



## VACCINES AND AUTISM: IMPORTANT CONCLUSIONS FROM THE INSTITUTE OF MEDICINE

*Information for Health Care Professionals*

This fact sheet summarizes important conclusions from a report by the Institute of Medicine (IOM) on Vaccines and Autism. If you are involved in the administration of vaccines, you likely are familiar with allegations asserting that vaccines cause autism. In fact, you may have had patients, or their parents, raise concerns about vaccines and autism. In one study, 27% of family practitioners and pediatricians reported that parents sometimes or often raised concerns about possible neurologic effects of vaccination. The IOM's conclusions on vaccines and autism may be helpful to you in reassuring concerned parents about the safety of vaccines. **In their 2004 report, the IOM concluded that neither thimerosal-containing vaccines or MMR vaccine are associated with autism.**

Autism is a devastating disorder that causes tremendous emotional and economic burdens for families of children with autism. Autism research and monitoring are high priorities for CDC. Such efforts are essential in answering key questions about whether autism is increasing over time, determining the cause(s) of this condition, and developing treatment and prevention strategies.

Similar to above, vaccine safety research and monitoring continue to be high priorities for CDC. Such efforts are critical for ensuring that the United States continues to have the safest vaccine supply in history.

### IOM Report Background

In 2001, an IOM Immunization Safety Review Committee examined evidence and released reports related to: 1) the theory that MMR (measles-mumps-rubella) vaccine causes autism and 2) the theory that vaccines containing the preservative thimerosal cause neurodevelopmental disorders, including autism, attention deficit hyperactivity disorder (ADHD), and speech or language delay.

In a May 2004 report, the committee updated its conclusions and recommendations regarding vaccines and autism based on new epidemiologic evidence and biologic mechanism theories that have emerged on these topics since 2001. The evidence that the committee examined included:

- five new epidemiological studies examining thimerosal-containing vaccines and autism which consistently provided evidence of no association despite the fact that they utilized different methods and examined different populations (in Sweden, Denmark, the United States and the United Kingdom); and
- nine controlled observational studies, three ecological studies and two studies based on a passive reporting system in Finland which consistently showed evidence of no association between the MMR vaccine and autism.

The committee also examined several other studies which reported findings of associations between vaccines and autism, but described these as methodologically flawed, having non-transparent analytic methods (making their results uninterpretable), and/or non-contributory with respect to causality.

## Key Conclusions

The IOM Immunization Safety Review Committee's most notable conclusions were:

- **Neither thimerosal-containing vaccines or MMR vaccine are associated with autism.\***
- **The hypotheses regarding a link between autism and MMR vaccine and thimerosal-containing vaccines lack supporting evidence and are only theoretical.**
- **Future research to find the cause of autism should be directed toward other promising lines of inquiry that are supported by current knowledge and evidence and offer more promise for providing an answer.**

While hypotheses about vaccines and autism are only theoretical, the benefits of vaccination are proven. Vaccines are responsible for the control of many infectious diseases that were once common in this country, including polio, measles, diphtheria, pertussis (whooping cough), rubella (German measles), mumps, tetanus, and *Haemophilus influenzae* type b (Hib).

## Key Recommendations

The committee made a number of recommendations, including:

- The committee does not recommend a review of the licensure of MMR vaccine or recommendations for giving the MMR vaccine to children.
- The committee does not recommend a review of the current vaccine schedule or recommendations for administration of routine childhood vaccines based on hypotheses regarding thimerosal and autism.
- The committee emphasizes the need to communicate with parents about vaccines in a way that facilitates a two-way exchange of information and opinions and increases mutual trust.
- The committee also recommends that much more research be conducted on autism, including studies designed to help identify potential causes as well as effective treatments.

Go to <http://books.nap.edu/catalog/10997.html> for the IOM's complete report on Vaccine and Autism.

\* The committee's conclusion that MMR vaccine is not associated with autism is consistent with their 2001 report on the topic. The committee's conclusion in the 2004 report that thimerosal-containing vaccines are not associated with autism differs from their conclusion in 2001. In 2001, the committee concluded that there was not enough evidence to determine whether thimerosal was associated with neurodevelopmental disorders such as autism. The 2004 report explains that in 2001 there were no published epidemiological studies examining the potential association between thimerosal-containing vaccines and neurodevelopmental disorders. Since 2001, several studies have been published which the committee states "consistently provided evidence of no association."

For more information, visit [www.cdc.gov/nip](http://www.cdc.gov/nip), or call the CDC National Immunization Information Hotline (800) 232-2522 (English), (800) 232-0233 (Español), or (800) 243-7889 (TTY)  
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