Frequently Asked Questions About Thimerosal (Ethylmercury)

There are two, very different, types of mercury which people should know about: methylmercury and ethylmercury.

Mercury is a naturally occurring element found in the earth's crust, air, soil, and water. Since the earth's formation, volcanic eruptions, weathering of rocks and burning coal have caused mercury to be released into the environment. Once released, certain types of bacteria in the environment can change mercury into methylmercury. Methylmercury makes its way through the food chain in fish, animals, and humans. At high levels, it can be toxic to people. For more information about methylmercury: please read “What You Need to Know about Mercury in Fish and Shellfish” from the Environmental Protection Agency (EPA).

Thimerosal contains a different form of mercury called ethylmercury. Studies comparing ethylmercury and methylmercury suggest that they are processed differently in the human body. Ethylmercury is broken down and excreted much more rapidly than methylmercury. Therefore, ethylmercury (the type of mercury found in the influenza vaccine) is much less likely than methylmercury (the type of mercury in the environment) to accumulate in the body and cause harm.

What is thimerosal?
Thimerosal is a mercury-based preservative that has been used for decades in the United States in multi-dose vials (vials containing more than one dose) of medicines and vaccines.

Why is thimerosal used as a preservative in vaccines?
Thimerosal is added to vials of vaccine that contain more than one dose to prevent the growth of bacteria and fungi in the event that they get into the vaccine. This may occur when a syringe needle enters a vial as a vaccine is being prepared for administration. Contamination by germs in a vaccine could cause severe local reactions, serious illness or death. In some vaccines, preservatives are added during the manufacturing process to prevent microbial growth.

How does thimerosal work in the body?
Thimerosal does not stay in the body a long time so it does not build up and reach harmful levels. When thimerosal enters the body, it breaks down, to ethylmercury and thiosalicylate, which are easily eliminated.

Is thimerosal safe?
Thimerosal has a proven track record of being very safe. Data from many studies show no convincing evidence of harm caused by the low doses of thimerosal in vaccines.

http://www.cdc.gov/vaccinesafety/Concerns/Thimerosal/thimerosal-faq.html
What are the possible side-effects of thimerosal?
The most common side-effects are minor reactions like redness and swelling at the injection site. Although rare, some people may be allergic to thimerosal. Research shows that most people who are allergic to thimerosal will not have a reaction when thimerosal is injected under the skin (Wattanakrai, 2007; Heidary, 2005).

Does thimerosal cause autism?
Research does not show any link between thimerosal in vaccines and autism, a neurodevelopmental disorder. Although thimerosal was taken out of childhood vaccines in 2001, autism rates have gone up, which is the opposite of what would be expected if thimerosal caused autism.

Do MMR vaccines contain thimerosal?
No, measles, mumps, and rubella (MMR) vaccines do not and never did contain thimerosal. Varicella (chickenpox), inactivated polio (IPV), and pneumococcal conjugate vaccines have also never contained thimerosal.

Do all flu vaccines contain thimerosal?
No. Influenza (flu) vaccines are currently available in both thimerosal-containing and thimerosal-free versions. The total amount of flu vaccine without thimerosal as a preservative at times has been limited, but availability will increase as vaccine manufacturing capabilities are expanded. In the meantime, it is important to keep in mind that the benefits of influenza vaccination outweigh the theoretical risk, if any, of exposure to thimerosal.

How can I find out if thimerosal is in a vaccine?
For a complete list of vaccines and their thimerosal content level, you may visit the U.S. Food and Drug Administration. Additionally, you may ask your health care provider or pharmacist for a copy of the vaccine package insert. It lists ingredients in the vaccine and discusses any known adverse reactions.

References
Please see References for a list of published articles on thimerosal.