

RESPONSE TO MASTERS AND COPLAN STUDY WATER TREATMENT WITH SILICOFLUORIDES AND LEAD TOXICITY

In a study, Water Treatment with Silicofluoride and Lead Toxicity, published in the *International Journal of Environmental Studies*, (1999, vol. 56, pp. 435-449) by Dr. Roger Masters, Emeritus Professor of Government at Dartmouth University and Mr. Myron J. Coplan, a retired chemical engineer of Albany International and principal of Inteliquity Technology Services, have associated increased lead levels in the blood of children with the use of silicofluorides in fluoridated water supply systems. The paper presents results from an ecological study of community lead levels, drug use among arrested individuals, and the use of variety of chemicals for fluoridation of community water supplies. The authors conclude that fluorosilicic acid and sodium silicofluoride may be responsible for lower pH levels of drinking water, leaching lead from plumbing systems, and increasing lead uptake by children. In very similar articles, (Poisoning the Well: Neurotoxic Metals, Water Treatment, and Human Behavior; A Dynamic, Multifactorial Model of Alcohol, Drug Abuse, and Crime: Linking Neuroscience and Behavior to Toxicology; Neurotoxicity and Violent Crime: Silicofluorides and Enhanced Lead Uptake in Rural Georgia; Brain Biochemistry and Violent Epidemic: Toward a "Win-Win" Strategy for Reducing Crime; Water Treatment Chemistry and Increased Lead Toxicity; Is Silicofluoride Safe?; Association of Silicofluoride Treated Water with Elevated Blood Lead; Biology and Politics: Linking Nature and Nurture; Guest Editorial: Silicofluorides and Fluoridation; and Environmental Pollution, Neurotoxicity, and Criminal Violence) they have also suggested that communities using silicofluorides also report higher rates of learning disabilities, Attention Deficit Disorder, violent crime, elevated blood levels in children, and criminals who were using cocaine at the time of arrest.

This response is focused on the study entitled Water Treatment with Silicofluoride and Lead Toxicity, but pertains to the other articles, or proposed articles, as well.

Epidemiologists for the Centers for Disease Control and Prevention stated “ This manuscript is poorly written and provides insufficient detail on study method to allow a full evaluation. Based on the information presented, this study used a flawed analytic approach, which undermines the validity of its conclusions. Much of the authors’ contentions regarding the relation between fluoridation chemicals (or lead, for that matter) and crime rates is weakly supported, and is likely to highly confounded by complex social factors including, for example, unemployment rates, occupational chemical exposures, and socioeconomic factors not captured in this simplistic analysis.” Also, they said, “ This is a very poor conceived and developed piece of research. The review of the literature is highly selective and one of the key documents to support the author’s point of view is authored by one of the authors”

Drs. Edward T. Urbansky, a physical inorganic chemist, and Michael R. Schock, a corrosion chemist, of the National Risk Management Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency in Cincinnati, Ohio have published an article in the *International Journal of Environmental Studies*. This paper examines the premise that Master and Coplan have proposed in their various papers. Urbansky and Schock state: "Recent reports have attempted to show that fluoridated potable water is linked to increased levels of lead (II) in blood. ...Overall, we conclude that no credible evidence exists to show that water fluoridation has any quantifiable effects on the solubility, bioavailability, bioaccumulation, or reactivity of lead (0) or lead (II) compounds". Dr. Urbansky has also stated: "Masters and Coplan's conclusions are unsupported even by their own limited data and are inconsistent with established scientific literature. The paper will not stand up to rigorous review by expert scientists experienced in the relevant disciplines. There are no credible data in any report or letter they have written thus far to suggest any link between fluoridation and anything else."

There is no basis for concern on the issue of using silicofluorides in fluoridated water supply systems. There has been much attention given to work of Masters and Coplan, but it does not stand up to rigorous review by scientists experienced in the appropriate field. Therefore, we believe that there is no reason that any community that uses or is planning on using silicofluorides in fluoridating their water supply has any reason for concern .

Thomas G. Reeves, P.E.
National Fluoridation Engineer
Program Services Branch
Division of Oral Health
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention