

MEDICAL GENOCIDE

PART 24

THE POLITICS OF WATER

How the dental establishment pushed fluoride down Americans' throats.

BY GARY NULL

Imagine that America is being medicated en masse, with no opportunity to refuse the medication and almost totally unaware of its effects on the body. One reason for the public's ignorance is due, partially, to the fact that the results of official studies on the subject have been repressed. Scientists who object to the administration of the substance, pointing to evidence of its toxicity, are belittled as misinformed quacks. Huge corporations join forces with like-minded government agencies to maintain the profitable and convenient status quo. The American people, by and large, are not only unalarmed by this state of affairs, but they also believe that the government is actually looking out for the public health.

PAINTING BY DOUGLAS FRASER.

This situation really exists, and the "medication" is fluoride. Injected into the public water supply because of its supposed ability to ward off tooth decay, fluoridated water is assumed to be a good thing. Recent studies, however, are stirring up a battle that has been brewing for nearly 20 years.

Fluoride, one of the most abundant elements found on the earth's surface, exists naturally in the water supplies of several areas throughout the United States, particularly in Colorado and Texas. However, the fluoride used to artificially fluoridate our drinking water is most often a crude industrial-waste product of the aluminum and fertilizer industries. This fluoride is too toxic to be dumped in the ground, and at very high concentrations, it is a more powerful poison than arsenic. A limited market for this detritus was found among the manufacturers of insecticide and rat poison, but, by and large, fluoride waste was a nuisance to the industries that produced it. About 40 years ago, however, a far more substantial opportunity presented itself. New studies suggested a connection between traces of fluoride in drinking water and lower rates of tooth decay.

The connection was never proven, but, nonetheless, the aluminum and fertilizer industries had found the opportunity they were looking for. A 1951 article in *Chemical Week* was buoyant: "All over the country, slide rules are getting warm as waterworks engineers figure the cost of adding fluoride to their water supplies. They are riding a trend urged upon them by the U.S. Public Health Service [P.H.S.], the American Dental Association [A.D.A.], the State Dental authorities, various state and local health bodies, and vocal women's clubs from coast to coast. . . . It adds up to a nice piece of business on all sides, and many firms are cheering the P.H.S. and similar groups as they plump for increasing adoption of fluoridation."

The influence of the aluminum and fertilizer industries over government agencies has not diminished. An Environmental Protection Agency official stated in a 1983 letter that the E.P.A. "regards [fluoridation] as an ideal environmental solution to a long-standing problem. By recovering by-product hydro-fluosilicic acid from fertilizer manufacturing, water and air pollution are minimized and water utilities have a low-cost source of fluoride available to them."

In the United States, 121 million people depend on water supplies that are artificially fluoridated. Early investigators believed that fluoride would strengthen children's teeth and that the incidence of tooth decay would lessen. The evidence of fluoride's success is less than clear-cut, however. Although British Columbia has the lowest rate of fluoridated public water of any Canadian province—only 11 percent of its popu-

lation drinks treated water, as compared with 40 to 70 percent in other regions—it has the lowest rate of tooth decay in Canada. This fact was presented in a recent study published in *Chemical and Engineering News*, the publication of the American Chemical Society, the largest association of scientists in the United States. In addition, the study revealed that the lowest rates of tooth decay within the province were found in areas that do not have fluoridated water supplies.

A similar study completed in 1984 by the Missouri Bureau of Dental Health found that out of 6,500 second- and sixth-grade schoolchildren, there were "no significant differences between children drinking fluoridated water and those drinking suboptimally fluoridated water [that which is fluoridated at levels less than the standard one part per million]." This study also revealed that within given areas of the state, the per-

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centage of caries (tooth decay) was essentially the same among children in fluoridated and unfluoridated communities.

After ten years of fluoridation in Newburgh, New York, there were more schoolchildren with dental defects (3,139, or 63.2 percent) than in nearby unfluoridated Kingston, New York (2,209, or 41.6 percent). An analysis of decay rates in those cities, which was published in the May 1989 edition of the *American Journal of Public Health*, showed that while the prevalence of caries in fluoridated Newburgh was lower (an average of 1.5 percent having decayed, missing, or filled permanent teeth) than in Kingston (an average of only two percent), the decay rate over a period of decades was declining more rapidly in Kingston.

A New Zealand study of 60,000 schoolchildren in both fluoridated and unfluoridated areas showed little or no difference in the two groups' tooth-decay rates.

Mark Diesendorf, an applied mathematician and health researcher in the Human Sciences Program at Australian

National University, compared the results from 24 studies of unfluoridated districts in eight developed countries, including the United States. He concluded that the reduction of caries was just as great in the unfluoridated areas as in those that were fluoridated.

The largest, most detailed study of fluoride and tooth decay in America covered 39,000 schoolchildren, aged five to 17 and living in 84 communities, from 1986 to 1987. It was conducted by the National Institute of Dental Research (N.I.D.R.). John Yiamouyiannis, a leading opponent of fluoridation and a former biochemical editor at Chemical Abstracts Service, the world's largest chemical-information center, obtained the resulting data under the Freedom of Information Act and then published his findings in *The Washington Times* in May 1989.

According to Yiamouyiannis's analysis, the difference between tooth-decay rates in the fluoridated and unfluoridated areas was, at most, five percent. Of the 84 areas studied, 28 had been fluoridated for decades, 29 had never been fluoridated, and 27 had been partially fluoridated. The percentage of decay-free children in those areas was, respectively, 34, 35, and 31, and the average number of decayed, missing, or filled permanent teeth, 1.96, 1.99, and 2.18—not statistically significant differences.

Dr. James Carlos, chief of the N.I.D.R.'s epidemiology branch, disagreed with Yiamouyiannis's findings, claiming that a difference of at least 18 percent existed in the incidences of cavity-free schoolchildren in fluoridated and unfluoridated areas. Yiamouyiannis, however, says that the N.I.D.R. methodology was flawed and that he found errors in their computations.

As a result of this study, the National Federation of Federal Employees (N.F.F.E.) Local 2050, a union representing 1,100 professionals—including doctors, engineers, and lawyers who work for the E.P.A. headquarters in Washington, D.C.—requested that E.P.A. administrator William K. Reilly "immediately suspend the E.P.A.'s unqualified support of fluoridation" until that organization conducted its own assessment of the risks and benefits of fluoride exposure.

The lack of agreement among so many studies can be attributed to the impossibility of providing for a true control group. This is especially true in the United States, where fluoride has become a ubiquitous part of daily life. An N.I.D.R. report released in February 1990 stated that there is "no way to control either the exposure to fluoride in dentifrices [toothpaste, mouthwash, et cetera] or incidental exposure to fluoride in the diet." The report concludes: "No convincing evidence has been offered to refute the conclusion that the dramatic decrease in dental caries observed

in the United States during recent decades is primarily the result of this exposure to fluoride."

Diesendorf believes that other factors, such as better dental care, better nutrition, a lower percentage of sugar in children's diets, and changes in the immune status of the general population, play a more significant role in the nationwide decline in tooth-decay rates than fluoride alone. Even the N.I.D.R. report adds that "it is likely that if caries in children remains at low levels or declines further, the necessity of continuing the current variety and extent of fluoride-based prevention programs will be questioned. Unfortunately, such a debate will be lacking in scientific substance, since the relative contribution to overall caries prevention of the different forms of fluoride delivery cannot be measured, except under experimental conditions."

On another front *Chemical and Engineering News* has investigated recent studies that sought to demonstrate fluoride's usefulness in alleviating symptoms of the bone disease osteoporosis by creating greater bone density. According to Louis V. Avioli, a professor at the Washington University School of Medicine, a 1987 review of fluoride therapy for osteoporosis revealed that "sodium-fluoride therapy [was] accompanied by so many medical complications and side effects that it is hardly worth exploring in depth as a therapeutic mode for postmenopausal osteoporosis, since it fails to decrease the propensity for hip fractures and increases the incidence of stress fractures in the extremities."

Avioli's citing of fluoride's "medical complications and side effects" raises another issue: Regardless of fluoride's efficacy in preventing tooth decay, how safe is it?

Studies indicate that 93 percent of ingested fluoride is absorbed into the bloodstream. A good part is excreted, and the rest is deposited in bones and teeth, where it can accumulate with destructive results. In extreme cases this buildup can lead to the crippling disease known as skeletal fluorosis. A significant number of people in Japan, China, the Middle East, and Africa suffer from this disease after drinking naturally fluoridated water. (India alone accounts for nearly one million cases.) Skeletal fluorosis can cause a wasting of the muscular system, limited joint movements, deformities of the spine, considerable calcification of ligaments, and neurological defects.

Chemical and Engineering News reports only about a dozen cases of skeletal fluorosis in the United States, some at high fluoride levels and others at lower levels, where conditions such as diabetes or impaired kidney function force a high intake of water. It adds, however, that "critics of the E.P.A. standard

speculate that there probably have been many more cases of [skeletal] fluorosis—even crippling fluorosis—than the few reported in the literature, because most doctors in the U.S. have not studied the disease and do not know how to diagnose it."

A less extreme result of fluoride buildup is dental fluorosis, a condition that can leave children with permanently stained, brown, or mottled teeth. Many experts consider mottling to be the first clinical symptom of chronic fluoride poisoning. In its most severe form, dental fluorosis can cause teeth to become pitted and brittle, often cracking easily. A recent N.I.D.R. study found that one to two percent of those children in areas fluoridated at one part per million developed fluorosis and that up to 23 percent of those in areas naturally fluoridated at the level of four parts per million tended to develop severe dental fluorosis.

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It is nearly useless to suggest any maximum, safe intake of fluoride, and achieving a scientifically controlled dosage through the water supply is impossible, given the wide variation of daily water consumption among individuals. In November 1985 the *Journal of Dental Research* reported on a study revealing that adults in areas where the water is fluoridated take in anywhere from 1.8 to 3.6 milligrams of fluoride per day, as opposed to 0.43 to 1.19 milligrams per day in unfluoridated areas. In a land as climatically diverse as the United States, those living in hot or dry regions probably consume more water—and thus more fluoride—than others. No provision is made for these differences.

The late Dr. George Waldbott, founder and director of allergy clinics in four Detroit hospitals, warned in his book *Fluoridation: The Great Dilemma* (1978) that total fluoride ingestion in fluoridated areas was in the range of five milligrams per day. The New York State Coalition Opposed to Fluoridation claims that diabetics and those who perform manual labor can ingest up to 20 milligrams

of fluoride per day. A survey conducted by the Department of Agriculture and published in *Chemical and Engineering News* revealed that three percent of the United States' population drinks four or more liters of water every day. In areas where the water is naturally or artificially fluoridated at the level of four parts per million—the maximum level for artificial fluoridation allowed by the E.P.A. since 1986—individuals are ingesting 16 milligrams of fluoride a day from water alone.

The difference between one and four parts per million is quite small and serves as a reminder of the narrow margin of safety that exists between what we are told is an effective dose and a toxic dose. Dr. James Patrick, a former antibiotics-research scientist at the National Institutes of Health, summed up the problems of fluoridation in a 1982 appearance before a joint congressional committee. There was, he said, "a very low margin of safety involved in fluoridating water. A concentration of about one part per million is recommended for fluoridation, whereas in several countries, severe fluorosis has been documented from water supplies containing only two or three parts per million. In the development of drugs . . . we generally insist on a therapeutic index [margin of safety] of the order of 100; a therapeutic index of two or three is totally unacceptable, yet that is what has been proposed for public-water supplies."

We are mistaken if we believe that fluoride is only found in public-water supplies and toothpaste. It is present in, and may be ingested from, pharmaceuticals, aerosols, and food and beverages processed in fluoridated areas. Nearly all bottled drinks and canned foods in America are processed with fluoridated water, according to *Chemical and Engineering News*. To complicate things further, cooking with fluoridated water can greatly increase the fluoride content of food.

Because people are exposed to so much fluoride, some researchers say that there may no longer be as great a need—if one ever existed—for fluoride to be added to the water supply. The additional sources of fluoride, readily available in the forms of toothpaste, mouthwashes, fluoridated vitamins, and fluoride tablets, offer, for those who want it, the option of a supplemental fluoride intake that is easy to control and monitor.

Providing fluoride in the form of easily controlled supplements, rather than in the public-water supply, also makes financial sense. It is estimated that less than one percent of the fluoridated water reaches the people who are supposed to benefit from it—children. At the age of 13, any advantage that fluoridation offers comes to an end. The rest of the fluoride is consumed by

adults or is soaked up by suburban lawns. Fluoride tablets could be made available at a fraction of the cost of fluoridation. The health department of Clifton, New Jersey, supplies doctors with fluoride tablets to dispense to children at no charge. The cost to the city is about \$3.00 per child, per year; Clifton has been running the program successfully for over 20 years.

The U.S. Food and Drug Administration restricts access to fluoride, other than that contained in water or dentifrices, by requiring a prescription. Fluoridated vitamins, for example, are prescription-only products, and package inserts caution that prescribing physicians should check fluoride content in local drinking water and in the patient's other medications.

Fluorosis is not the only threat presented by excessive fluoride intake. In 1977 Yiamouyiannis and Dr. Dean Burk, a former head of the cellular chemistry section at the National Cancer Institute (N.C.I.), released a study that linked fluoridation with 10,000 cancer deaths per year in the United States. Comparing the cancer rates of the ten largest U.S. cities providing fluoridated water with that of the ten largest cities with unfluoridated water—both groups having had comparable cancer-death rates in the decade from 1940 to 1950, when neither group of cities

had fluoridation—they claimed to discover an occurrence of cancer five percent greater in those cities with fluoridated water. Earlier analysis by the N.C.I., however, had failed to pick up these extra deaths. Federal authorities claimed that Yiamouyiannis and Burk were in error, and that any discrepancies were caused by changes in the ages, gender, and racial compositions of these cities over the decades.

Nevertheless, when presented with this information in 1977, Congress instructed the National Toxicology Program to conduct a study to settle the question, Is fluoride a carcinogen? (The N.T.P. is run by the National Institute of

Environmental Health Sciences, which in turn is part of the U.S. Department of Health and Human Services' National Institutes of Health.) Due in 1980, this study was finally released in early 1990. In the meantime, in 1986 the E.P.A. raised the allowable fluoride level in naturally fluoridated water from 2.4 to four parts per million, a measure that spared those communities with higher levels of natural fluoridation the expensive process of defluoridating their water supply.

The N.T.P. study tested an intake of fluoride on equal numbers of mice and rats of both sexes over two years. Half ingested a fixed dosage of fluoride in

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When the N.T.P. study results were finally made public in early 1990, National Federation of Federal Employees Local 2050 President Dr. Robert Carton, who himself works in the E.P.A.'s Toxic Substances Division, released the following statement: "Four years ago N.F.F.E. Local 2050, which represents all 1,100 professionals at E.P.A. headquarters, alerted then administrator Lee Thomas to the fact that the scientific-

support documents for the fluoride in drinking water were fatally flawed. . . . The fluoride juggernaut proceeded as it apparently had for the last 40 years—without any regard for the facts or concern for public health. . . .

"Four years ago we realized that the claim that there was no evidence that fluoride could cause genetic effects or cancer could not be supported by the shoddy documents thrown together by the E.P.A. contractor.

"It was apparent to us that the E.P.A. bowed to political pressure without having done an in-depth, independent analysis, using in-house experts, of the currently existing data that show fluoride causes genetic

effects, promotes the growth of cancerous tissue, and is likely to cause cancer in humans. If the E.P.A. had done so, it would have been readily apparent—as it was to Congress in 1977—that there were serious reasons to believe in a cancer threat.

"The behavior by the E.P.A. in this affair raises questions about the integrity of science at the E.P.A. and the role of professional scientists, lawyers, and engineers who provide the interpretation of the available data and the judgments necessary to protect the public health and the environment."

Analyzing the N.T.P. data, Yiamouyiannis also noted the appearance in the

their drinking water, while the other half drank unfluoridated water. Of the 130 male rats given water with 45 to 79 parts per million of fluoride, five developed osteosarcoma, a rare bone cancer. (Higher doses are administered to test animals to compensate for the animals' shorter life span and because humans are generally more vulnerable than test animals on a body-weight basis.) At those doses, two males and three females got squamous-cell carcinoma—a different type of cancer—in the mouth. Both the rats and the mice developed fluorosis of the teeth, and the female rats suffered from osteosclerosis.

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mice of a particularly rare form of liver cancer. This cancer is so rare, he says, that the odds of its appearance in this study by chance are one in two million in male mice and one in 100,000 in female mice. Also found in the rats given fluoridated water were precancerous changes in oral squamous cells and an increase in squamous-cell and thyroid tumors.

The release of the N.T.P. study did create some concern. "Previous animal tests suggesting that water fluoridation might pose risks to humans have been widely discounted as technically flawed," Malcolm W. Browne wrote in *The New York Times* on March 13, 1990, "but the latest investigation carefully weeded out sources of experimental or statistical error, many scientists say, and cannot be discounted." In the same article Dr. Edward Groth III, a biologist who serves as technical director of Consumers Union, agrees: "The importance of this study . . . is that it is the first fluoride bioassay giving positive results in which the latest state-of-the-art procedures have been rigorously applied. It has to be considered seriously."

In February 1990 *The Medical Tribune*, an international medical weekly, quoted a government scientist as follows: "It is difficult to see how the E.P.A. can fail to regulate fluoride as a carcinogen in light of what the N.T.P. has found."

Government health officials were quick to downplay the results of the N.T.P. study and reassure a concerned public. The cancers in lab animals may not reflect the effects of fluoride on humans, they reasoned, since the level of fluoridation in the test animals' water was so high. The high incidence of cancer in fluoride-dosed rats "could be the result of chance alone," said Dr. David Hoel, acting director of the National Institute of Environmental Health Sciences. He also cautioned that the data resulted from only one study. The American Dental Association stated that "the amount of sodium fluoride given the rodents in the study far exceeded the optimal level of fluoride present in drinking water, one part per million. . . . A person would have to consume about 380 eight-ounce glasses of water a day to obtain 45 parts per million of fluoride, and nearly 700 glasses daily for 79 parts per million."

If these officials truly believed that the high doses of fluoride given to the test animals weakened the study's relevance to human subjects, it would be a remarkable about-face: *The Federal Register*, the handbook of government practices, states that "the high exposure of experimental animals to toxic agents is a necessary and valid method of discovering possible carcinogenic hazards in man." To disavow the findings of the N.T.P. study would be

to disavow those of all such studies. As *Newsweek* pointed out in February 1990, "such megadosing is standard toxicological practice. It's the only way to detect an effect without using an impossibly large number of test animals to stand in for humans exposed to the substance."

Nor was the N.T.P. study alone in revealing a relationship between fluoride and cancer. In February 1990 the *Medical Tribune* reported on a study that was conducted by a toothpaste manufacturer in the early 1980s, but was never made public. The manufacturer termed the results "clean," which is to say, free of significant malignant tumors. Yiamouyiannis, however, analyzing the available data from the study, found that exposure to as little as one part per million of fluoride significantly increased genetic damage, and that there was a tie between fluoride and precancerous changes in oral cells.

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Occasionally, the justice system has been called on to render an opinion on fluoridation. Judge Ronald A. Nieman of Illinois ruled in 1982 that "a risk of serious health hazards" does exist. In a 1978 court case focusing on the Burk-Yiamouyiannis study, Judge John Flaherty, now of the Supreme Court of Pennsylvania, stated after 20 days of hearings that he was "compellingly convinced" of the adverse effects of fluoridation and that it can be linked to cancer, allergies, and to mutagenic and other dangerous effects.

Ten years later he affirmed his convictions about fluoride: "Those who belittled critics do fluoridation of the public a disservice, yet it seems, in the face of strong, uncontradicted prima facie evidence, that is the tactic most often employed."

Both judges' decisions were overturned on appeal on jurisdictional grounds. That is, the governing bodies retained the right to fluoridate or not fluoridate, regardless of the scientific evidence upon which the judges based their decisions.

In *Fluoride: The Great Dilemma*, Wald-

bott writes that the controversy over fluoridating water supplies has become "a political, not a scientific, health issue." This has been the case, in fact, from the very beginning of the Public Health Service's promotion of fluoride. The P.H.S. first endorsed fluoride in 1915, long before many of its health effects were known. While officially committed to and responsible for promoting fluoridation, the organization was also the principle source of funds for most fluoride research, resulting in a fundamental conflict of interest. Repeal of the fluoridation laws would constitute a considerable loss of face for the agency. Dental associations and physicians all unanimously supported fluoridation as well. With this powerful coalition behind fluoride, it is hardly surprising that relatively few studies have been undertaken revealing its effects on children and pregnant women, or on possible links between fluoridation and cancer, birth defects, and skeletal fluorosis.

To date, most of Western Europe has rejected fluoridation. The Swedish government, after seeking the opinion of the Nobel Medical Institute, which advised against it, and after 11 years of testing, banned fluoridation in 1971. The Netherlands banned it in 1976, after 23 years of tests. Denmark has also banned fluoridation, and France has never acknowledged any health benefits that can be derived from it. West Germany—now the united Germany—discontinued fluoridation in 1971 after 18 years of experiments.

An issue that has largely escaped notice in the fluoridation battle has been described by columnist James Kilpatrick as "the right of each person to control the medication he or she takes." The public has a strong opinion on the matter: 60 percent of the approximately 20,000 referenda on fluoridation since 1950 have turned down that right. "In light of the uncertainty, critics [of fluoridation] argue that administrative bodies are unjustified in imposing fluoridation on communities without obtaining public consent," reports a recent *New York Times* article. "The real issue here is not just the scientific debate. The question is whether any establishment has the right to decide that benefits outweigh risks and impose involuntary medication on an entire population. In the case of fluoridation, the dental establishment has made opposition to fluoridation seem intellectually disreputable. Some people regard that as tyranny."

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