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Home
About FAN
Latest News
Water Fluoridation
Health Effects Database
Sources of Fluoride Exposure
Fluoride Pollution
Fluorine Pesticides
Take Action!
Contact Us
Donate
FAQs
Search:
Go

Silicofluorides & Higher Blood Lead: Statement from Dr. Roger Masters

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Silicofluorides and Higher Blood Lead

At present, U.S. public water systems serving over 140 million people are fluoridated with 200,000 tons of commercial grade hydrofluosilicic acid (H2SiF6) and sodium silicofluoride (Na2SiF6), together called "silicofluorides" (or "SiFs"). Data from numerous studies show that, taking economic, social and racial factors into account, where silicofluorides are used, children absorb more lead from the environment, and there are higher rates of diseases and behavioral problems associated with lead poisoning (including hyperactivity, substance abuse, and violent crime).

Although some early studies showed differences between sodium fluoride and sodium silicofluoride, to this day the substitution of silicofluorides in public water treatment facilities has never been subjected to appropriate animal or human testing. Recently, the Assistant Administrator of the EPA admitted to Congress that his agency had no data on SiF toxicity and the Chief of the Treatment Technology Evaluation Branch at the National Risk Management Research Laboratory confirmed that the EPA has "no" data on the "health and behavioral effects of fluosilicic acid."

Despite claims of safety by oral health officials, laboratory research in Germany revealed that silicofluorides do not dissociate completely and have important biological effects. To follow up on this issue, we have compared children's blood lead levels in communities using SiF treated water with communities using sodium fluoride or with non-fluoridated water. In three separate samples, totalling over 400,000 children, SiF treated municipal water is ALWAYS significantly associated with increased blood lead levels in children.

This effect was evident in a Massachusetts survey of lead levels in 280,000 children (see graph for children exposed to SiF from the Greater Boston water system, from towns that add SiF locally, or from communities using sodium fluoride, and towns without fluoridation). For the state of New York, data was available on venous blood lead levels for 151,225 children in communities of 15,000 to 75,000. Controlling for other factors associated with higher blood lead, silicofluorides were again significantly associated with higher uptake of lead from the environment. For black children, who are especially at risk for high blood lead, those in towns using SiF were less likely to have low blood lead and more likely to have lead over 10µg/dL. To confirm that these results are not due to other socio-economic or demographic factors, additional statistical tests were run.

The third study concerned children's blood lead levels in the National Health and Nutrition Evaluation Survey (NHANES III), which had reports for 7224 children from 80 counties with populations over 500,000. Since only 4 of these counties had any communities that used sodium fluoride, analysis of the NHANES III data focused on the percentage of the entire county population exposed to silicofluoride treated water.

Among the 1543 children of all ages from large urban counties with over 80% of the population exposed to fluoridation (almost all of whom receive water treated with SiF), average blood lead was 5.12 µg/dL whereas the average for 1139 children in low fluoride exposure counties was 3.64 µg/dL Blood lead in the 473 children sampled from the medium fluoridation counties was 3.23 µg/dL, which was significantly different

from the high fluoridation counties but not from either low fluoridation counties or those with unknown fluoridation status, where average blood lead levels were 3.16 µg/dL (S.D. 2.83). Controlling for the Poverty, the effect of SiF use was highly significant ($p < .0001$). When the sample is divided by age and race, these findings provide six separate samples in which SiF is associated with high blood lead (see Graphs).

In all three populations studied, those children in each racial category and each age group who were highly likely to be exposed to silicofluorides differ strongly in levels of blood lead from those not exposed. This conclusion was further checked by analyzing available data for health and behavioral traits that have been associated with high blood lead (such as violent crimes, cocaine use and asthma). In each case, those exposed to silicofluoride treated water were more likely to have behavioral or health problems that are more likely among those with high lead in their bodies.

The injection of silicofluorides in public water supplies is a practice whose elimination could possibly contribute to reduced rates of learning disabilities, substance abuse, violent crime, and asthma (all connected with lead poisoning and other toxins). Whatever the benefits to teeth (and this is highly controversial), our research shows that the issues facing the public concern silicofluoride chemistry, toxicology, and the linkage of neurotoxins with behavior or health. Before SiF chemicals are used, citizens must know that they are safe for all.

For more information, see: http://www.dartmouth.edu/~rmasters/ahabs.htm. (Note: from this site, that one can download an English translation of Westendorf's studies of silicofluorides, which have not hitherto been available in the U.S.)

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