

DARTMOUTH NEWS

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STUDY FINDS CORRELATION BETWEEN FLUORIDES IN WATER AND LEAD LEVELS

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HANOVER, N.H. — Although the dangers of lead poisoning have been known for years, substantial numbers of children continue to suffer from blood lead above danger level of 10 micrograms per deciliter of blood (10 μ g/dL).

A study published this month in the International Journal of Environmental Studies, and led by Roger Masters, Emeritus professor of government at Dartmouth, describes a factor that is correlated with higher lead levels in children. Analyzing a survey of over 280,000 Massachusetts children, the investigators found that silicofluorides — chemicals widely used in treating public water supplies — are associated with an increase in children's absorption of lead. The research team included Myron J. Coplan, retired vice President of Albany International and principal of Intellequity, Natick, Mass., and Brian T. Hone, research associate at Dartmouth college.

In their analysis, the investigators found that levels of lead in children's blood was significantly higher in Massachusetts communities using the silicofluorides fluosilicic acid and sodium silicofluoride than in towns where water is treated with sodium fluoride or not fluoridated at all. Compared to a matched group of 30 towns that do not use silicofluorides, children in 30 communities that use these chemicals were over twice as likely to have over 10 μ g/dL of blood lead.

"Silicofluorides are largely untested," said Professor Masters, who pointed out that over 90 percent of America's fluoridated drinking water supplies are treated with silicofluorides. "Virtually all research on fluoridation safety has focused on sodium fluoride, even though the studies in the 1930's showed important biological differences between these chemicals. The correlation with blood levels is especially serious because lead poisoning is associated with higher rates of learning disabilities, hyperactivity, substance abuse and crime."

Since completing the Massachusetts study, the investigators have analyzed data from rural counties in six additional states as well as in the National Health and Nutrition Evaluation Survey (NHANES III). The results, which have not yet been published, find a correlation between silicofluorides and blood lead levels, as well as higher rates of violent crime and substance abuse.

Masters will summarize these findings in a plenary lecture at a meeting of the Association for Politics and the Life Sciences at the Four Seasons Hotel in Atlanta, Georgia on Thursday, Sept. 2, at 9 a.m.

The research was funded by the Environmental Protection Agency's Office of Criminal Enforcement, Forensics and Training and by the Earhart Foundation, which integrates scientific discoveries in neuroscience, environmental chemistry, and human behavior.

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[note by sender: the release above is a recreation of the original]

INFORMATION NOT ON ORIGINAL RELEASE – About the authors

- Roger D. Masters heads the Dartmouth Foundation for Neuroscience and Society. For several decades he has researched the caused of violence and other dysfunctional human behavior such as ADD, ADHD and drug abuse.
- Myron J. Coplan is retired Vice President of Albany International Corp., a registered Professional chemical engineer and a private consultant in chemical engineering at Intellequity. His fields include water chemistry and the treatment of water and wastewater via membranes.

TABLE I Percent children with blood levels above CDC maximum (0mg/dL):
 matched sample of 30 nonfluoridated and 30 silicofluoride treated communities

	<i>Total population (x 100,000)</i>	<i>Children 0-5</i>	<i>#Children screened</i>	<i>#Lead risk (Pb >10 ml/dL)</i>	<i>%Screened high risk</i>	<i>@H2O Pb (ppb)</i>	<i>4th Gr MEAP (average)</i>	<i>%Poor</i>	<i>%Non white</i>	<i>%AB</i>	<i>Income percap (51,000)</i>	<i>Elem budget (51,000)</i>
30 Non-fluoridated Communities	837.3	57031	37310	283	0.76	21	5440	4.6	6.6	23.6	16.6	3584
30 Fluorosilicic Acid or Sodium Fluorosilicate Treated Communities	845.1	56446	39256	762	1.94	30	5455	5.1	11.5	30.5	19.6	4067