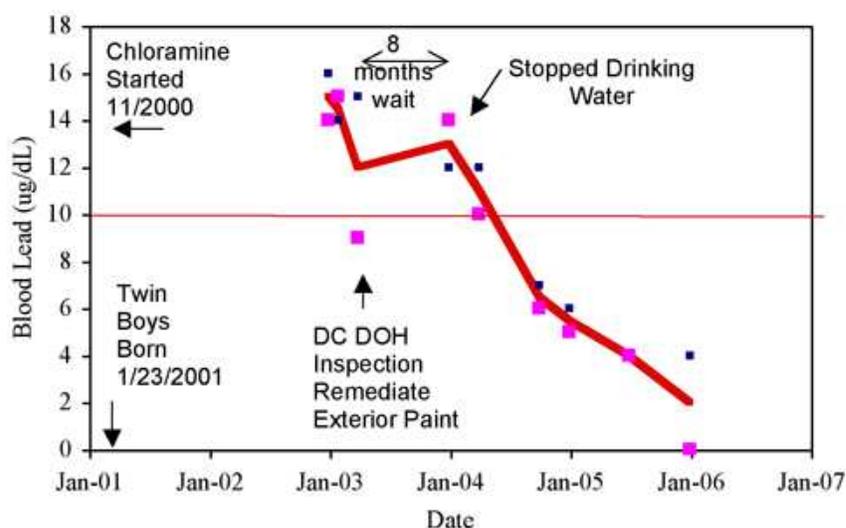


Fluorosilicates Increase Blood Lead Levels

A growing body of research suggests that the practice of fluoridation may double the exposure of lead in our children from drinking water.

A statistically significant association between the use of silicofluorides as water fluoridation agents (in both Massachusetts and New York State) and an increased uptake of lead into children's blood⁴⁴⁻⁴⁵ was previously demonstrated.



Blood lead data for twin boys born in 2000.

“After the levels were found to be higher than CDC’s [Centers for Disease Control] level of concern, DOH [department of health] inspected their home for lead paint and found only a remote exterior door as an admittedly unlikely source. However, painting the door failed to bring down the boys’ blood lead

levels. But when they stopped drinking tap water and it was no longer used in cooking their meals, the boys’ blood lead levels declined rapidly.” Renner R. 2006 Mis-Lead. Environmental Science Technology Online News: Science News May 31. http://pubs.acs.org/subscribe/journals/esthag-w/2006/may/science/rr_mislead.html.

Sodium Fluoride → Silicofluorides

Silicofluorides were substituted for sodium fluoride in 1947 and endorsed in 1950 by the US Public Health Service without prior animal testing because rats teeth got as much fluoride as from sodium fluoride, and a community could save 4 cents per year per resident (McClure, 1950).⁴⁶

Chlorine → Chloramine

A switch from chlorine to chloramine [ammonia + chlorine] was recently recommended and adopted in some water systems for several reasons:⁴⁶

- Chloramine is cheaper than other disinfection methods
- Easy to add ammonium to already-chlorinated water
- Chloramine produced fewer disinfection by-products [DBPs] than chlorine

Fluorosilicates &/or Chloramine + Lead or Leaded Brass = Increased Blood Levels

Two new studies⁴⁶⁻⁴⁷ demonstrate that fluoride in various combinations with chlorinating chemicals (e.g. chlorine or chloramine) increases the release of lead from leaded brass fittings used in water pipes. There are several chemical reasons⁴⁶:

1. fluosilicic acid, the most widely used fluoridating agent, is a good solvent for lead.
2. chlorine, ammonia, and chloramine are all hostile to copper in that they induce copper stress cracking and/or can dissolve it.
3. ammonia added to chlorine to produce chloramine will also react with fluosilicic acid to produce ammonium fluosilicate, an established solvent for copper alloys/brass.

Besides these chemical factors, the lead in brass is present as nodules, so that any attack on the copper matrix of brass would make lead particles readily accessible for mobilization⁴⁶.

Drinking Water is an important source of increased lead. Increased blood levels were found in homes without lead service lines or lead soldered copper piping. The only possible lead source had to be leaded-brass plumbing and/or brass faucets.

Silicofluoride use is associated with 2 neurotoxic effects⁴⁷:

1. Prevalence of children with elevated blood lead (PbB>10µg/dL) is about double that in non-fluoridated communities
2. Voluntary and involuntary muscle action is stimulated by **acetylcholine** (ACh) which is cleaved by the enzyme **acetylcholinesterase** (AChE) to end the stimulation. Without AChE, muscle excitation would persist as spasm with potentially lethal effect, as caused by a nerve gas. Acetylcholine modulated by acetylcholinesterase also induces saliva flow. Intense salivation is a symptom of fluoride poisoning. Silicofluorides inhibit AChE.

“It is proposed here that SiFW [silicofluorides in water] induces protein mis-folding via a mechanism that would affect polypeptides in general, and explain dental fluorosis, a tooth enamel defect that is not merely "cosmetic" but a "canary in the mine" foretelling other adverse, albeit subtle, health and behavioral effects.”⁴⁷.

One new study reports:

Over the first test week with chlorine flushing, lead concentrations nearly doubled [from 100ppb to nearly 200ppb]. When fluorosilicic acid was added, lead concentrations spiked from 100ppb to over 900ppb⁴⁶.

Lead concentrations from the chlorine-based waters appeared to be decreasing over the study period. Lead concentrations seemed to be increasing with the chlorine + ammonia + fluorosilicic acid combination⁴⁶.

Citations

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