

# The Truth About Vaccine Mercury

By Heather Simpson,  
Back to the Vax

This myth feels like it is as old as time itself. If I had a dollar for every time someone warned me about mercury in vaccines, I would be rich!

When I was an anti-vaxxer, I remember doing a “Facebook live debate” with a pro-vaxxer in the absolute height of my anti-vaccine beliefs. Then I had an “Oh no, what if I am wrong?” moment. It was at this moment, you see, that I learned and finally understood that there are many different kinds of mercury, including the bad kind of mercury found in fish, and a safe kind found in vaccines. I was frozen with regret when I realized how categorically wrong I had been. I immediately dropped the mercury argument and moved onto a different topic for the debate.



Mercury has scared people away from vaccines for decades- namely, because it sounds scary. Who wants to inject their child with mercury? Isn't mercury the stuff in glass thermometers that if you so much as spill it then it shuts down schools and causes people in hazmat suits to appear?

**But even if you were scared about mercury in vaccines, you might ask yourself:**  
*Why am I still scared about mercury in vaccines?*

Remember, “mercury” was removed from most childhood vaccines over twenty years ago! So how many vaccines still contain mercury? While none actually contain “mercury,” multi-dose flu vaccine vials do contain **thimerosal**, a preservative that contains an ethylmercury group.

Notice how I just said thimerosal, **not mercury**. That is because mercury and thimerosal are completely different molecules, just like water (H<sub>2</sub>O) and formaldehyde (CH<sub>2</sub>O) are completely different compounds. Heavy metal mercury breaks down into methylmercury. The mercury found in thimerosal, (aka what's used in multi dose vials of the flu shot), breaks down into ethylmercury.

Yes, thimerosal is used as a preservative in multi-dose influenza vaccines, however it is also used in cosmetics, tattoo inks, eye drops and contact lens solutions, disinfectants, as well as in products used to treat contact dermatitis.

Methylmercury is the type of mercury found in fish. It can be toxic to humans at high exposure levels. This is why the FDA recommends limiting your intake of some types of fish.



Compounds containing ethylmercury, on the other hand, are cleared from your body faster than methylmercury and don't appear to be toxic. For example, methylmercury takes around 20-80 days to be cleared by half from the body, whereas thimerosal takes around 7 days to be cleared by half from the body, as shown below:

"Methylmercury is what accumulates in water and fish and can cause health problems. Ethylmercury is a very different compound that doesn't appear to be toxic. If you want to understand the difference one carbon atom can make, consider the difference between methanol and ethanol. Drinking ethanol (alcohol) will make you tipsy at a dinner party. Drinking methanol can make you go blind." (Iannelli, 2021)

### Should We Worry About Metals in Vaccines?

What if you don't even want to deal with a small amount of ethylmercury in flu shots? Just ask for a thimerosal-free flu shot from a pre-filled syringe, which is how over 90% of flu vaccines are now made.

It's that simple, and you can avoid "mercury" altogether.



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