



The Coalition for SafeMinds is a non-profit organization founded to restore health and protect future generations by eradicating the devastation of autism and associated health disorders induced by mercury and other toxicants.

SafeMinds has funded more groundbreaking mercury-related autism research than any other organization. Since its inception in 2000, SafeMinds has funded over one million dollars in research and is responsible for increasing the awareness of environmental factors like mercury in the development of neurological disorders in children.

All references and information contained in this brochure are available at

[www.safeminds.org](http://www.safeminds.org)



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## Flu Vaccines in Pregnancy - What You Need to Know

**You would never intentionally expose your patients or their babies to a known neurotoxin.** Before ordering influenza vaccines for your patients, you need to be aware that the majority contain mercury. Mercury-free vaccines are available and cost only pennies more per injection.

**Don't Take the Risk. Order only mercury-free influenza vaccines.**

MERCURY *is*  
a NEUROTOXIN



# Flu Vaccines in Pregnancy - What You Need to Know

- The Environmental Protection Agency (EPA) estimates that one in every six women has a level of mercury in her body that could cause neurological harm to her unborn child.
- Research comparing maternal mercury levels at birth to cord blood levels documents that mercury crosses the placenta and accumulates in the fetus at even higher levels than in the mother.
- The majority of flu vaccines contain the ethylmercury preservative thimerosal. There is no established Federal exposure limit for ethylmercury because insufficient toxicology studies have been done to determine its safety.
- Scientific studies have documented that the ethylmercury used in vaccines enters into the brain and results in more than double the amount of inorganic mercury deposited in the brain in comparison to equal amounts of methylmercury.
- It is inconsistent to recommend vaccines containing ethylmercury when also counseling pregnant women to avoid certain seafood known to be high in mercury due to the harmful effects mercury can have on the developing fetus.
- Vaccines with 1:10,000 or 0.01 percent thimerosal contain 50 mcg/ml mercury, which exceeds the EPA 0.2 mcg/ml hazardous waste level for mercury 250 times. Unused thimerosal-containing flu vaccine needs to be returned to the manufacturer for appropriate hazardous-waste disposal.

## GET THE FACTS:

All vaccines pose some risk, with or without mercury content. The influenza vaccine is of particular concern, as many brands contain high levels of mercury. SafeMinds recommends that physicians implement office policies to insure that they order and administer only mercury-free influenza vaccines. Thimerosal-free vaccines are readily available and cost only a few pennies more than those that contain mercury

It is also important to review the most current research regarding the efficacy of influenza vaccination in your patient population. The largest trial of influenza vaccine efficacy to date that included 49,985 pregnant women and their infants over five flu seasons, found no difference in the risk for developing influenza-like illness among those mothers and their infants who received the influenza vaccine during pregnancy and those who did not receive the vaccine. (Black, 2004) Other smaller studies did find a reduction in confirmed influenza cases in infants whose mothers received the vaccine during pregnancy. (Zaman, 2008; Eick, 2011)

An investigation into the effectiveness of the flu vaccine which examined 274 studies of influenza vaccines and 28 epidemiological studies from 1966 to 2007 with over 3,000,000 participants conducted by the Cochrane Foundation found that for every 100 people, 7 will develop flu- like illness but only 1 will actually have the flu. (Cochrane, 2010)

According to flu vaccine package inserts: “Safety and effectiveness has not been established in pregnant women or nursing mothers and (the vaccine) should only be given to a pregnant woman if clearly needed.” The majority of flu vaccines are classified as pregnancy category C and should only be administered if the benefit outweighs the risk. For current flu vaccine package inserts visit <http://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm094045.htm>.

Simple techniques such as avoiding those with flu-like illnesses, eating a healthy diet, and good hand washing can prevent many cases of the flu. Optimizing vitamin D levels, fluid intake, and rest can also boost immune function.

# Mercury Exposure in Pregnant Women

In March of 2001, the Food and Drug Administration (FDA) issued a statement warning pregnant women not to eat fish containing high levels of mercury because mercury causes neurological damage in children. Mercury, including ethylmercury used in vaccines, is known to be highly toxic to neurons and can interrupt critical stages of brain development, especially in the developing fetus.

The Centers for Disease Control and Prevention (CDC) Advisory Committee for Immunization Practices (ACIP) now recommends that pregnant women receive seasonal influenza vaccines, most of which contain 25 mcg of ethylmercury per adult dose in the form of the preservative thimerosal.

According to the Environmental Protection Agency (EPA), daily methylmercury exposure levels should not exceed 0.1mcg/kg body weight/day. For a 150 lb woman (68kg), daily methylmercury exposure should not exceed 6.8 mcg, yet she would receive more than three times that amount of ethylmercury from a single flu vaccine.

SafeMinds is deeply concerned about the use of mercury-containing seasonal influenza vaccines in pregnant women, especially knowing that one out of six already has elevated levels of mercury from environmental exposures.

## What is Thimerosal

Thimerosal is a preservative used in vaccines and other medical products that is 49.6% ethylmercury by weight. Developed in the 1930s and marketed by Eli Lilly, thimerosal has never been tested using modern safety standards. (NTP Nomination, 2001) In 1982, an expert FDA panel found thimerosal to be toxic and to cause cell death and recommended that mercury be removed from all over the counter products. (Federal Register, 1982) In 2001, the Institute of Medicine recommended that “government agencies give full consideration to removing thimerosal from all vaccines administered to infants, children or pregnant women.” (IOM, 2001)

In addition, a study funded by the NIH found that ethylmercury crossed the blood brain barrier in infant non-human primates, resulting in more than double the amount of inorganic mercury being sequestered in their brains compared to those exposed to identical amounts of methylmercury (Burbacher, 2005). A comprehensive review of vaccine level thimerosal research was recently published that concluded thimerosal is toxic to human brain cells and laboratory animals, and has the potential to affect human neurodevelopment (Dorea, 2011).

## The following vaccines are available for the 2011/2012 season

Vaccine	Thimerosal Content	Age Allowed
<b>Afluria</b>	Prefilled syringe No Mercury Multi-dose vial** 25mcg Mercury	9 years of age and older
<b>Fluarix</b>	Prefilled Syringe No mercury	3 years and older
<b>FluLaval</b>	Multi-dose vial** Mercury 25 mcg	18 years and older
<b>FluMist</b>	Nasal spray No mercury	2 to 49 years of age. Not recommended during pregnancy
<b>Fluvirin</b>	Prefilled syringe No thimerosal Multi-dose vial** 25mcg Mercury	4 years and older
<b>Fluzone</b>	Prefilled syringe No thimerosal Multi-dose vial** 25mcg Mercury	6 Months and older

Vaccine	Price Per Dose With Mercury	Price Per Dose - No Mercury
<b>Fluzone</b>	\$11.17	\$12.41
<b>Fluvirin</b>	\$12.10	\$13.60*
<b>Fluarix</b>	Not made	\$10.98*
<b>Afluria</b>	\$10.25	\$11.00

\* Contains a trace amount of thimerosal. The FDA defines traces amounts as <1ug Hg/0.5mL dose.

\*\* Unused products must be disposed of as a hazardous waste since they exceed the 0.2 mcg/ml hazardous waste levels for mercury established by the EPA [http://www.pharmacology.com/pedd/jsp/static/a6\\_news\\_20100908.jsp](http://www.pharmacology.com/pedd/jsp/static/a6_news_20100908.jsp)

Flu vaccine supplied in prefilled syringes or single dose vials typically DOES NOT contain mercury. Flu vaccines in multi-dose vials typically contain 25 mcg of mercury per injection.

FluMist, a nasal spray flu vaccine, is a live virus vaccine and does not contain mercury, but it is not recommended during pregnancy. Also, pregnant women should consider not giving their other young children FluMist because it is possible for recipients to shed the virus to others.

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