

INVESTMENT IN RESEARCH SAVES LIVES AND MONEY

Autism

Autism spectrum disorder (ASD) is a developmental disorder that affects communication and behavior. Type and severity of symptoms vary but can include challenges with social skills, difficulty communicating and interacting with others, and repetitive behaviors. Because autism is a spectrum disorder, each person has a distinct set of strengths and challenges requiring varying levels of support.¹

TODAY

ASD affects **4 times** more boys than girls.²

44% of children with ASD have average to above average intellectual ability.³

ASD affects roughly **1 in 59** children in the U.S.²

Approximately **10%** of individuals with ASD also have other genetic and chromosomal disorders.²

Research Delivers Solutions

A 2018 study found that both deleted and duplicated DNA sequences in the human genome may predispose children to ASD. The discovery was made by analyzing more than **9,000 genomic sequences** from families affected by autism from two large databases – the Simons Simplex Collection and the Autism Speaks **MSSNG Whole Genome Sequencing Project**.⁵ This study provides a foundation for more effectively characterizing the genetic elements that influence risk for ASD and related conditions.

For years, researchers have documented **gastrointestinal issues** and problematic behaviors, such as aggression, in many children with ASD. A 2019 study found that some problem behaviors in children with ASD might actually be indicative of gastrointestinal distress. Children with ASD who are nonverbal or have difficulty communicating may **not be able to express health challenges**, such as gastrointestinal discomfort.⁶ This study indicates that addressing gastrointestinal issues might **alleviate aggressive behaviors** providing hope for improved quality of life for the individual with ASD, as well as for their family.

A recent randomized trial evaluated the efficacy of the **SCERTS model**, a new classroom-based, teacher-implemented intervention therapy for improving engagement, communication, social skills, and problematic behavior for children with ASD. Compared with the standard school-based education with autism training modules, the study found **better social interaction outcomes** for the SCERTS group, providing further evidence to support classroom-based therapies that can improve core symptoms of ASD.⁷

Research has also found that ASD can sometimes be detected at 18 months or younger. For this reason, **standardized screening** for ASD with ongoing developmental monitoring continues to be recommended. A 2016 study found that a new screening tool, the **Observation Scale for Autism (OSA)**, may provide a more sensitive tool for ASD screening.^{8,9}

COST

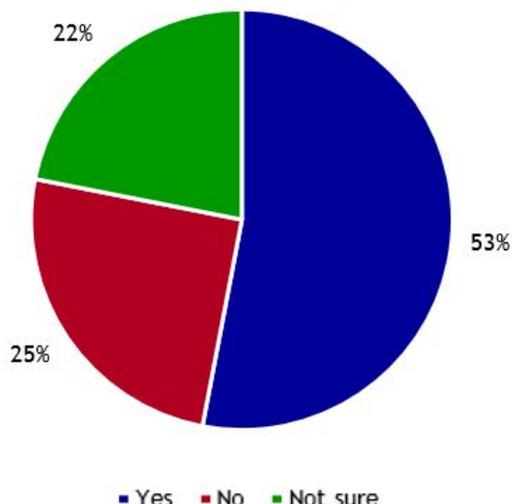
By 2015, the cost of caring for Americans with autism reached **\$268 billion** and is expected

to increase to **\$461 billion** by 2025.⁴

In 2015, medical costs for children with ASD were **4 to 6 times** greater on average than for those without autism.⁴

The majority of costs in the U.S. for ASD per year are for adult services – roughly **\$175 to \$196 billion**.⁴

Would you be willing to pay \$1 per week more in taxes if you were certain that all of the money would be spent on additional medical research?



Source: A Research!America poll of U.S. adults conducted in partnership with Zogby Analytics in January 2019

Autism

Then. Now. Imagine.

THEN

In 1908, the word autism was used to describe a subset of schizophrenic patients who were especially withdrawn.¹⁰

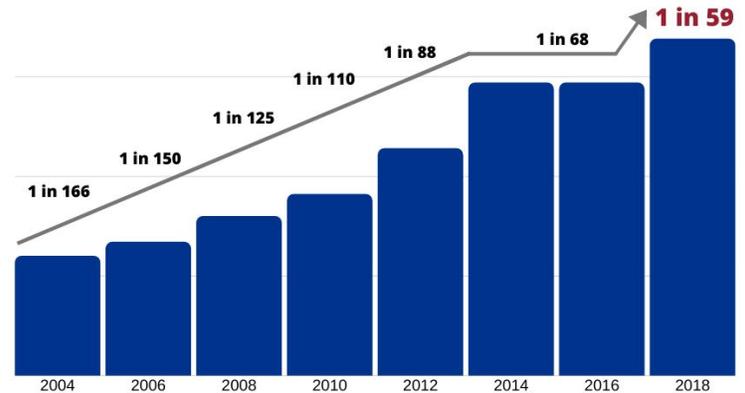
NOW

Autism is now recognized as a distinct neurodevelopmental condition, with extremely varied expression of its common core symptoms.

IMAGINE

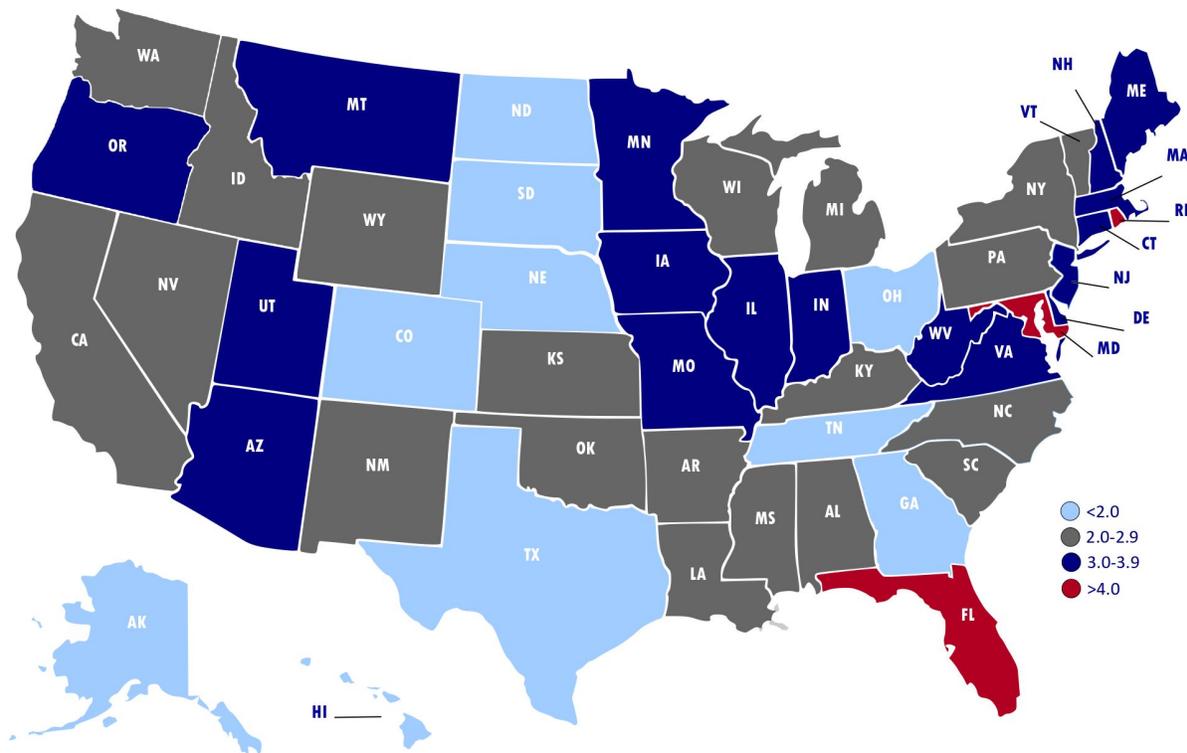
Universal understanding and acceptance of those with ASD.

Estimated Autism Spectrum Disorder Prevalence for 2018 (Based on 2014 records)



SOURCE: "Autism and Developmental Disabilities Monitoring (ADDM) Survey" - United States, 2014, Centers for Disease Control and Prevention.¹¹

Autism Spectrum Disorder Prevalence % in the U.S. (Weighted estimates by State, 2016)



1. "Autism Spectrum Disorder". National Institutes of Health. 2019.
 2. "Data & Statistics on Autism Spectrum Disorder." Centers for Disease Control and Prevention. 2019.
 3. "Prevalence of Autism Spectrum Disorder." Centers for Disease Control and Prevention. 2018.
 4. "Autism and Health: A Special Report. Autism Speaks. 2017.
 5. Brandler *et al.* "Paternally inherited cis-regulatory structural variants are associated with autism." Science. 2018.
 6. "Relationship between gastrointestinal symptoms and problem behaviors in autism spectrum disorder." University of Missouri-Columbia. 2019.
 7. Hooker *et al.* "Cluster randomized trial of the classroom SCERTS intervention for elementary students with autism spectrum disorder." J Consult Clin Psychol. 2018.
 8. "Screening and Diagnosis of Autism Spectrum Disorder for Healthcare Providers". CDC. 2019
 9. Naglund *et al.* "The Observation Scale for Autism (OSA): A New Screening Method to Detect Autism Spectrum Disorder before Age Three Years." Journal of Intellectual Disability. 2016
 10. Broxmeyer. "The Science Behind Autism and the 'Developmental Disorders': Tortuous or Tortured? Glob J Intellect Dev Disabil. 2017.
 11. "Autism and Developmental Disabilities Monitoring (ADDM) Survey." United States. Centers for Disease Control and Prevention. 2014.
 12. Xu *et al.* "Prevalence and Treatment Patterns of Autism Spectrum Disorder in the United States, 2016". JAMA Pediatr. 2018.

SOURCE: Xu *et al.* "Prevalence and Treatment Patterns of Autism Spectrum Disorder in the United States, 2016". JAMA Pediatr. 2018.¹²

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