Thimerosal in Seasonal Influenza ("Flu") Vaccine

Except as noted in italics below, this information available is abridged from the United States Centers for Disease Control and Prevention websites http://www.cdc.gov/flu/about/qa/thimerosal.htm and http://www.cdc.gov/flu/about/qa/disease.htm.

Topics:

- What is thimerosal?
- Which vaccines contain thimerosal?
- Is it safe for children to get a flu shot that contains thimerosal?
- Is it safe for pregnant women to get a flu shot with thimerosal?
- Why should children and adults get a flu shot every year?

What is thimerosal?

Thimerosal is a very effective preservative that has been used since the 1930s to prevent contamination in some multi-dose vials of vaccines (preservatives are not required for vaccines in single dose vials). There is no convincing evidence of harm caused by the low doses of thimerosal in vaccines, except for minor reactions like redness and swelling at the injection site.

Thimerosal, which contains a form mercury called ethyl mercury, is also found in other commonly-used items such as cosmetics, especially mascara, as well as in some eye drops and nasal sprays; see http://www.medscape.com/viewarticle/531026_3 and http://www.dnr.state.wi.us/org/caer/cea/mercury/household/page1.htm for more details.

The amount of mercury in a dose of thimerosal-containing flu vaccine is very small, 25 thousandths of a gram, or about 1/1000 of an ounce. This is less than the amount of mercury in a 6-ounce can of chunk white albacore tuna; see http://www.pbs.org/now/science/mercuryinfish.html for details.

Which vaccines contain thimerosal?

Today, all routinely recommended vaccines for children in the U.S., except for influenza vaccine, contain no thimerosal or only trace amounts.

Most influenza vaccine in the U.S. still has thimerosal, but more and more thimerosal-free influenza vaccines will become available as manufacturing capabilities are expanded.

Adult tetanus boosters and one type of meningococcal vaccine for adolescents also still have thimerosal. The amount of mercury in a dose of these vaccines, 25 micrograms, is the same small amount as in thimerosal-containing flu vaccine; see http://www.vaccinesafety.edu/thi-table.htm for details.

Is it safe for children to receive a flu shot that contains thimerosal?

Yes. There is no convincing evidence of harm caused by the small amount of thimerosal in vaccines, except for minor effects like swelling and redness at the injection site due to sensitivity to thimerosal.

Most importantly, all other routine childhood vaccines (such as Hepatitis B, Hib, and DTaP) are now thimerosal-free. Based on guidelines established by the FDA, the Environmental Protection Agency (EPA) and the Agency for Toxic Substances and Disease Registry (ATSDR), no child will receive excessive mercury from childhood vaccines, regardless of whether or not their flu shot contains thimerosal as a preservative.

Is it safe for pregnant women to get a flu shot with thimerosal?

Yes. A study of influenza vaccination examining over 2,000 pregnant women demonstrated no adverse fetal effects associated with thimerosal-containing influenza vaccine. And pregnancy can increase the risk for serious medical complications of influenza. One study found that out of every 10,000 women in their third trimester of pregnancy during an average flu season, 25 will be hospitalized for flu related complications.

Because pregnant women are at increased risk for influenza-related complications and because a substantial safety margin has been incorporated into the health guidance values for organic mercury exposure, the benefits of influenza vaccine, with or without thimerosal, outweighs the theoretical risk, if any, of thimerosal.

Why should children and adults get a flu shot every year?

Each flu season is unique, but it is estimated that, on average, approximately 5% to 20% of U.S. residents get the flu, and more than 200,000 persons are hospitalized for flu-related complications each year. About 36,000 Americans die on average per year from the complications of flu.

Healthy children under the age of 2, people over age 65, and persons of any age with chronic medical conditions, are at highest risk for serious complications of flu, and are most likely to be hospitalized because of flu complications.

Some of the complications caused by flu include bacterial pneumonia, dehydration, and worsening of chronic medical conditions, such as congestive heart failure, asthma, or diabetes. Children can also get sinus problems and ear infections as complications from the flu.