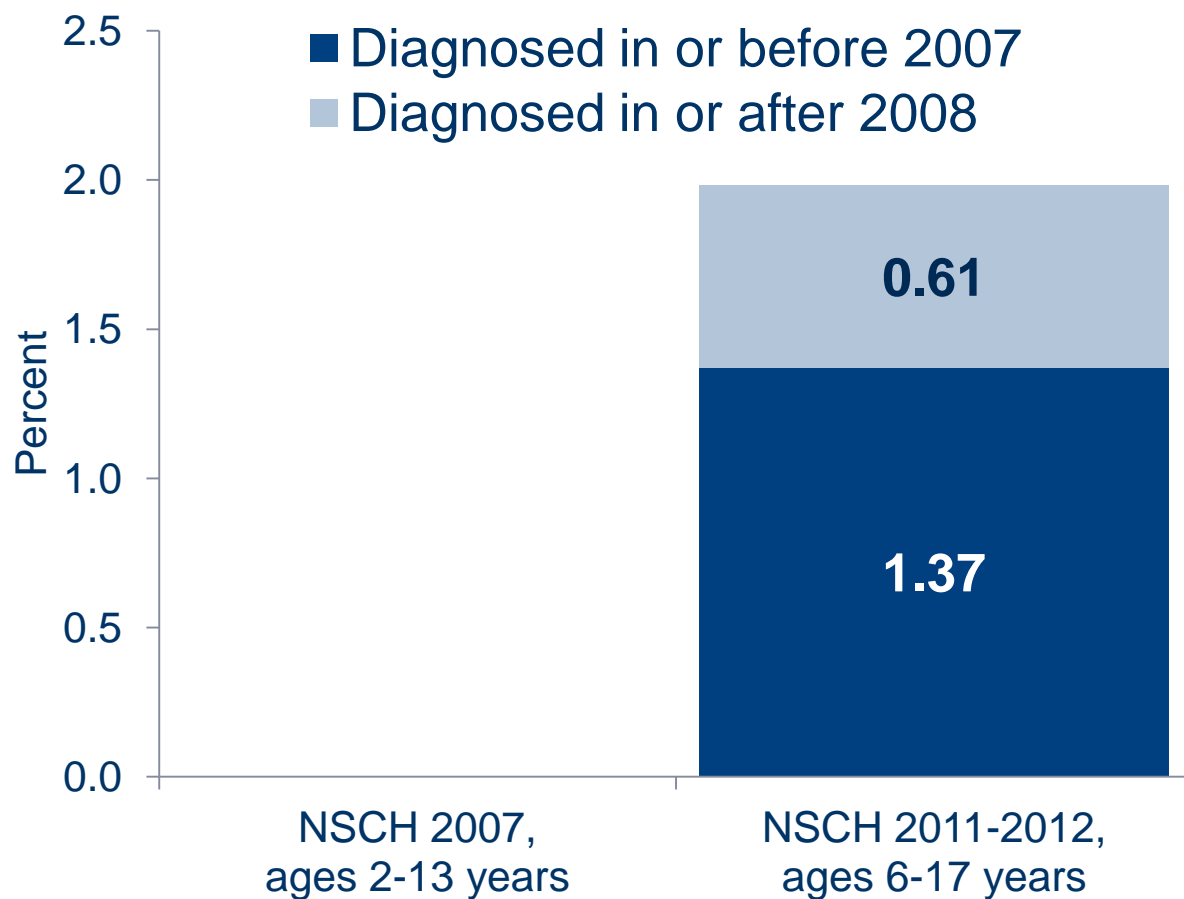
Percentage of children aged 6-17 years with parent-reported ASD, by age group: U.S., 2007 and 2011-2012



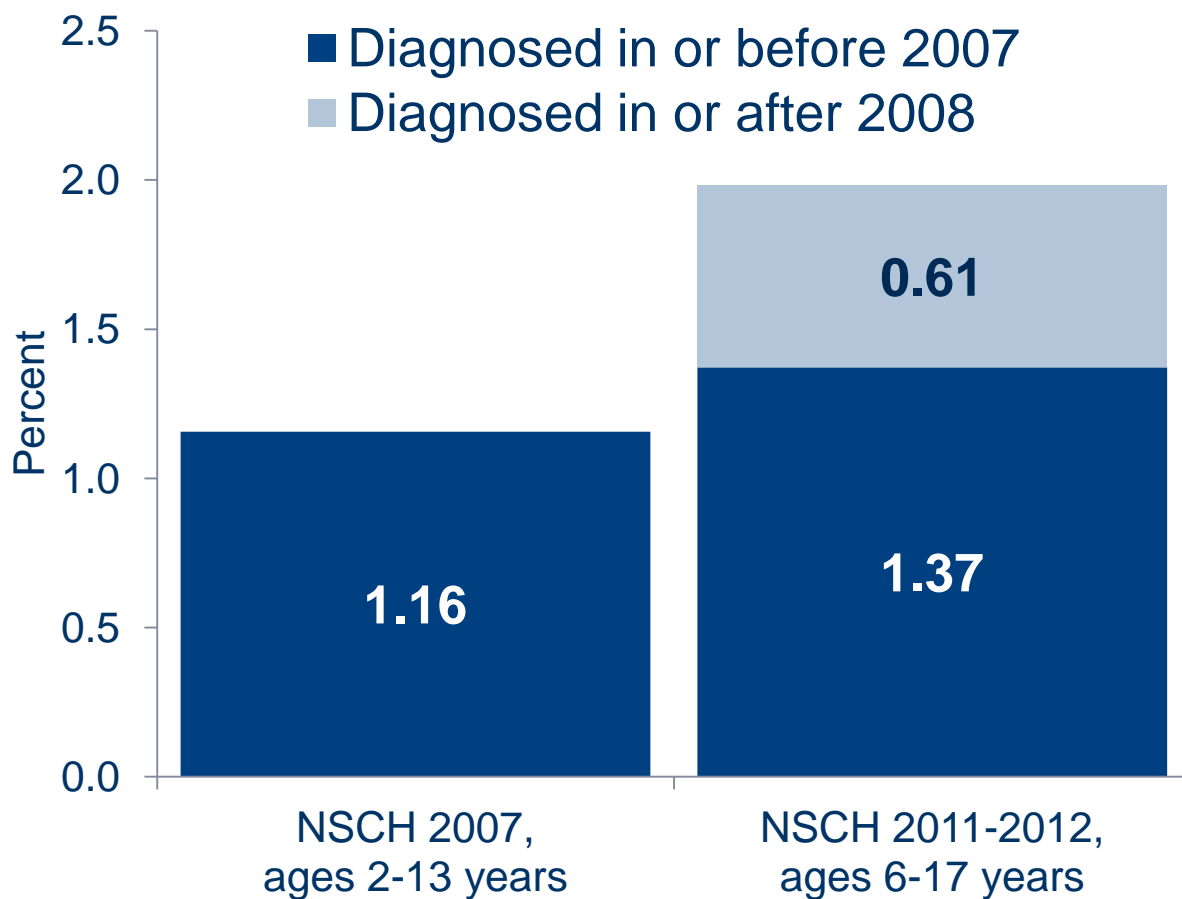
Percentage of children born in 1994-2005 who have parent-reported ASD, by survey and approximate year when diagnosed with ASD



Percentage of children born in 1994-2005 who have parent-reported ASD, by survey and approximate year when diagnosed with ASD



Percentage of children born in 1994-2005 who have parent-reported ASD, by survey and approximate year when diagnosed with ASD

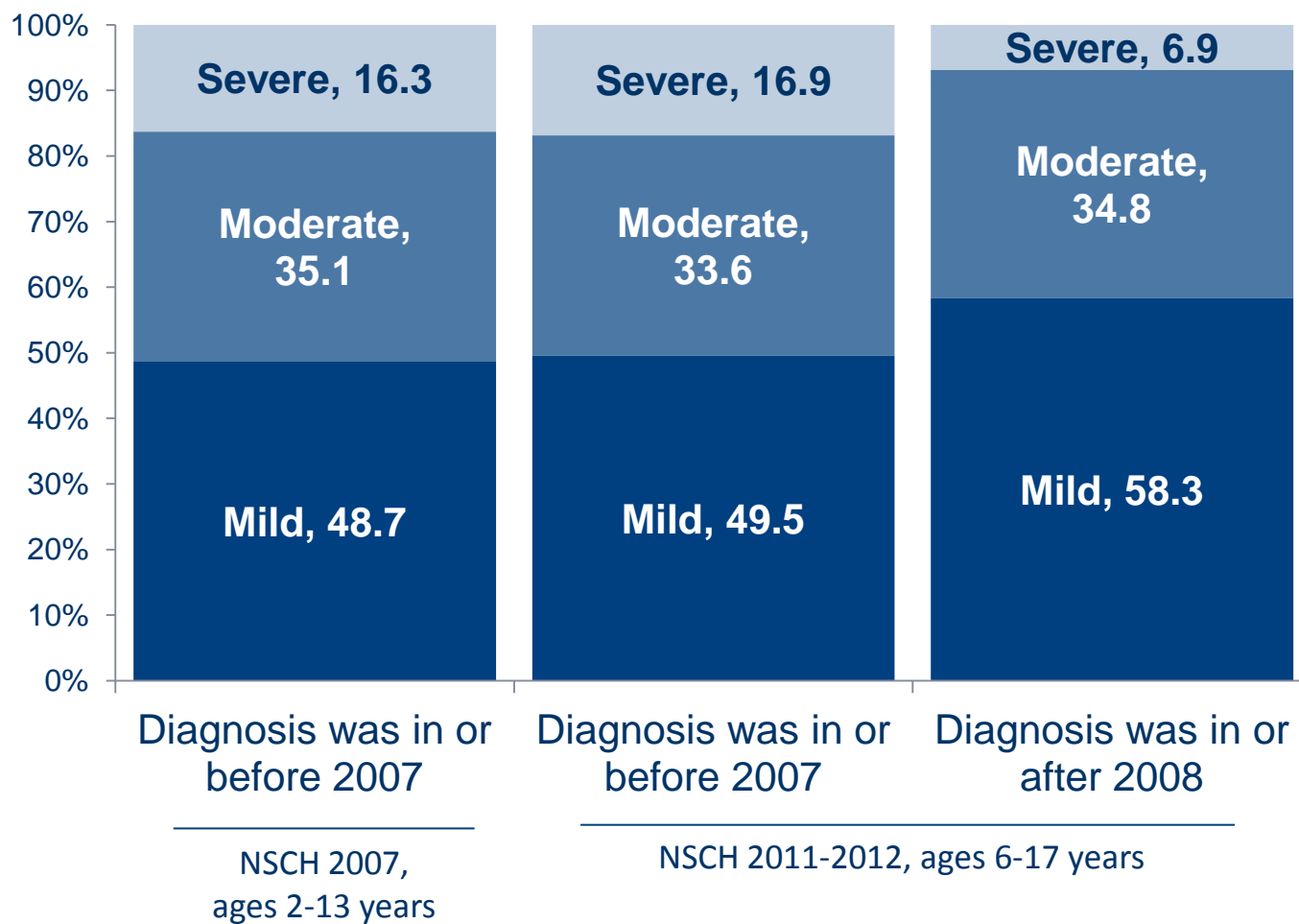


Potential Explanations for the Observed Increase in Prevalence

- Less likely explanations
 - Differential survey measurement error
 - Increased survey nonresponse bias over time
 - Inclusion of cell-phone numbers in 2011-2012
 - Rise in ASD symptoms among school-aged children
- More likely explanation
 - Recent diagnoses of children with previously unrecognized ASD



Percent distribution of parent-rated severity of ASD, by survey and approximate year when diagnosed with ASD



Conclusions

- Differential survey measurement error over time was not a major contributor to observed prevalence changes.
- Much of the prevalence increase from 2007 to 2011-2012 for school-aged children was the result of diagnoses of children with previously unrecognized ASD.



National Health Statistics Reports

Number 65 ■ March 20, 2013

Changes in Prevalence of Parent-reported Autism Spectrum Disorder in School-aged U.S. Children: 2007 to 2011–2012

by Stephen J. Blumberg, Ph.D., Matthew D. Bramlett, Ph.D., National Center for Health Statistics;
Michael D. Kogan, Ph.D., Maternal and Child Health Bureau;
Laura A. Schieve, Ph.D., National Center on Birth Defects and Developmental Disabilities;
Jessica R. Jones, M.P.H., and Michael C. Lu, M.D., M.P.H., Maternal and Child Health Bureau

Abstract

Objectives—This report presents data on the prevalence of diagnosed autism spectrum disorder (ASD) as reported by parents of school-aged children (ages 6–17 years) in 2011–2012. Prevalence changes from 2007 to 2011–2012 were evaluated using cohort analyses that examine the consistency in the 2007 and 2011–2012 estimates for children whose diagnoses could have been reported in both surveys (i.e., those born in 1994–2005 and diagnosed in or before 2007).

Data sources—Data were drawn from the 2007 and 2011–2012 National Survey of Children's Health (NSCH), which are independent nationally representative telephone surveys of households with children. The surveys were conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics with funding and direction from the Health Resources and Services Administration's Maternal and Child Health Bureau.

Results—The prevalence of parent-reported ASD among children aged 6–17 was 2.00% in 2011–2012, a significant increase from 2007 (1.16%). The magnitude of the increase was greatest for boys and for adolescents aged 14–17. Cohort analyses revealed consistent estimates of both the prevalence of parent-reported ASD and autism severity ratings over time. Children who were first diagnosed in or after 2008 accounted for much of the observed prevalence increase among school-aged children (those aged 6–17). School-aged children diagnosed in or after 2008 were more likely to have milder ASD and less likely to have severe ASD than those diagnosed in or before 2007.

Conclusions—The results of the cohort analyses increase confidence that differential survey measurement error over time was not a major contributor to observed changes in the prevalence of parent-reported ASD. Rather, much of the prevalence increase from 2007 to 2011–2012 for school-aged children was the result of diagnoses of children with previously unrecognized ASD.

Keywords: autism prevalence • pervasive developmental disabilities • national estimates • State and Local Area Integrated Telephone Survey

Introduction

Autism spectrum disorder (ASD) is a set of complex neurodevelopmental disorders that include autistic disorder, Asperger disorder, and pervasive developmental disorder not otherwise specified (1). Children who have ASD display mild to severe impairments in social interaction and communication along with restricted, repetitive, and stereotyped patterns of behaviors, interests, and activities. Diagnosis of ASD should be based on comprehensive behavioral evaluations, making diagnostic assessment complex and time-consuming.

ASD symptoms typically can be identified in children as young as 18 months (2), and the American Academy of Pediatrics recommends developmental screening of all children by age 24 months (3). Nevertheless, many children with ASD—especially those with only mild or limited speech delays—may not be diagnosed until they are of school age, when parents become concerned about an inability to make friends and teachers notice difficulties with peer interactions (3). Formal diagnoses may also occur at this age because a named disability (such as ASD) is needed for



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

