

Thimerosal and Childhood Vaccines: What You Should Know

Is there thimerosal in childhood vaccines today?

Since 2001, all routinely recommended vaccines (except for the flu vaccine) made for young children in the U.S. contain no thimerosal or only trace amounts.

What is thimerosal?

- Thimerosal is an organic mercury-based preservative used in some vaccines, including some influenza vaccines.
- Thimerosal contains ethyl mercury. This is a different chemical compound than mercury found in the environment (methylmercury).
- Thimerosal has been used as a preservative since the 1930s to prevent bacterial growth in vials containing multiple doses of vaccine and other medical products.
- Thimerosal was also used as a preservative in other medical products such as some throat and nose sprays.

What is a trace amount?

- Thimerosal is still used in the early stages of the manufacturing process of a few vaccines to ensure the production line is sterile. It is removed through a purification process, with only trace remaining (about 1/100th of the amount found in older vaccines).
- Vaccines with trace amounts of thimerosal are labeled “preservative-free.” Vaccines that do not contain any thimerosal are labeled “thimerosal-free.”
- Manufacturers are working to remove this trace amount found in a few vaccines.

Is thimerosal bad for you?

- In rare instances, people have had a severe allergic reaction to thimerosal. This type of reaction is treatable, but requires immediate medical care.
- The current body of scientific research reviewed by the Minnesota Department of Health (MDH) and national health organizations shows no evidence of harm caused by the thimerosal in older vaccines, except that it might contribute to minor

reactions like redness and swelling at the injection site.

- MDH does encourage decreasing exposure to all sources of mercury as good public health promotion.

If a small amount of thimerosal isn't bad for you, why did they take it out of vaccines?

There is a broader goal legislated by Congress to remove as many sources of mercury exposure to people as possible. Unlike environmental sources of mercury that are hard to remove, the thimerosal in vaccines is a small, but easily removed, source of mercury. Manufacturers have worked to remove the thimerosal from infant vaccines and are now working to remove it from the influenza vaccines. MDH supports this.

Does thimerosal cause neurodevelopmental disorders?

Studies done to date show no association between neurodevelopmental disorders, such as autism, and thimerosal.

- A recent study (Sept. 2010) published in the journal *Pediatrics* looked at over 1,008 children and their exposure to thimerosal during pregnancy and early childhood and found that thimerosal-containing vaccines did not increase a child's risk of getting autism.
- A study (Jan. 2009) published in the journal *Pediatrics*, looked at over 1,400 children and found no association between thimerosal exposure in vaccines and developmental problems.
- In December 2007 the *Archives of General Psychiatry* published findings that autism cases in California continued to increase even after thimerosal was removed as a preservative from routine childhood shots in 2001.
- An article in the *New England Journal of Medicine* (Sept. 2007) analyzed data on over 1000 children and assessed 42 neuro-psychological outcomes. They did not find an association between early exposure to mercury from thimerosal and neuropsychological disorders. The authors consulted with a wide

Thimerosal and Childhood Vaccines -- page 2

variety of outside experts and advocates including experts in toxicology, epidemiology, biostatistics, psychology, vaccine safety and a representative from the autism advocacy community. (This study did not assess autism; the Centers for Disease Control and Prevention (CDC) is conducting a separate autism study.)

- A Canadian study (July 2006) found that thimerosal exposure from vaccines was unrelated to the increasing trend in pervasive developmental disorder prevalence.
- In a 2004 report, a panel of medical experts at the Institutes of Medicine reviewed dozens of studies and found no evidence that thimerosal in vaccines cause autism.
- The CDC examined the incidence of autism and other neurological disorders in relation to the amount of thimerosal in vaccines. Their report (Nov. 2003) found no change in autism rates relative to the amount of thimerosal a child received from vaccines in the first six months of life. In other words, a child who received more thimerosal was not more likely to be autistic.

Is there thimerosal in flu vaccines?

Yes. The majority of influenza vaccines distributed in the United States contain thimerosal as a preservative. However, an increasing amount is thimerosal-free. While the multiple dose vials still have thimerosal to prevent bacterial growth, the single-dose preparations do not. The amount of influenza vaccine that is thimerosal-free is growing every year.

Should my child get a flu vaccine?

Yes. There is the very real risk of influenza disease in children. Very young children often end up in the hospital when they get influenza. Six children eight years of age or less died from complications of the flu in Minnesota during the 2006-2007 flu season. On the other hand, scientific studies have shown no evidence of harm caused by the small doses of thimerosal in vaccines.

Is it safe for pregnant women to receive an influenza vaccine that contains thimerosal?

- Reports and studies indicate that pregnancy can increase the risk for serious medical

complications of the flu. One study found that healthy women in the third trimester of pregnancy are hospitalized with flu at rates similar to those individuals with a high-risk condition.

- Two studies have looked at the safety of flu vaccine during pregnancy and found that there was no negative effect from vaccination. Additionally, a study (2007) looked at the potential impact of thimerosal exposure on the fetus and did not find an association between vaccination and neurological defects.

Where can I get flu vaccine that does not contain thimerosal?

- Ask your health care provider for a single-dose flu vaccine which either contains trace amounts (preservative-free) or no thimerosal (i.e. thimerosal-free). There is not a list of clinics that provide thimerosal-free flu vaccine.
- Sanofi Pasteur has a flu shot for children age 6 months to 3 years that is thimerosal-free. They also make limited amounts of thimerosal-free flu vaccine for older ages.
- Novartis produces a limited amount of preservative-free (only a trace) flu shots for persons 4 years of age and older.
- Two additional flu vaccines are also available for persons age 18 years and older; thimerosal-free, single dose Afluria and preservative-free single dose Fluarix.
- The new nasal-spray flu vaccine, made from a weakened live virus, does not contain thimerosal. Healthy persons 2 through 49 years of age can receive this vaccine.

What other vaccines contain thimerosal?

Other than the flu vaccine, there are a few vaccines that contain thimerosal. However, these vaccines are not routinely recommended for young children and are not routinely given to older persons.

For more information about thimerosal and immunizations, call us at 651-201-5414, 1-800-657-3970 or visit MDH's Immunization Program website at www.health.state.mn.us/immunize.



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