

The Truth About Autism and Vaccines

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It has been over two decades since the initial claim was made suggesting a link between vaccines and autism. Since that time, the worldwide scientific consensus has been made clear: there is no link between vaccines and autism.

Dozens of rigorous studies have thoroughly examined the relationship between autism and vaccines, with no evidence of any link. Below, we summarize key findings from these evidence-based studies, which you can explore further at this link: autismsciencefoundation.org/read-the-science-autism-and-vaccines/.

The original claim made by Andrew Wakefield connecting autism and the measles-mumps-rubella (MMR) vaccine was discredited in 2010 when the study was retracted for fraudulent data. Wakefield was stripped of his medical license, and his work was labeled “an elaborate fraud.”



Since that time, hundreds of millions of dollars have been spent to investigate any potential link between vaccines and autism. No environmental factor has been studied as extensively in as many people, and no link has been found between vaccines and autism—whether considering vaccine ingredients or the body's immune response to vaccines.^{1,2,3}

Interestingly, research shows that children with a family history of autism are more likely to be diagnosed with autism yet are less likely to be fully immunized.⁴ Additionally, families may be concerned about vaccinating a child with autism. However, studies demonstrated that individuals with autism or developmental disabilities do not have an exaggerated immune response to vaccines.¹

As healthcare and public health professionals, we know the facts: vaccines are safe, they protect public health, and there is no credible evidence linking them to autism. Even still, measles cases are rising and MMR vaccination rates continue to decline.⁵ A new survey by the Annenberg Public Policy Center reveals that 24% of U.S. adults continue to believe the false claim that the MMR vaccine causes autism, despite clear evidence stating otherwise.⁶



Fear of vaccine-related autism remains a major factor in vaccine hesitancy, a concern healthcare providers are actively working to address across the United States.⁷



Research has looked for a connection between autism and vaccines and none exists. However, some parents continue to believe this myth, putting their child at risk for preventable diseases.^{8,9,10}

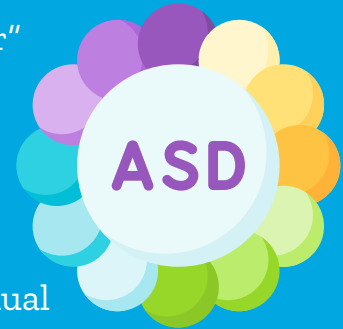
Therefore, it is essential to improve communication with parents regarding vaccines and the implications of the diseases they prevent. Below, we have provided facts about autism, frequently asked questions, and guidance on how to obtain the best support for your child after receiving a diagnosis.



Autism 101

What is autism spectrum disorder?

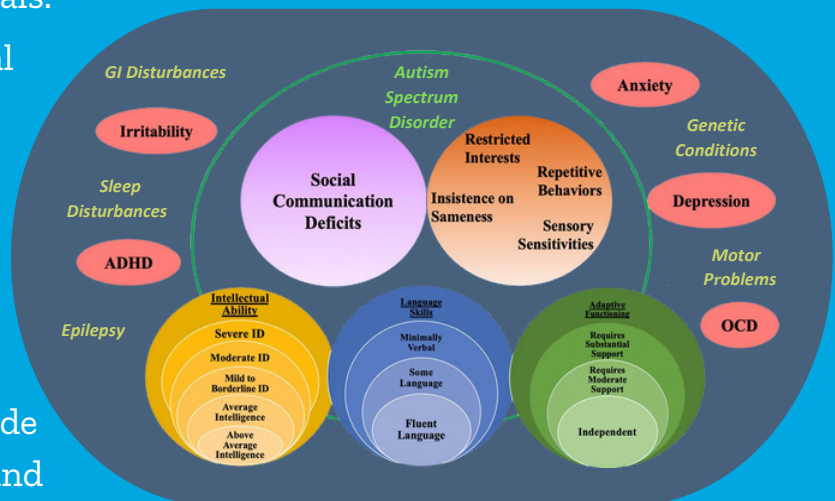
Autism is a group of brain-based disorders that impact behavior and social communication skills. In 2007, the various subtypes of autism were unified under the umbrella term “autism spectrum disorder” (ASD), reflecting the broad and complex range of abilities and challenges that individuals with this diagnosis may experience.¹¹ Due to this diversity, autism manifests in a different way for each person, and it is very common for media portrayals, or the experience of knowing one individual with autism, to lead to oversimplified or generalized assumptions.¹² However, it is not possible for a single environmental factor at a specific time to account for the wide variety of outcomes.



Regardless of the severity of autism, every individual diagnosed with the condition experiences some level of impairment in two primary areas:

- Social Communication: Challenges with interest in people, joint attention, imaginative play, and social interaction.
- Behavior: Repetitive behaviors, tantrums, aggression, and a strong reliance on routines or rituals.

While these two areas—social communication and behavior—offer a framework for understanding autism, they do not capture the full complexity of the condition. For families, a child’s autism often involves managing a wide range of medical conditions and behavioral challenges. In addition to the core features of autism, many individuals also experience associated symptoms, such as anxiety, depression, and aggression, as well as co-occurring conditions like sleep disturbances and epilepsy.¹³



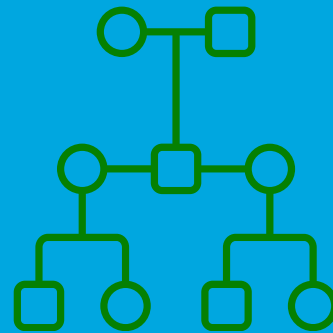
What causes autism?

While we cannot pinpoint an exact cause of autism, scientists are actively researching its origins and developing new treatments. Many believe that autism results from a combination of genetic and environmental factors. What we do know is that the brain's development is disrupted in some way.



Research indicates that about 15-20% of autism cases can be attributed to specific genetic causes.¹⁴ These cases involve relatively rare genetic variants directly contributing to autism. The genes associated with autism typically affect how brain cells develop proper connections, communicate with one another, and transmit information.¹⁵ This is why genetic testing is so important after a diagnosis.

Not only does genetic testing help deepen understanding of the condition, but it also connects families to advocacy groups and medical resources dedicated to specific genetic causes.



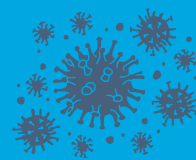
In some cases, autism may result from the combined effects of multiple genetic factors.



In addition to genetics, research has identified several environmental factors that may influence the likelihood of an autism diagnosis:

- **Gender:** Boys are diagnosed with autism about four times more frequently than girls, with both biological and sociological factors contributing to this disparity.¹⁶
- **Siblings:** Studies show that up to 20% of children with an older sibling diagnosed with ASD will also develop autism.¹⁷
- **Premature Birth and Low Birthweight:** Children born prematurely or with extremely low birth weight are at a higher risk for autism.¹⁸
- **Parental Age:** Older age at conception, both for mothers and fathers, is associated with an increased likelihood of autism.¹⁹
- **Infections During Pregnancy:** Illnesses like rubella and influenza during pregnancy can increase the likelihood of autism—illnesses that can be prevented by vaccines.²⁰
- **Environmental Exposures:** Exposure to certain anti-epileptic drugs or high levels of air pollution during pregnancy has been linked to a higher risk of autism in children.^{21,22}
- **Metabolic Disorders:** Some studies have connected metabolic conditions like gestational diabetes to a later autism diagnosis.²³

While the exact cause of autism remains unclear, ongoing research continues to explore the complex interaction between genetics and the environment, helping to further our understanding and improve support for individuals with autism and their families.




How is a diagnosis made?

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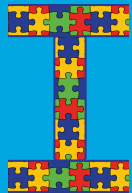
A diagnosis of autism is made by a trained clinician who assesses specific impairments in social communication, along with associated behaviors such as aggression, self-injury, sensitivity to lights or sounds, or a strong preference for routines or order.¹³

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The number of children diagnosed with autism is now 1 in 36, a significant increase over past decades.²⁴ This rise may reflect a true increase in prevalence, changes in diagnostic criteria, or greater awareness of autism.

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Over the years, diagnostic criteria for autism have broadened, and improved awareness has led to increased access to services. The

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good news is that we are now able to diagnose autism at younger ages.²⁵ The American Academy of Pediatrics (AAP) recommends routine autism screening during 18-month and 24-month well-baby visits.²⁶ Pediatricians may use various tools for early

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identification, including the Modified Checklist for Autism in Toddlers (M-CHAT) and the Screening Tool for Autism in Toddlers (STAT).²⁷

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While diagnosis still relies on behavioral observations, parent questionnaires, and clinical evaluation, some clinics now utilize advanced tools that monitor visual attention to various objects and individuals as part of the diagnostic process.²⁸

What are the signs of autism in infants?

The CDC and Autism Navigator have identified key early signs of autism to discuss with your doctor:^{29,30}

- Does not make eye contact or share enjoyment.
- Does not respond to their name by 9 months.
- Does not smile or laugh at you by 9 months.
- Does not "babble" or "coo" by 12 months.
- Does not gesture (point, wave, grasp) by 12 months.
- Does not imitate actions or words by 13 months.
- Does not say single words by 16 months.
- Experiences any loss of language or social skills at any age.



Why is an early diagnosis important?

Early diagnosis enables early intervention, which is key to helping children with autism make meaningful progress. Multiple studies have shown an improvement in children with autism following early behavioral intervention, and recently, scientists demonstrated that earlier intervention led to more drastic improvements.^{31,32} Early intervention is proven to be most effective when started as early as possible, though it remains beneficial at any age.³³



In addition to skill development, early intervention provides valuable resources, strengthens relationships between children, peers, and family members, improves behavior, and fosters long-term success in school.³⁴

It is essential that families receive a personalized intervention plan tailored to their child's unique needs to set them up for success. This plan often includes activities that parents can do at home to support their child's growth. For more information, visit Autism Navigator at www.autismnavigator.com.



Are there any available treatments for autism?

There have been significant advancements in evidence-based treatments for autism.³⁵ Below are some therapies that have been shown to be effective in clinical trials. Individuals with autism often benefit from a combination of these approaches to achieve success:

- **Behavioral Therapy, including ABA-based therapies:** Several Applied Behavior Analysis (ABA) models have strong evidence supporting their effectiveness. These include Naturalistic Developmental Behavioral Interventions (often branded differently but all aimed at promoting communication and learning), Pivotal Response Training, Discrete Trial Training, Relationship Development Intervention, and Functional Communication Training.
- **Speech Therapy:** Focuses on improving communication skills, both verbal and non-verbal.
- **Occupational Therapy:** Helps individuals develop skills for daily living and sensory processing.
- **Physical Therapy:** Aims to improve motor skills, balance, and coordination.
- **Pharmacological Interventions:** The FDA has approved medications like Risperdal and Abilify for managing symptoms associated with autism. Other medications are currently undergoing clinical trials.

As your child grows, their needs will evolve, and they will benefit from additional supports and interventions, including:

- **Vocational training** to prepare for future employment
- **Social skills support** to enhance interpersonal interactions
- **Daily living support** to promote independence
- **Treatments for co-occurring conditions** such as anxiety and ADHD



Unfortunately, parents of children with autism are often targeted by individuals offering unproven treatments, promising improvements with little to no scientific evidence.³⁶

Here are some therapies that have been shown to lack efficacy:

- Bleach or "anti-toxin" therapies, such as MMS (Miracle Mineral Solution)
- Horseback Riding Therapy
- Special Diets (e.g., Gluten- and Casein-Free)
- Vitamin Supplements
- Secretin Injections
- Anti-Fungal Agents
- Chelation Therapy
- Giant Electromagnets
- Hyperbaric Oxygen
- Therapy Holding
- Therapy Nicotine Patch
- Stem Cell Therapies
- Raw Milk



It is important for families to be cautious and consult with healthcare professionals before pursuing any alternative treatments. Learn more about these non-evidence-based treatments at www.autismsciencefoundation.org/beware-of-non-evidence-based-treatments.

Families of Autistic Children



Parents and siblings of children with autism often experience more stress than typical families or those with children who have other disabilities. This stress is frequently linked to challenges such as the child's difficulty with social interactions, behavioral issues, sleep disturbances, and the uncertainty that often comes with a diagnosis.

This stress, combined with a deep, unwavering love for their child, can sometimes drive parents to seek out non-evidence-based treatments. It's common for parents to hear anecdotal reports from others or the media claiming certain therapies are effective. In their desire for solutions, parents may even report significant improvements, sometimes even when the treatments are placebo-based.



Siblings of children with autism often face unique challenges that their peers with typically developing siblings may not experience. It's important to acknowledge their feelings without judgment, helping them understand that all feelings are normal—whether positive or negative.

Encouraging your children to participate in a sibling support group can create a space for them to connect with others facing similar situations and share their experiences. One great resource is the "Sam's Sibs Stick Together" program, a collaboration between the Autism Science Foundation and Els for Autism. To learn more about this program visit www.samssibssticktogether.com.



Receiving an autism diagnosis for your child can feel overwhelming and scary, but you are not alone and there are steps you can take to improve outcomes for your child with autism and your family. Below are additional resources to help you navigate this journey.

Additional Resources

Autism Science Foundation

The Autism Science Foundation (ASF) is a nonprofit organization dedicated to science and evidence. ASF funds autism research directly and supports families by reinforcing the message that no science currently exists to indicate that vaccines cause autism.

 Website: autismsciencefoundation.org

 Facebook: facebook.com/autismsciencefd

 Instagram: instagram.com/autismsciencefd

 X: x.com/autismsciencefd

 YouTube: youtube.com/@autismsciencefoundation6310

Vaccinate Your Family

Vaccinate Your Family is a non-partisan organization that protects people of all ages from vaccine-preventable diseases by:

- Offering vaccine education
- Championing community partners
- Advocating for equitable vaccine access
- Reigniting a culture of disease prevention through immunization

 Website: vaccinateyourfamily.org

 Facebook: facebook.com/vaccinateyourfamily

 Instagram: instagram.com/vaccinateyourfamily

 X: x.com/vaxyourfam

 YouTube: youtube.com/@vaccinateyourfamily

Autism Navigator

Autism Navigator is a unique collection of web-based tools and courses that integrate the most current research in autism with an interactive web platform and lots of video footage showing effective evidence-based practices.

 Autismnavigator.com

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