



Autism and Vaccines

QUESTIONS AND CONCERNS | PAGE 2 OF 9 | ALL PAGES ↓

For Everyone
DECEMBER 30, 2024

KEY POINTS

- Studies have shown that there is no link between receiving vaccines and developing autism spectrum disorder (ASD).
- No links have been found between any vaccine ingredients and ASD.

Vaccines do not cause autism

[Autism spectrum disorder \(ASD\)](#) is a developmental disability that can cause significant social, communication, and behavioral challenges.

Some people have had concerns that ASD might be linked to the vaccines children receive, but studies have shown that there is no link between receiving vaccines and developing ASD. The National Academy of Medicine, formerly known as Institute of Medicine, reviewed the safety of 8 vaccines to children and adults. The review found that with rare exceptions, these vaccines are very safe.[\[1\]](#)

A CDC study published in 2013 added to the research showing that vaccines do not cause ASD. The study focused on the number of antigens given during the first two years of life. Antigens are substances in vaccines that cause the body's immune system to produce disease-fighting antibodies. The results showed that the total amount of antigen from vaccines received was the same between children with ASD and those that did not have ASD.[\[2\]](#)

Vaccine ingredients do not cause autism

Thimerosal

One vaccine ingredient that has been studied specifically is thimerosal. Thimerosal is a mercury-based preservative used to prevent germs (like bacteria and fungi) from contaminating multidose vials of vaccines. Research shows that thimerosal does not cause ASD. In fact, a 2004 scientific review by the IOM concluded that "the evidence favors rejection of a causal relationship between thimerosal-containing vaccines and autism."[\[1\]](#)

Since 2003, there have been nine CDC-funded or conducted studies that have found no link between thimerosal-containing vaccines and ASD. These studies also found no link between the measles, mumps, and rubella (MMR) vaccine and ASD in children.

KEEP READING:
[Vaccines and Thimerosal](#)

Besides thimerosal, some people have had concerns about other [vaccine ingredients](#) in relation to ASD. However, no links have been found between any vaccine ingredients and ASD.

CDC Statement: 2004 MMR and Autism Study

CDC shares with parents and others great concern about the number of children with autism spectrum disorder.

CDC is committed to continuing to provide essential data on autism, search for factors that put children at risk for autism and look for possible causes. While doing so, we work to develop resources that help identify children with autism as early as possible so they can benefit from intervention services.

[CDC's study](#) about age at first Measles-Mumps-Rubella (MMR) vaccination and autism, published in *Pediatrics* in 2004, included boys and girls from different ethnic groups, including black children. The manuscript presented the results on two sets of children:

1. All children who were initially recruited for the study, and
2. the subset of children who had a Georgia birth certificate.

Access to the information on the birth certificates allowed researchers to assess more complete information on race as well as other important characteristics, including possible risk factors for autism such as the child's birth weight, mother's age, and education. This information was not available for the children without birth certificates; hence CDC study did not present data by race on black, white, or other race children from the whole study sample. It presented the results on black and white/other race children from the group with birth certificates.

The study looked at different age groups: children vaccinated by 18 months, 24 months, and 36 months. The findings revealed that vaccination between 24 and 36 months was slightly more common among children with autism, and that association was strongest among children 3-5 years of age. The authors reported this finding was most likely a result of immunization requirements for preschool special education program attendance in children with autism.[\[3\]](#)

The data CDC collected for this study continue to be available for analysis by others. CDC welcomes analysis by others that can be submitted for peer-review and publication. For more information on how to access this public-use dataset please go to the [this webpage](#).

Additional studies and a more recent rigorous review by the Institute of Medicine have found that MMR vaccine does not increase the risk of autism.

Vaccines protect the health of children in the United States so well that most parents today have never seen first-hand the devastating consequences of diseases now stopped by vaccines.

However, our 2019 measles count is the highest number since measles was declared eliminated in 2000. We do not want to lose any opportunity to protect all of our children when we have the means to do so.

What CDC is doing

Fact

CDC and FDA closely monitor the safety of all vaccines.



CDC and FDA are committed to monitoring the safety of vaccines. Once vaccines are licensed or authorized by FDA for use in the United States, CDC, FDA, and other federal agencies work together to monitor them using several safety systems.

KEEP READING:
[About CDC's Vaccine Safety Monitoring Program](#)

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SOURCES

CONTENT SOURCE:
[National Center for Emerging and Zoonotic Infectious Diseases \(NCEZID\)](#)

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