

Dare to Think

A Message about Fluoride

By Darlene Sherrell

Just in time for Children's Dental Health Month, (February 1997) the Reader's Digest published "HOW HONEST ARE DENTISTS?", by William Ecenbarger, winner of the George Polk Award for Investigative Journalism. The article revealed that in 28 states dentists examined the same set of x-rays and the same set of pearly whites, and then recommended widely differing treatments, with price tags to match: \$500.00 to \$29,850.00. They didn't seem to know what to do or how much to charge for doing it. "I got 50 opinions," Ecenbarger writes, "and I am not comforted."

This article, however, barely scratches the surface with regard to dishonesty. For decades, the American Dental Association has worked hand in glove with industry to cover up the toxic properties of fluoride, causing untold pain and suffering among an unsuspecting population urged to trust their dentists, trust their government, trust their political leaders, no matter what.

In the early 1930s, when American Dentistry was becoming aware of the damage fluoride can cause during the development of our children's teeth, there was a great call to remove the fluoride naturally present in water supplies. Communities in sixteen states had observed disfiguring stains and pits in their children's teeth. In 1940 the Journal of Dental Research contained a report describing a survey of the inhabitants of St. David, Arizona, where water supplies contained 1.6 to 4 parts per million of fluoride. There was no apparent dental benefit from fluoride. In fact, more than half the people in all age groups over the age of twenty-three had artificial dentures. With this new awareness came fear.

Industries necessary for the production of electricity, aluminum, refrigerants, pesticides, etc., were facing costly litigation due to an emerging environmental consciousness. The Country was facing a great dilemma: impossible choices involving survival. Our military forces could not function without the tools of war -- tools that could simply not be made if we were going to restrict the release of fluoride into our environment. Emissions from smokestacks, and in wastewater could not be limited beyond a certain degree, and laborers could not be given the benefit of an absolutely safe workplace.

Today, there are near-daily news reports covering past mistakes -- not because of conspiracies, but good intentions -- the pavement, they say, on the road to Hell. Today, as then, persons with a hidden agenda are leading us. The promoters of water fluoridation who speak through the mouth of the American Dental Association are not isolated from those whose concerns are manufacturing costs. Instead, they are one.

Years ago, when I found dozens of discrepancies between the descriptions (abstracts) of scientific journal articles and the journal articles themselves; I also

found that the U.S. Public Health Service and the American Dental Association actually prefer to rely on the abstracts -- even though the discrepancies involve the movement of decimal points, and simple errors in arithmetic. Like Ecenbarger, I was not comforted . . . it didn't make sense.

Particularly disturbing were the discrepancies involving the quantity of fluoride capable of destroying a child's smile or causing osteoporosis, arthritis, lower back pain, heartburn, stomach cramps, diarrhea. These were not theories, but descriptions of the fate of hundreds of millions of people who developed Dental Fluorosis or Crippling Skeletal Fluorosis. . . not necessarily from fluoridated water, but from fluoride -- regardless of the source.

Although few of us are aware of the truly ubiquitous nature of fluorides, or their role in our lives and our history; we all understand the words overdose and side effect. Sooner or later, we must face the fact that our children are threatened, as we are, by a legacy of errors. The time has come for common sense, and change.

The U.S. Public Health Service and the American Dental Association are currently promoting the idea of universal mandatory water fluoridation. Why? Their own experts point out that cavity rates have decreased worldwide, without regard to the fluoride in a water supply . . . and without any connection between the fluoride in children's teeth and their experience with cavities. There's no benefit in exceeding the recommended dose, they say. On the contrary, the U.S. Public Health Service says fluoride makes dental enamel more porous, and makes bone more brittle.

During the last twenty years Uncle Sam's Experts have had a great deal to say about the nature of fluoride . . . things everyone should know. The problem is that Policy requires that these things never see the light of day. They lie buried under executive summaries and official interpretations handed out in press releases. . . but facts are facts -- no matter whose slick mouthpiece or distinguished scientist tries to tell you otherwise. Most of what you think you know about fluoride just isn't so. Consider the facts . . . check the references, and dare to think.

According to the National Research Council's 1993 review "It has been calculated that the amount of fluoride ingested with toothpaste (or mouth rinse) by children who live in a community with optimally fluoridated water, who have good control of swallowing, and who brush (or rinse) twice a day is approximately equal to the daily intake of fluoride with food, water, and beverages. In the case of younger children or those who, for any other reason, have poor control of swallowing, the daily intake of fluoride from dental products could exceed dietary intake.

"Investigators seeking to examine the possible relation between fluoride intake and health outcomes, such as dental caries, fluorosis, or quality of bone, need to be aware of the complex situation that exists today. It is no longer feasible to estimate with reasonable accuracy the level of fluoride exposure simply on the basis of concentration in drinking water supply."

Although the recommended "upper limit" for children is 0.04 to 0.07 mg/kg/day (milligrams per kilogram of body weight per day), and the "optimum" is 0.04 mg/kg/day; the National Academy of Sciences, National Research Council (NAS/NRC) reported in 1993: "Recent estimates of daily intake of fluoride from food and drink by North American children up to 2 years of age are 0.01 to 0.16 mg/kg in areas without fluoridation and 0.03 to 0.13 mg/kg in areas with fluoridation."

In 1951, NAS/NRC wrote: "For practical public health purposes, it has been proposed that a safe level has been reached when not more than 10 to 15 per cent of children age 12-14 years, who have used water supplies since birth, and who have been examined under standard conditions, show the mildest detectable type of mottled enamel."

In 1993 NAS/NRC reported that in optimally fluoridated Augusta, Georgia, 80.9% of the children aged 12-14 had mottled enamel due to excess fluoride. Most was mild to very mild, but moderate to severe fluorosis was found in 14% of the children. Some studies, they report, have found that with increasing fluoride, the number of cavities increases as well. They also note, "the most severe forms of dental fluorosis might be more than a cosmetic defect if enough fluorotic enamel is fractured and lost to cause pain, adversely affect food choices, compromise chewing efficiency, and require complex dental treatment."

In 1977 the National Research Council (NAS/NRC) reported: "The possibility of mutagenesis due to hydrogen fluoride is potentially important in cancer of the stomach. ... the much higher stomach cancer rates in Japan are related to intake patterns that are compatible with a hypothesis that fluoride is the crucial factor involved."

NAS/NRC also noted that "a retention of 2 mg/day would mean that an average individual would experience skeletal fluorosis after 40 years, based on an accumulation of 10,000 ppm fluoride in bone ash." It is generally agreed that approximately one-half of the total daily intake of fluoride will be retained. . . thus, according to our most prestigious scientists, the ingestion of less than 5 milligrams (mg) of fluoride daily will result, after 40 years, in the condition called Crippling Skeletal Fluorosis.

In 1977, the National Institute of Occupational Safety and Health (NIOSH) explained, "Fluorine and some of its compounds are primary irritants of skin, eyes, mucous membranes, and lungs. Thermal or chemical burns may result from contact ... even when they involve small body areas (less than 3%) can cause systemic effects of fluoride poisoning by absorption of the fluoride through the skin." Brief exposure to inhaled fluorine "has caused sore throat and chest pain, irreversible damage to the lungs, and death. Gastrointestinal symptoms of nausea, vomiting, diffuse abdominal cramps and diarrhea can be expected. Large doses produce central nervous system involvement with twitching of muscle groups, ... convulsions, and coma." Fluoride is the active ingredient in the deadly nerve gas, Sarin, and in the fungicide Flusilazole,

which caused crop damage and physical ailments in 40 states in the early 90s. Teflon is a fluoride product, as is freon.

In the 1940s, the U.S. Public Health Service was reporting a total daily fluoride intake from typical diets in the range of 0.2 to 0.3 milligrams. If the drinking water contained about 1 part per million fluoride, the total daily intake could be expected to reach about 1 to 1-1/2 milligrams.

By the 1970s, the total from dietary sources had increased to as much as 3.44 mg/day, even in non-fluoridated areas; and by 1991, the range in total daily dosage had exceeded 6-1/2 milligrams in areas said to enjoy optimal fluoridation; exceeding 7 mg/day in areas having 2 or more ppm in the water supply.

Once confined almost exclusively to drinking water, fluorides now reach us from a variety of sources, including virtually every food and beverage item; as well as dental products and drugs.

"Whereas dental fluorosis is easily recognized," said the World Health Organization in 1970, "the skeletal involvement is not clinically obvious until the advanced stage of crippling fluorosis ... early cases may be misdiagnosed as rheumatoid- or osteo-arthritis."

If we place our trust in the wisdom of the American Dental Association, and their pamphlet, Fluoridation Facts, we learn that for adults, "The possibility of adverse health effects from continuous low level consumption of fluoride over long periods has been studied by the National Academy of Sciences. The Academy found that the daily intake required to produce symptoms of chronic toxicity after years of consumption, is 20 to 80 milligrams or more depending upon body weight. Such heavy doses are associated with water supplies that contain at least ten parts per million of natural fluoride." However, if we take the time to check the World Health Organization reference cited by the ADA, we can immediately see that the dosage figures are just 2 to 8 mg per day, and the water supplies generally contain less than 1 part per million of natural fluoride.

The reference cited by NAS/NRC describes the development of Crippling Skeletal Fluorosis after exposures of eleven years duration, with a daily total expressed as 0.2 to 0.35 mg/kg/day. . . the equivalent, in terms of lifetime exposure to 2 milligrams daily for each 110 pounds of body weight. (lifetime = 55 to 96-1/4 years)

It doesn't take a rocket scientist to understand that 2 is considerably less than 7 -- trusting your dentist in the matter of water fluoridation requires a certain leap of faith.

NIOSH connects the dots between dentistry, industry, and fluoride in listing the various sources and uses of fluoride: "Elemental fluorine is used in the conversion of uranium tetrafluoride to uranium hexafluoride, in the synthesis of organic and inorganic fluorine compounds, and as an oxidizer in rocket fuel.

"Hydrogen fluoride, hydrofluoric acid, and its salts are used in the production of organic and inorganic fluorine compounds such as fluorides and plastics; as a catalyst, in the petroleum industry; as an insecticide; and to arrest the fermentation in brewing. It is utilized in the aluminum industry, in separating uranium isotopes, in cleaning cast iron, copper and brass, in removing efflorescence from brick and bone, in removing sand from metallic castings, in frosting and etching glass and enamel, in polishing crystal, in enameling and galvanizing iron, in working silk, in dye, and analytical chemistry, and to increase the porosity of ceramics. Fluorides are used as an electrolyte in aluminum manufacture, in smelting nickel, copper, gold, and silver, as a catalyst for organic reactions, a wood preservative, a fluoridation agent for drinking water, a bleaching agent for cane seats, in pesticides, rodenticides, and as a fermentation inhibitor. They are utilized in the manufacture of steel, iron, glass, ceramics, pottery, enamels, in castings for welding rods, and in cleaning graphite, metals, windows, and glassware. Exposure to fluorides may also occur during preparation of fertilizer from phosphate rock."

When I wrote to the National Academy of Sciences asking for the source of the 20 to 80 mg/day figures in the ADA pamphlet, they said the figures came from Harold C. Hodge, Ph.D., who was formerly Chairman of the NAS/NRC Committee on Toxicology. Dr. Hodge was also a consultant to several industries, involved in the development of the atomic bomb, worked with the Atomic Energy Commission, and participated in panels convened by NAS/NRC in 1951 and 1953. Panel chairman, Kenneth Maxcy, was consultant to the Secretary of War and editor for one of the leading industrial health journals. Panel member Francis Heyroth was Assistant Director of the Kettering Laboratory at the University of Cincinnati -- source of the abstracts used by the ADA as well as the Dental Division of the Public Health Service. Kettering's sponsors included aluminum, steel, petroleum, and chemical companies; and Kettering's director, Robert Kehoe, was medical director of the Ethyl Corporation, consultant to the Tennessee Valley Authority, the Atomic Energy Commission, the U.S. Air Force, and the Division of Occupational Medicine of the Public Health Service. He was a primary spokesman for the safety of fluoridation, and also testified for the safety of atmospheric lead from auto exhausts.

Hodge prepared a chart of fluoride effects for NAS/NRC in 1953, naming Roholm as his data source; and offered it in testimony before Congress in 1954, as they considered a bill to outlaw water fluoridation.

However, in order to convert the original data into a milligram per day figure, Hodge had to apply the mg/kg figures to a typical range in body weight. He chose 100 to 229 pounds. . . multiplying 100 times 0.2 to get 20 mg/day, and then multiplying 229 times 0.35 to get 80 mg/day -- the dosage in his chart and in the ADA pamphlet. Hodge had neglected to convert pounds to kilograms; and in doing so; he created an artificial margin of safety for water fluoridation. The erroneous figures found their way into hundreds of pamphlets, magazine articles, journals, and textbooks; unchecked for forty years.

The fluoride that is added to community water supplies does not come from a clean laboratory -- it comes with the rest of the scrubber water from the smokestacks of the fertilizer or aluminum industry. . . contaminated with other poisons in small but measurable quantities that industry considers safe. Just think of the savings!

The erroneous 20-80 mg figures created by the alliance of dentistry, industry, and national security made this possible. However, the National Research Council's Board on Environmental Studies and Toxicology corrected the error in the 1993 review for the EPA titled "Health Effects of Ingested Fluoride". (page 59)

Although the new figures are 10 to 20 mg/day for 10 to 20 years, the total quantity of fluoride ingested is the single most important factor in determining the clinical course of skeletal fluorosis. The severity of symptoms correlates directly with the level and duration of exposure, so that the advanced crippling stages can occur at any age, and has been reported even in pediatric age groups. If the time span is expanded to 40 to 80 years, the intake producing crippling would be 2-1/2 to 5 mg/day.

The symptoms of phase one skeletal fluorosis include sporadic pain and stiffness of joints, with minor osteosclerosis of the pelvis and vertebral column. Phase two is described as chronic joint pain, arthritic symptoms, slight calcification of ligaments, increased osteosclerosis of cancellous bones, with or without osteoporosis of the long bones; and phase three, limitation of joint movement, calcification of ligaments in the neck and vertebral column, crippling deformities of the spine and major joints, muscle wasting, and neurological defects with compression of the spinal cord. The condition has been observed in many countries throughout the world, but has never been a "reportable disease" in the United States.

This, then, is the risk we face with excess fluoride; and since fluoride is the 13th most abundant element and widely distributed throughout the earth, arthritis from fluoride has been a threat since the earliest times.

There is also the strong possibility of a connection between fluoride intake and kidney stones. In 1987 the fifth edition of Trace Elements in Human and Animal Nutrition was published by Academic Press; edited by Walter Mertz, U.S. Department of Agriculture. It describes symptoms including headache, gastrointestinal problems, and the arthritic complaints mentioned earlier; adding, "Although the exact genesis of renal stones in fluoride toxicity is not known, it is conjectured that insoluble calcium fluoride is deposited in the urinary tract as a nucleus around which other salts are deposited." They also discuss "neighborhood fluorosis," caused by the discharge of fluoride in smokestack emissions, mentioning reports from Ohio, where Chi Vit, an enamel factory in Urbana, managed to avoid the purchase of smokestack scrubbers in the late 1970s. As is the custom, the American Dental Association provided speakers to assure residents that fluoride is harmless. Anyone who disagreed was obviously misinformed, they said. "Trust your dentist."

In 1977, NIOSH explained, "Substances that act chemically to produce injury to organs and tissues of the body usually do so by two basic means: either by depressing or by stimulating the activity of the enzyme systems. A single substance may have more than one pathway and site of action. Multiple pathways of action may be invoked simply by differing doses of the toxic agent; low doses may stimulate enzyme action, high doses depress and inhibit the same or different enzyme systems. This is a characteristic action of most, if not all, toxic substances, including arsenic, benzene, chloroform, cobalt, fluoride, and vanadium.

"Potentiation and synergism, the enhanced toxicity of two or more simultaneously acting substances, can be explained by the action of one preventing the elimination or the metabolism of the other, wholly or in part, thus maintaining elevated systemic levels of the toxic agent, resulting in an observed toxicity greater than the additive toxicity of the combined components.

NIOSH quotes: "A. Marier, in his report, Environmental Fluoride, states that 'In several surveys in which sulphur dioxide had been suspected as the primary air pollutant, fluoride was found to be the factor responsible for environmental blight.' He points out that industries that release fluoride effluents also use fossil fuel as an energy source, thereby emitting significant quantities of sulphur dioxide, and comments on possible synergistic effects. 'Synergistic' means that a substance stimulates and enhances the effect of another substance. Thus, if the two occur together, the combined effect would be greater than the sum of either occurring alone. It is a phenomenon well known in pharmacology, but it does not appear to have been seriously considered in connection with fluoride from the medical point of view. So far, only environmentalists have looked at it.

"A large number of pesticides, chiefly organic phosphates and carbamates, act in the body by blocking this enzyme action, thus allowing excessive amounts of the muscle stimulator to accumulate. The excessive stimulation results in paralysis of the host."

If all this comes as a surprise to you, it is precisely because too many civic leaders, and others, have trusted their dentists in matters that have nothing to do with dentistry. Even more alarming, according to William L. Marcus, Ph.D., Senior Science Advisor, Office of Science and Technology, Environmental Protection Agency, "the levels of fluoride found in the bones of rodents who had osteosarcoma (bone cancer) was lower than the level found in human adults exposed to allowable levels of fluoride ... with the exception of fluoride, no other compounds including radioactive compounds, have been able to produce osteosarcomas in rodents."

Children have died in the dentist's chair after treatment with topical fluoride. Adults have died during kidney dialysis when fluoride spills occurred but were not reported. Household products, including toothpaste, have caused serious illness among unsuspecting consumers.

In February of 1972 the ADA reported that in fluoridated cities, the dentists reaped a net profit 17% higher than in no fluoridated cities. And, today, although the vast

majority of children are already showing clear signs of fluoride overdose, dentists follow the party line, arguing for universal mandatory water fluoridation, while ignoring current studies showing no significant difference in tooth decay rates between fluoridated and non-fluoridated areas worldwide.

In summary: documents sent to me by the National Academy of Sciences Institute of Medicine, and the Director of the Centers for Disease Control, describe increasing numbers of children whose teeth require complex dental treatment because of excess fluoride; and adults with headaches, back pain, gastro-intestinal problems, arthritic symptoms, and hyperparathyroidism; but no correlation between cavities and the fluoride incorporated into dental enamel, except that with increased dosage, cavities tend to increase as well.

In 1979, Edward Groth III, Senior Staff Officer, Environmental Studies Board, National Research Council, wrote: "...the politically minded zealots have used tactics of intimidation, professional and financial reprisals, derogatory personal attacks, and relentless public relations propaganda to silence scientific critics, to prevent the publication of adverse evidence, and to make politically untenable any interpretation except the official view, that fluoridation is absolutely safe. Can scientific evidence really be suppressed in the free world? Easily."

Obviously, things are not always what they seem. . . bargains not always bargains; and, as Francis Bacon observed, "Nothing doth more hurt in a state than that cunning men pass for wise."

REFERENCES

1. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals (1996) #8520 Sarin
2. Health Effects of Ingested Fluoride (1993) National Academy of Sciences
3. Review of Fluoride Benefits and Risks (1991) U.S. Dept. Health & Human Services, p.17.46
4. Trace Elements in Human and Animal Nutrition (1987) editor: Walter Mertz, U.S.D.A.
5. Occupational Diseases - A Guide to Their Recognition (1977) NIOSH, (U.S.Dept. H.E.W.)
6. Drinking Water and Health (1977) National Academy of Sciences, page 372
7. American Journal of Clinical Nutrition (1974) volume 27, pages 590-594
8. Fluorides - Biological Effects of Atmospheric Pollutants (1971) National Academy of Sciences, pp. 211,218
9. Fluorides and Human Health (1970) World Health Organization, pages 37,239,240
10. The Role of Fluoride in Public Health (1963) Kettering Laboratory, University of Cincinnati, Ohio
11. Fluoride Drinking Waters (1962) F. J. McClure, Editor, U.S.D.H.E.W.
12. Fluoridation: Facts, Not Myths (1957) American Dental Association
13. Fluoridation as a Public Health Measure (1954) James H. Shaw, Editor, page 49

14. American Journal of Public Health (December 1952) volume 42, page 1568
15. Fluorine Intoxication (1937) K. Roholm, H.K. Lewis & Co., Ltd., London, page 319
16. Journal of Dental Research (1933) volume 13, page 139,140
17. Fluoridation Facts, American Dental Association