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Fluoride - Should We Be Drinking This? An

EPA study links fluoride to Attention Deficit Disorder and lead poisoning

By Jane Louise Boursaw

You come in from working outside and pour yourself a glass of refreshing, ice-cold water. But what if it was contaminated with a hazardous waste product of the aluminum, uranium, and phosphate fertilizer industry? Guess what? It is. It's called silicofluoride, a highly-toxic chemical added to over 90 percent of America's drinking water, according to a recent study, funded in part by the Environmental Protection Agency.

UNTESTED TOXIC

For years, dentists have touted the benefits of fluoride, claiming it helps prevent tooth decay. And that may be true with regard to "sodium" fluoride. But silicofluoride, the kind now used to treat water supplies, has been linked to cancer, infertility, bone fractures, and premature joint and ligament aging.

What's more, the EPA study, just released in September of 1999, shows a new correlation between silicofluorides and high levels of lead in children's blood, which has been linked to learning disabilities, hyperactivity, substance abuse, and the root causes of crime.

"Silicofluorides are largely untested," said Roger Masters, Emeritus professor of government at Dartmouth College, who led the study. "Virtually all research on fluoridation

Pure water advocate and microbiologist Bill Siegmund warns that the kind of fluoride being used in American water supplies prompts the body to absorb dangerous heavy metals, such as lead.

safety has focused on sodium fluoride, even though studies in the 1930's showed important biological differences between these chemicals."

A.D.D. CONNECTION

In particular, a large number of children diagnosed with Attention Deficit Disorder (ADD) have been shown to have dangerously high levels of lead, manganese, or cadmium in bodily tissues, noted the study.

This information was of special interest to Bill Siegmund, a microbiologist, certified water specialist, and managing director of Pure Water Works in Traverse City. Siegmund's son -- who was raised in Grand Rapids, the first U.S. city to be fluoridated in the 1950's -- has been diagnosed with ADD. In fact, Grand Rapids has an extremely high incidence of ADD, noted Siegmund.

"I have heard numbers like the highest percentage in the United States," he said. "What they discovered is that heavy metals in the blood stream during the formative years of prenatal to puberty will prevent you from making the neurological function to transfer messages from short-term to long-term memory. That, in essence, is what ADD is.

"It's not the silicofluorides that are causing ADD, but the fact that they cause you to absorb more lead," Siegmund adds. "So even though lead exists in a very small amount in a municipal system, you absorb more of it in the presence of fluoride."

HEAVY METAL OVERLOAD

He added that this neurological glitch occurs at any age, not just childhood. He also noted that heavy metals accumulate in a person's body over a lifetime. "It is difficult or impossible to get rid of them," said Siegmund. "So a small exposure over a period of time is what the danger is."

A source at the Grand Rapids-Lake Michigan Filtration facility, who did not wish to be identified, noted that they recently switched from powdered silicofluorides to a liquid form called hydrofluosilicic acid (HFS).

"They're both poisonous," said the source, "but I think they wanted to get away from the powder, because even with the dust collection system, you did have some of it in the

Drink up...

not Hydrofluosilicic acid, the chemical agent most used for water fluoridation in the U.S., is the most corrosive chemical agent known to man. It is derived from toxic gases produced in the manufacture of phosphoric acid and phosphate fertilizers. It contains lead, mercury, arsenic, and high concentrations of radionucleides.

Even bystanders who witnessed a 1994 tanker truck accident which spilled 4,500 gallons of industrial grade hydrofluosilicic acid near Deltona, Florida, were close to death, according to Orlando Sentinel reporter Bo Poertner, an eyewitness to the accident.

"We began to worry when an emergency service officer introduced himself and declined to shake Mike's hand," said Poertner. "We knew we had been exposed to a dangerous chemical; after that we began to feel contaminated. A towing service worker reminded me the next day, 'You don't know how close to death you came.'"

TOXIC BYPRODUCTS

Because the industrial grade fluosilicic acid is a toxic waste byproduct recovered from chimney pollution scrubbers ("scrubber liquor"), the volume of contaminants is profoundly influenced by the method of

atmosphere throughout the plant...it wasn't hazardous to the people, but I think they wanted to get away from that."

But hydrofluosilicic acid, although greatly diluted, has it's own problems, he noted. "The quality of the piping and the molds and everything have to meet the standards for an acid like that. You've got the hazards there, too, but you don't have anything in the atmosphere, unless you have a leak or something." (See sidebar)

IN DEFENSE OF FLUORIDE

John Wierenga, plant supervisor for the Grand Rapids-Lake Michigan Filtration facility, agreed that hydrofluosilicic acid is preferable to the powder they used to use, "simply because the powder presented a dust hazard to the employees," he said. "But basically, whatever compound you use, you feed it into the water to derive the same amount of fluoride."

Wierenga believes there is no difference between food-grade sodium fluoride and industrial-grade hydrofluosilicic acid. "The purity of both would be very high," he said. "We're only feeding one part per million, so if there is an impurity there, it would have to be exceedingly high to be measurable."

The Grand Rapids plant receives their hydrofluosilicic acid in 4000-gallon tanker shipments from Florida. "The air pressure just puts it in our tank, and that's all there is to it," said Wierenga. "It's a sealed system."

He added that, among other things, fluoride is used in many insecticides. "Like so many things, it's all a question of dose. In the small amounts that we take it in for public health, it's healthful and without side effects. But if that amount is exceeded, then there can be side effects... an enormous number of accusations have been made about fluoride. I think, almost without exception, they've been proven false. The anti-fluoridationists today are still very active, perhaps because of their opposition to what some would term 'enforced medication.' But, of course, put in the water, [fluoride] is widely available and widely beneficial."

MANY STUDIES

Still, even Wierenga has his doubts about fluoride, even though he works around it every day and has a chemistry background. He cited an article written several years ago for "Chemical and Engineering News," a widely disseminated publication for professional chemists, in which the author raised a number of legitimate concerns about fluoride.

"I thought the article was well researched, and I guess I've always held the belief that if you tried to get fluoride in the water today, you would have great difficulty doing so," said Wierenga.

For one thing, things weren't studied in 1945 like they are today, he noted. "The dentists knew it was good for the teeth and in the water it went. But how much study was done at that time on other health effects? If there were any, they were very few. Since then, there have been enormous

manufacture and the quality of raw materials used.

A co-product from phosphate fertilizer manufacture is yellow-cake uranium, a radioactive substance used in the manufacture of nuclear weapons and the nuclear power industry. The wastes (fluosilicic acid) from the manufacture of phosphate fertilizers are also contaminated with radium and are among the most concentrated radioactive wastes produced from natural materials. These radioactive wastes are referred to as naturally occurring radioactive materials (NORM), and the EPA has no regulations for NORM waste disposal.

The manufacturers of fluosilicic acid do not routinely monitor for levels of uranium contaminating the acid. No testing is done for NORM levels in Florida where much of the fluosilicic acid used to fluoridate municipal water supplies is produced.

The EPA's position on the use of industrial grade fluosilicic acid for the fluoridation of municipal water supplies is that it is the ideal solution to the long-standing dilemma of disposing of the hazardous waste by-product produced from the manufacture of phosphate fertilizers. They contend that by recovering fluosilicic acid, water and air pollution are minimized and water utilities are afforded a low-cost source of fluoride.

COSTLY MISTAKE

Are you wondering why food grade fluoride isn't used in the water fluoridation process? The bottom line, of course. Although it would ensure purity and consistency, the cost factors would be prohibitive.

Another issue is that fluoride, heavy metals and insoluble contaminants contained in chemically treated water are concentrated with cooking (heating). There are no required or

numbers of studies.

Wierenga was not aware of the recent study linking fluoride with Attention Deficit Disorder.

50-YEAR BLUNDER?

If all this isn't enough, here are a few more facts about fluoride from an article entitled "Fluoridation: a 50-Year-Old Blunder and Cover-Up," by David C. Kennedy, D.D.S., published by the Preventive Dental Health Association (PDHA), a non-profit educational corporation:

1) Fluoride has been linked to cancer. In 1956, Dr. John Chaffey, a professor of clinical pediatrics at the College of Physicians and Surgeons, Columbia University, noted cortical defects in the bone X-rays of 13.5 percent of the children living in fluoridated Newburgh, compared to only 7.5 percent in the neighboring non-fluoridated Kingston. Studies have now confirmed a dramatic increase in bone cancer in young males exposed to fluoride during growth of the bones, and a 5 percent increase in all types of cancers in fluoridated communities.

2) Studies have shown that fluoride in the drinking water adversely affects fertility rates in women. A review of animal studies shows that fluoride affects fertility in most other animal species, as well.

3) According to the National Research Council, fluorosis, a disease characterized by brown and white spots on the teeth, affects 8 to 51 percent of children and as many as 80 percent of children growing up in areas where drinking water contains one part per million (1 ppm) fluoride.

4) Fluoride can also have a detrimental effect on bone growth and can cause premature joint and ligament aging, according to a 1993 report by the U.S. Dept. of Health and Human Services. "Postmenopausal women and elderly men in fluoridated communities may be at increased risk of bone fractures."

recommended tests to determine the cumulative contaminant levels ingested daily from chemically treated water. The EPA bases the "maximum contaminant levels" for the average amount of water ingested (drunk by an individual) in liters per kilogram of body weight (not to exceed a concentration of 4.0 milligrams per liter). It does not account for incidental sources like foods, processed or cooked, or soft drinks made with chemically treated water.

And, although the EPA/National Research Council cites many "safety and effectiveness" studies in their 1993 publication, "The Health Effects of Ingested Fluoride," they never state what grades of fluoride products were used for the clinical studies. There are industrial, food, and pharmaceutical grades of fluoride, and the results of those studies would depend greatly upon the grade of chemicals used.

Source: "Water A Toxic Dump?" by George Glasser, printed in the December, 1994, Sarasota ECO Report.

NEVER APPROVED BY FDA

Fluoride in any form -- be it drops, tablets or vitamins -- has never been approved by the Food and Drug Administration (as required by law since 1938). And no application is pending either. This means that the FDA has no proof of the safety or effectiveness of fluoride. Also, the International Academy of Oral Medicine and Toxicology has classified fluoride as an unapproved dental medication, due to its high toxicity.

All this came to light in 1993, when New Jersey State Assemblyman John V. Kelly sought an FDA ban on fluoride supplements and led an investigation which revealed that neither the FDA, National Institute of Dental Research, or American Academy of Pediatric Dentistry had proof of fluoride's safety or effectiveness. Although virtually every American is exposed daily to fluoride, the official FDA classification for fluoride is "Unapproved New Drug."

OVERDOSED ON FLUORIDE

In 1997, the Sierra Club issued a paper proclaiming that the FDA should be required to put fluoride through the "rigorous controlled studies necessary for FDA Approval." They also contend that if

fluoride gains FDA approval, it should be treated as a prescribed medication in order to prevent over-exposure.

Exposing the population to fluoride via drinking water invariably leads to uncontrolled random dosages, noted the Sierra Club. Infants and adults who drink more beverages than others will be significantly overdosed on fluoride.

There is also a wide variation in fluoride levels in food and water. The fluoride at the faucet may vary from .1 ppm to as high as 4 ppm, according to the EPA mean contaminant levels. Excessive fluoride in the water from accidental overfeed has poisoned literally thousands of people and recently killed a Native American in Alaska, noted the Sierra Club paper.

THE TOOTH DECAY MYTH?

What's more, adding silicofluorides to drinking water has not been proven to reduce tooth decay. Studies done in the 1940s indicated that as the level of "natural" fluoride in the drinking water increased, the prevalence of tooth decay declined; so says a 1991 report published by the United States Public Health Service's Committee to Coordinate Environmental Health and Related Programs.

These early studies led to the practice of adding food-grade sodium fluoride to municipal drinking water to bring the total level of fluoride to approximately 1 part per million (ppm). The optimal range of community water fluoridation (optimal with respect to reducing tooth decay and minimizing the risk of dental fluorosis) has been determined by the United States Public Health Service to be 0.7- 1.2 parts per million.

However, in a more recent study on the newer silicofluorides and tooth decay (the largest ever) done by the U.S. Public Health Service, dental records of over 39,000 children showed that the decay rate of permanent teeth was virtually the same in areas treated with silicofluorides as non-fluoridated areas. In fact, tooth decay has decreased more in some non-fluoridated communities than in fluoridated ones.

The scary thing is we're consuming more fluoride than ever. In the 1940s, the U.S. Public Health Service reported a total daily fluoride intake from typical diets in the range of 0.2 to 0.3 milligrams. By the 1970s, the total from dietary sources had increased to as much as 3.44 mg/day, even in non-fluoridated areas. By 1991, the range in total daily dosage had exceeded 7 mg/day in some areas.

Care for some toxic waste for dinner tonight?