Fluoride: Killing Us Softly

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There's nothing like a glass of cool, clear water to quench one's thirst. But the next time you or your child reaches for one, you might want to question whether that water is in fact, too toxic to drink. If your water is fluoridated, the answer may well be yes.

For decades, we have been told a lie, a lie that has led to the deaths of hundreds of thousands of Americans and the weakening of the immune systems of tens of millions more. This lie is called fluoridation. A process we were led to believe was a safe and effective method of protecting teeth from decay is in fact a fraud. For decades it's been shown that fluoridation is neither essential for good health nor protective of teeth. What it does is poison the body. We should all at this point be asking how and why public health policy and the American media continue to live with and perpetuate this scientific sham.

The Latest in Fluoride News

Today more than ever, evidence of fluoride's toxicity is entering the public sphere. The summer of 2012 saw the publication of a systematic review and meta-analysis by researchers at Harvard University that explored the link between exposure to fluoride and neurological and cognitive function among children. The report pooled data from over 27 studies- many of them from China- carried out over the course of 22 years. The results, which were published in the journal Environmental Health Sciences showed a strong connection between exposure to fluoride in drinking water and decreased IQ scores in children. The team concluded that

"the results suggest that fluoride may be a developmental neurotoxicant that affects brain development at exposures much below those that can cause toxicity in adults." [1]

The newest scientific data suggest that the damaging effects of fluoride extend to reproductive health as well. A 2013 study published in the journal Archives of Toxicology showed a link between fluoride exposure and male infertility in mice. The study's findings suggest that sodium fluoride impairs the ability of sperm cells in mice to normally fertilize the egg through a process known as chemotaxis. [2] This is the latest in more than 60 scientific studies on animals that have identified an association between male infertility and fluoride exposure.[3]

Adding more fuel to the fluoride controversy is a recent investigative report by NaturalNews exposing how the chemicals used to fluoridate United States' water systems today are commonly purchased from Chinese chemical plants looking to discard surplus stores of this form of industrial waste. Disturbingly, the report details that some Chinese vendors of fluoride advertise on their website that their product can be

used as an “adhesive preservative”, an “insecticide” as well as a” flux for soldering and welding”.[4] One Chinese manufacturer, Shanghai Polymet Commodities Ltd,. which produces fluoride destined for municipal water reserves in the United States, notes on their website that their fluoride is “highly corrosive to human skin and harmful to people’s respiratory organs”. [5]

The Fluoride Phase Out at Home and Abroad

There are many signs in recent years that indicate growing skepticism over fluoridation. The New York Times reported in October 2011 that in the previous four years, about 200 jurisdictions across the USA moved to cease water fluoridation. A panel composed of scientists and health professionals in Fairbanks, Alaska recently recommended ceasing fluoridation of the county water supply after concluding that the addition of fluoride to already naturally-fluoridated reserves could pose health risks to 700,000 residents. The move to end fluoridation would save the county an estimated $205,000 annually. [6]

The city of Portland made headlines in 2013 when it voted down a measure to fluoridate its water supply. The citizens of Portland have rejected introducing the chemical to drinking water on three separate occasions since the 1950’s. Portland remains the largest city in the United States to shun fluoridation.[7]

The movement against fluoridation has gained traction overseas as well. In 2013, Israel’s Ministry of Health committed to a countrywide phase-out of fluoridation. The decision came after Israel’s Supreme Court deemed the existing health regulations requiring fluoridation to be based on science that is “outdated” and “no longer widely accepted.”[8]

Also this year, the government of the Australian state of Queensland eliminated $14 million in funding for its state-wide fluoridation campaign. The decision, which was executed by the Liberal National Party (LNP) government, forced local councils to vote on whether or not to introduce fluoride to their water supplies. Less than two months after the decision came down, several communities including the town of Cairns halted fluoridation. As a result, nearly 200,000 Australians will no longer be exposed to fluoride in their drinking water.[9]

An ever-growing number of institutions and individuals are questioning the wisdom of fluoridation. At the fore of the movement are thousands of scientific authorities and health care professionals who are speaking out about the hazards of this damaging additive. As of November 2013, a group of over 4549 professionals including 361 dentists and 562 medical doctors have added their names to a petition aimed at ending fluoridation started by the Fluoride Action Network. Among the prominent signatories are Nobel Laureate Arvid Carlsson and William Marcus, PhD who served as the chief toxicologist of the EPA Water Division.[10]

The above sampling of recent news items on fluoride brings into sharp focus just how urgent it is to carry out a critical reassessment of the mass fluoridation campaign that currently affects hundreds of millions of Americans. In order to better understand the massive deception surrounding this toxic chemical, we must look back to the sordid history of how fluoride was first introduced.

How to Market a Toxic Waste

"We would not purposely add arsenic to the water supply. And we would not purposely add lead. But we do add fluoride. The fact is that fluoride is more toxic than lead and just slightly less toxic than arsenic." [11]

These words of Dr. John Yiamouyiannis may come as a shock to you because, if you're like most Americans, you have positive associations with fluoride. You may envision tooth protection, strong bones, and a government that cares about your dental needs. What you've probably never been told is that the fluoride added to drinking water and toothpaste is a crude industrial waste product of the aluminum and fertilizer industries, and a substance toxic enough to be used as rat poison. How is it that Americans have learned to love an environmental hazard? This phenomenon can be attributed to a carefully planned marketing program begun even before Grand Rapids, Michigan, became the first community to officially fluoridate its drinking water in 1945. [12] As a result of this ongoing campaign, nearly two-thirds of the nation has enthusiastically followed Grand Rapids' example. But this push for fluoridation has less to do with a concern for America's health than with industry's penchant to expand at the expense of our nation's well-being.

The first thing you have to understand about fluoride is that it's the problem child of industry. Its toxicity was recognized at the beginning of the Industrial Revolution, when, in the 1850s iron and copper factories discharged it into the air and poisoned plants, animals, and people.[13] The problem was exacerbated in the 1920s when rapid industrial growth meant massive pollution. Medical writer Joel Griffiths explains that "it was abundantly clear to both industry and government that spectacular U.S. industrial expansion – and the economic and military power and vast profits it promised – would necessitate releasing millions of tons of waste fluoride into the environment."[14] Their biggest fear was that "if serious injury to people were established, lawsuits alone could prove devastating to companies, while public outcry could force industry-wide government regulations, billions in pollution-control costs, and even mandatory changes in high-fluoride raw materials and profitable technologies." [15]

At first, industry could dispose of fluoride legally only in small amounts by selling it to insecticide and rat poison manufacturers. [16] Then a commercial outlet was devised in the 1930s when a connection was made between water supplies bearing traces of fluoride and lower rates of tooth decay. Griffiths writes that this was not a scientific breakthrough, but rather part of a "public disinformation campaign" by the aluminum industry "to convince the public that fluoride was safe and good." Industry's need prompted Alcoa-funded scientist Gerald J. Cox to announce that "The present trend

toward complete removal of fluoride from water may need some reversal." [17] Griffiths writes:

"The big news in Cox's announcement was that this 'apparently worthless by-product' had not only been proved safe (in low doses), but actually beneficial; it might reduce cavities in children. A proposal was in the air to add fluoride to the entire nation's drinking water. While the dose to each individual would be low, 'fluoridation' on a national scale would require the annual addition of hundreds of thousands of tons of fluoride to the country's drinking water.

"Government and industry – especially Alcoa – strongly supported intentional water fluoridation… [it] made possible a master public relations stroke – one that could keep scientists and the public off fluoride's case for years to come. If the leaders of dentistry, medicine, and public health could be persuaded to endorse fluoride in the public's drinking water, proclaiming to the nation that there was a 'wide margin of safety,' how were they going to turn around later and say industry's fluoride pollution was dangerous?

"As for the public, if fluoride could be introduced as a health enhancing substance that should be added to the environment for the children's sake, those opposing it would look like quacks and lunatics….

"Back at the Mellon Institute, Alcoa's Pittsburgh Industrial research lab, this news was galvanic. Alcoa-sponsored biochemist Gerald J. Cox immediately fluoridated some lab rats in a study and concluded that fluoride reduced cavities and that

'The case should be regarded as proved.' In a historic moment in 1939, the first public proposal that the U.S. should fluoridate its water supplies was made – not by a doctor, or dentist, but by Cox, an industry scientist working for a company threatened by fluoride damage claims." [18]

Once the plan was put into action, industry was buoyant. They had finally found the channel for fluoride that they were looking for, and they were even cheered on by dentists, government agencies, and the public. Chemical Week, a publication for the chemical industry, described the tenor of the times:

"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, the American Dental Association, the State Dental Health Directors, 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 PHS and similar groups as they plump for increasing adoption of fluoridation." [19]

Such overwhelming acceptance allowed government and industry to proceed hastily, albeit irresponsibly. The Grand Rapids experiment was supposed to take 15 years,

during which time health benefits and hazards were to be studied. In 1946, however, just one year into the experiment, six more U.S. cities adopted the process. By 1947, 87 more communities were treated; popular demand was the official reason for this unscientific haste.

The general public and its leaders did support the cause, but only after a massive government public relations campaign spearheaded by Edward L. Bernays, a nephew of Sigmund Freud. Bernays, a public relations pioneer who has been called "the original spin doctor," [20] was a masterful PR strategist. As a result of his influence, Griffiths writes,

"Almost overnight…the popular image of fluoride – which at the time was being widely sold as rat and bug poison – became that of a beneficial provider of gleaming smiles, absolutely safe, and good for children, bestowed by a benevolent paternal government. Its opponents were permanently engraved on the public mind as crackpots and right-wing loonies." [21]

Griffiths explains that while opposition to fluoridation is usually associated with right-wingers, this picture is not totally accurate. He provides an interesting historical perspective on the anti-fluoridation stance:

"Fluoridation attracted opponents from every point on the continuum of politics and sanity. The prospect of the government mass-medicating the water supplies with a well-known rat poison to prevent a nonlethal disease flipped the switches of delusionals across the country – as well as generating concern among responsible scientists, doctors, and citizens.

"Moreover, by a fortuitous twist of circumstances, fluoride's natural opponents on the left were alienated from the rest of the opposition. Oscar Ewing, a Federal Security Agency administrator, was a Truman "fair dealer" who pushed many progressive programs such as nationalized medicine. Fluoridation was lumped with his proposals. Inevitably, it was attacked by conservatives as a manifestation of "creeping socialism," while the left rallied to its support. Later during the McCarthy era, the left was further alienated from the opposition when extreme right-wing groups, including the John Birch Society and the Ku Klux Klan, raved that fluoridation was a plot by the Soviet Union and/or communists in the government to poison America's brain cells.

"It was a simple task for promoters, under the guidance of the 'original spin doctor,' to paint all opponents as deranged – and they played this angle to the hilt….

"Actually, many of the strongest opponents originally started out as proponents, but changed their minds after a close look at the evidence. And many opponents came to view fluoridation not as a communist plot, but simply as a capitalist-style con job of epic proportions. Some could be termed early environmentalists, such as the physicians George L. Waldbott and Frederick B. Exner, who first documented government-industry complicity in hiding the hazards of fluoride pollution from the public. Waldbott and Exner

risked their careers in a clash with fluoride defenders, only to see their cause buried in toothpaste ads." [22]

By 1950, fluoridation's image was a sterling one, and there was not much science could do at this point. The Public Health Service was fluoridation's main source of funding as well as its promoter, and therefore caught in a fundamental conflict of interest. [12] If fluoridation were found to be unsafe and ineffective, and laws were repealed, the organization feared a loss of face, since scientists, politicians, dental groups, and physicians unanimously supported it. [23] For this reason, studies concerning its effects were not undertaken. The Oakland Tribune noted this when it stated that "public health officials have often suppressed scientific doubts" about fluoridation.[24] Waldbott sums up the situation when he says that from the beginning, the controversy over fluoridating water supplies was "a political, not a scientific health issue."[25]

The marketing of fluoride continues. In a 1983 letter from the Environmental Protection Agency, then Deputy Assistant Administrator for Water, Rebecca Hammer, writes that the EPA "regards [fluoridation] as an ideal environmental solution to a long-standing problem. By recovering by-product fluosilicic acid from fertilizer manufacturing, water and air pollution are minimized and water utilities have a low-cost source of fluoride available to them." [26] A 1992 policy statement from the Department of Health and Human Services says, "A recent comprehensive PHS review of the benefits and potential health risks of fluoride has concluded that the practice of fluoridating community water supplies is safe and effective." [27]

According to the CDC website, about 200 million Americans in 16,500 communities are exposed to fluoridated water. Out of the 50 largest cities in the US, 43 have fluoridated water. [28]

To help celebrate fluoride's widespread use, the media recently reported on the 50th anniversary of fluoridation in Grand Rapids. Newspaper articles titled "Fluoridation: a shining public health success" [29] and "After 50 years, fluoride still works with a smile" [30] painted glowing pictures of the practice. Had investigators looked more closely, though, they might have learned that children in Muskegon, Michigan, an unfluoridated "control" city, had equal drops in dental decay. They might also have learned of the other studies that dispute the supposed wonders of fluoride.

The Fluoride Myth Doesn't Hold Water

The big hope for fluoride was its ability to immunize children's developing teeth against cavities. Rates of dental caries were supposed to plummet in areas where water was treated. Yet decades of experience and worldwide research have contradicted this expectation numerous times. Here are just a few examples:

In British Columbia, only 11% of the population drinks fluoridated water, as opposed to 40-70% in other Canadian regions. Yet British Columbia has the lowest rate of tooth

decay in Canada. In addition, the lowest rates of dental caries within the province are found in areas that do not have their water supplies fluoridated. [31]

According to a Sierra Club study, people in unfluoridated developing nations have fewer dental caries than those living in industrialized nations. As a result, they conclude that "fluoride is not essential to dental health." [32]

In 1986-87, the largest study on fluoridation and tooth decay ever was performed. The subjects were 39,000 school children between 5 and 17 living in 84 areas around the country. A third of the places were fluoridated, a third were partially fluoridated, and a third were not. Results indicate no statistically significant differences in dental decay between fluoridated and unfluoridated cities. [33]

A World Health Organization survey reports a decline of dental decay in western Europe, which is 98% unfluoridated. They state that western Europe's declining dental decay rates are equal to and sometimes better than those in the U.S. [34]

A 1992 University of Arizona study yielded surprising results when they found that"the more fluoride a child drinks, the more cavities appear in the teeth." [35]

Although all Native American reservations are fluoridated, children living there have much higher incidences of dental decay and other oral health problems than do children living in other U.S. communities. [36]

In light of all the evidence, fluoride proponents now make more modest claims. For example, in 1988, the ADA professed that a 40- to 60% cavity reduction could be achieved with the help of fluoride. Now they claim an 18- to 25% reduction. Other promoters mention a 12% decline in tooth decay.

And some former supporters are even beginning to question the need for fluoridation altogether. In 1990, a National Institute for Dental Research report stated that "it is likely that if caries in children remain at low levels or decline further, the necessity of continuing the current variety and extent of fluoride-based prevention programs will be questioned." [37]

Most government agencies, however, continue to ignore the scientific evidence and to market fluoridation by making fictional claims about its benefits and pushing for its expansion. For instance, according to the U.S. Department of Health and Human Services,

"National surveys of oral health dating back several decades document continuing decreases in tooth decay in children, adults and senior citizens. Nevertheless, there are parts of the country and particular populations that remain without protection. For these reasons, the U.S. PHS … has set a national goal for the year 2000 that 75% of persons served by community water systems will have access to optimally fluoridated drinking water; currently this figure is just about 60%. The year 2000 target goal is both desirable

and yet challenging, based on past progress and continuing evidence of effectiveness and safety of this public health measure." [38]

This statement is flawed on several accounts. First, as we've seen, research does not support the effectiveness of fluoridation for preventing tooth disease. Second, purported benefits are supposedly for children, not adults and senior citizens. At about age 13, any advantage fluoridation might offer comes to an end, and less than 1% of the fluoridated water supply reaches this population. And third, fluoridation has never been proven safe. On the contrary, several studies directly link fluoridation to skeletal fluorosis, dental fluorosis, and several rare forms of cancer. This alone should frighten us away from its use.

Biological Safety Concerns

Only a small margin separates supposedly beneficial fluoride levels from amounts that are known to cause adverse effects. Dr. James Patrick, a former antibiotics research scientist at the National Institutes of Health, describes the predicament:

"[There is] a very low margin of safety involved in fluoridating water. A concentration of about 1 ppm is recommended…in several countries, severe fluorosis has been documented from water supplies containing only 2 or 3 ppm. In the development of drugs…we generally insist on a therapeutic index (margin of safety) of the order of 100; a therapeutic index of 2 or 3 is totally unacceptable, yet that is what has been proposed for public water supplies."[39]

Other countries argue that even 1 ppm is not a safe concentration. Canadian studies, for example, imply that children under three should have no fluoride whatsoever. The Journal of the Canadian Dental Association states that "Fluoride supplements should not be recommended for children less than 3 years old." [40] Since these supplements contain the same amount of fluoride as water does, they are basically saying that children under the age of three shouldn't be drinking fluoridated water at all, under any circumstances. Japan has reduced the amount of fluoride in their drinking water to one-eighth of what is recommended in the U.S. Instead of 1 milligram per liter, they use less than 15 hundredths of a milligram per liter as the upper limit allowed. [41]

Even supposing that low concentrations are safe, there is no way to control how much fluoride different people consume, as some take in a lot more than others. For example, laborers, athletes, diabetics, and those living in hot or dry regions can all be expected to drink more water, and therefore more fluoride (in fluoridated areas) than others. [42] Due to such wide variations in water consumption, it is impossible to scientifically control what dosage of fluoride a person receives via the water supply.[43]

Another concern is that fluoride is not found only in drinking water; it is everywhere. Fluoride is found in foods that are processed with it, which, in the United States, include nearly all bottled drinks and canned foods. [44] Researchers writing in The Journal of Clinical Pediatric Dentistry have found that fruit juices, in particular, contain significant

amounts of fluoride. In one study, a variety of popular juices and juice blends were analyzed and it was discovered that 42% of the samples examined had more than l ppm of fluoride, with some brands of grape juice containing much higher levels – up to 6.8 ppm! The authors cite the common practice of using fluoride-containing insecticide in growing grapes as a factor in these high levels, and they suggest that the fluoride content of beverages be printed on their labels, as is other nutritional information. [45] Considering how much juice some children ingest, and the fact that youngsters often insist on particular brands that they consume day after day, labeling seems like a prudent idea. But beyond this is the larger issue that this study brings up: Is it wise to subject children and others who are heavy juice drinkers to additional fluoride in their water?

Here's a little-publicized reality: Cooking can greatly increase a food's fluoride content. Peas, for example, contain 12 micrograms of fluoride when raw and 1500 micrograms after they are cooked in fluoridated water, which is a tremendous difference. Also, we should keep in mind that fluoride is an ingredient in pharmaceuticals, aerosols, insecticides, and pesticides.

And of course, toothpastes. It's interesting to note that in the 1950s, fluoridated toothpastes were required to carry warnings on their labels saying that they were not to be used in areas where water was already fluoridated. Crest toothpaste went so far as to write: "Caution: Children under 6 should not use Crest." These regulations were dropped in 1958, although no new research was available to prove that the overdose hazard no longer existed. [46]

Today, common fluoride levels in toothpaste are 1000 ppm. Research chemist Woodfun Ligon notes that swallowing a small amount adds substantially to fluoride intake. [47] Dentists say that children commonly ingest up to 0.5 mg of fluoride a day from toothpaste. [48]

This inevitably raises another issue: How safe is all this fluoride? According to scientists and informed doctors, such as Dr. John Lee, it is not safe at all. Dr. Lee first took an anti-fluoridation stance back in 1972, when as chairman of an environmental health committee for a local medical society, he was asked to state their position on the subject. He stated that after investigating the references given by both pro- and anti-fluoridationists, the group discovered three important things:

"One, the claims of benefit of fluoride, the 60% reduction of cavities, was not established by any of these studies. Two, we found that the investigations into the toxic side effects of fluoride have not been done in any way that was acceptable. And three, we discovered that the estimate of the amount of fluoride in the food chain, in the total daily fluoride intake, had been measured in 1943, and not since then. By adding the amount of fluoride that we now have in the food chain, which comes from food processing with fluoridated water, plus all the fluoridated toothpaste that was not present in 1943, we found that the daily intake of fluoride was far in excess of what was considered optimal." [49]

What happens when fluoride intake exceeds the optimal? The inescapable fact is that this substance has been associated with severe health problems, ranging from skeletal and dental fluorosis to bone fractures, to fluoride poisoning, and even to cancer.

Skeletal Fluorosis

When fluoride is ingested, approximately 93% of it is absorbed into the bloodstream. A good part of the material is excreted, but the rest is deposited in the bones and teeth, and is capable of causing a crippling skeletal fluorosis. This is a condition that can damage the musculoskeletal and nervous systems and result in muscle wasting, limited joint motion, spine deformities, and calcification of the ligaments, as well as neurological deficits.

Large numbers of people in Japan, China, India, the Middle East, and Africa have been diagnosed with skeletal fluorosis from drinking naturally fluoridated water. In India alone, nearly a million people suffer from the affliction. [39] While only a dozen cases of skeletal fluorosis have been reported in the United States, Chemical and Engineering News states that "critics of the EPA standard speculate that there probably have been many more cases of 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." [50]

Radiologic changes in bone occur when fluoride exposure is 5 mg/day, according to the late Dr. George Waldbott, author of Fluoridation: The Great Dilemma. While this 5 mg/day level is the amount of fluoride ingested by most people living in fluoridated areas, [51] the number increases for diabetics and laborers, who can ingest up to 20 mg of fluoride daily. In addition, a survey conducted by the Department of Agriculture shows that 3% of the U.S. population drinks 4 liters or more of water every day. If these individuals live in areas where the water contains a fluoride level of 4 ppm, allowed by the EPA, they are ingesting 16 mg/day from the consumption of water alone, and are thus at greater risk for getting skeletal fluorosis. [52]

Dental Fluorosis

According to a 1989 National Institute for Dental Research study, 1-2% of children living in areas fluoridated at 1 ppm develop dental fluorosis, that is, permanently stained, brown mottled teeth. Up to 23% of children living in areas naturally fluoridated at 4 ppm develop severe dental fluorosis. [53] Other research gives higher figures. The publication Health Effects of Ingested Fluoride, put out by the National Academy of Sciences, reports that in areas with optimally fluoridated water (1 ppm, either natural or added), dental fluorosis levels in recent years ranged from 8 to 51%. Recently, a prevalence of slightly over 80% was reported in children 12-14 years old in Augusta, Georgia.

Fluoride is a noteworthy chemical additive in that its officially acknowledged benefit and damage levels are about the same. Writing in The Progressive, science journalist Daniel Grossman elucidates this point:

"Though many beneficial chemicals are dangerous when consumed at excessive levels, fluoride is unique because the amount that dentists recommend to prevent cavities is about the same as the amount that causes dental fluorosis." [54]

Although the American Dental Association and the government consider dental fluorosis only a cosmetic problem, the American Journal of Public Health says that "…brittleness of moderately and severely mottled teeth may be associated with elevated caries levels." [45] In other words, in these cases the fluoride is causing the exact problem that it's supposed to prevent. Yiamouyiannis adds, "In highly naturally-fluoridated areas, the teeth actually crumble as a result. These are the first visible symptoms of fluoride poisoning." [55]

Also, when considering dental fluorosis, there are factors beyond the physical that you can't ignore – the negative psychological effects of having moderately to severely mottled teeth. These were recognized in a 1984 National Institute of Mental Health panel that looked into this problem.

A telling trend is that TV commercials for toothpaste, and toothpaste tubes themselves, are now downplaying fluoride content as a virtue. This was noted in an article in the Sarasota/Florida ECO Report, [56] whose author, George Glasser, feels that manufacturers are distancing themselves from the additive because of fears of lawsuits. The climate is ripe for these, and Glasser points out that such a class action suit has already been filed in England against the manufacturers of fluoride-containing products on behalf of children suffering from dental fluorosis.

Bone Fractures

At one time, fluoride therapy was recommended for building denser bones and preventing fractures associated with osteoporosis. Now several articles in peer-reviewed journals suggest that fluoride actually causes more harm than good, as it is associated with bone breakage. Three studies reported in The Journal of the American Medical Association showed links between hip fractures and fluoride. [57][58][59] Findings here were, for instance, that there is "a small but significant increase in the risk of hip fractures in both men and women exposed to artificial fluoridation at 1 ppm." In addition, the New England Journal of Medicine reports that people given fluoride to cure their osteoporosis actually wound up with an increased nonvertebral fracture rate. [60] Austrian researchers have also found that fluoride tablets make bones more susceptible to fractures.[61] The U.S. National Research Council states that the U.S. hip fracture rate is now the highest in the world. [62]

Louis V. Avioli, professor at the Washington University School of Medicine, says in a 1987 review of the subject: "Sodium fluoride therapy is 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." [63]

Fluoride Poisoning

In May 1992, 260 people were poisoned, and one man died, in Hooper Bay, Alaska, after drinking water contaminated with 150 ppm of fluoride. The accident was attributed to poor equipment and an unqualified operator. [55] Was this a fluke? Not at all. Over the years, the CDC has recorded several incidents of excessive fluoride permeating the water supply and sickening or killing people. We don't usually hear about these occurrences in news reports, but interested citizens have learned the truth from data obtained under the Freedom of Information Act. Here is a partial list of toxic spills we have not been told about:

July 1993 – Chicago, Illinois: Three dialysis patients died and five experienced toxic reactions to the fluoridated water used in the treatment process. The CDC was asked to investigate, but to date there have been no press releases.

May 1993 – Kodiak, Alaska (Old Harbor): The population was warned not to consume water due to high fluoride levels. They were also cautioned against boiling the water, since this concentrates the substance and worsens the danger. Although equipment appeared to be functioning normally, 22-24 ppm of fluoride was found in a sample.

July 1992 – Marin County, California: A pump malfunction allowed too much fluoride into the Bon Tempe treatment plant. Two million gallons of fluoridated water were diverted to Phoenix Lake, elevating the lake surface by more than two inches and forcing some water over the spillway.

December 1991 – Benton Harbor, Michigan: A faulty pump allowed approximately 900 gallons of hydrofluosilicic acid to leak into a chemical storage building at the water plant. City engineer Roland Klockow stated, "The concentrated hydrofluosilicic acid was so corrosive that it ate through more than two inches of concrete in the storage building." This water did not reach water consumers, but fluoridation was stopped until June 1993. The original equipment was only two years old.

July 1991 – Porgate, Michigan: After a fluoride injector pump failed, fluoride levels reached 92 ppm and resulted in approximately 40 children developing abdominal pains, sickness, vomiting, and diarrhea at a school arts and crafts show.

November 1979 – Annapolis, Maryland: One patient died and eight became ill after renal dialysis treatment. Symptoms included cardiac arrest (resuscitated), hypotension, chest pain, difficulty breathing, and a whole gamut of intestinal problems. Patients not on dialysis also reported nausea, headaches, cramps, diarrhea, and dizziness. The fluoride level was later found to be 35 ppm; the problem was traced to a valve at a water plant that had been left open all night. [64]

Instead of addressing fluoridation's problematic safety record, officials have chosen to cover it up. For example, the ADA says in one booklet distributed to health agencies that "Fluoride feeders are designed to stop operating when a malfunction occurs… so

prolonged over-fluoridation becomes a mechanical impossibility." In addition, the information that does reach the population after an accident is woefully inaccurate. A spill in Annapolis, Maryland, placed thousands at risk, but official reports reduced the number to eight. [65] Perhaps officials are afraid they will invite more lawsuits like the one for $480 million by the wife of a dialysis patient who became brain-injured as the result of fluoride poisoning.

Not all fluoride poisoning is accidental. For decades, industry has knowingly released massive quantities of fluoride into the air and water. Disenfranchised communities, with people least able to fight back, are often the victims. Medical writer Joel Griffiths relays this description of what industrial pollution can do, in this case to a devastatingly poisoned Indian reservation:

"Cows crawled around the pasture on their bellies, inching along like giant snails. So crippled by bone disease they could not stand up, this was the only way they could graze. Some died kneeling, after giving birth to stunted calves. Others kept on crawling until, no longer able to chew because their teeth had crumbled down to the nerves, they began to starve…."

They were the cattle of the Mohawk Indians on the New York-Canadian St. Regis Reservation during the period 1960-1975, when industrial pollution devastated the herd – and along with it, the Mohawks' way of life….Mohawk children, too, have shown signs of damage to bones and teeth." [66]

Mohawks filed suit against the Reynolds Metals Company and the Aluminum Company of America (Alcoa) in 1960, but ended up settling out of court, where they received $650,000 for their cows. [67]

Fluoride is one of industry's major pollutants, and no one remains immune to its effects. In 1989, 155,000 tons were being released annually into the air, and 500,000 tons a year were disposed of in our lakes, rivers, and oceans. [68]

Cancer

Numerous studies demonstrate links between fluoridation and cancer; however, agencies promoting fluoride consistently refute or cover up these findings.

In 1977, Dr. John Yiamouyiannis and Dr. Dean Burk, former chief chemist at the National Cancer Institute, released a study that linked fluoridation to 10,000 cancer deaths per year in the U.S. Their inquiry, which compared cancer deaths in the ten largest fluoridated American cities to those in the ten largest unfluoridated cities between 1940 and 1950, discovered a 5% greater rate in the fluoridated areas. [69] The NCI disputed these findings, since an earlier analysis of theirs apparently failed to pick up these extra deaths. Federal authorities claimed that Yiamouyiannis and Burk were in error, and that any increase was caused by statistical changes over the years in age, gender, and racial composition. [70]

In order to settle the question of whether or not fluoride is a carcinogen, a Congressional subcommittee instructed the National Toxicology Program (NTP) to perform another investigation. [71] That study, due in 1980, was not released until 1990. However, in 1986, while the study was delayed, the EPA raised the standard fluoride level in drinking water from 2.4 to 4 ppm. [72] After this step, some of the government's own employees in NFFE Local 2050 took what the Oakland Tribune termed the "remarkable step of denouncing that action as political." [73]

When the NTP study results became known in early 1990, union president Dr. Robert Carton, who works in the EPA's Toxic Substances Division, published a statement. It read, in part: "Four years ago, NFFE Local 2050, which represents all 1100 professionals at EPA headquarters, alerted then Administrator Lee Thomas to the fact that the scientific support documents for the fluoride in drinking water standard 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.

"EPA raised the allowed level of fluoride before the results of the rat/mouse study ordered by Congress in 1977 was complete. Today, we find out how irresponsible that decision was. The results reported by NTP, and explained today by Dr. Yiamouyiannis, are, as he notes, not surprising considering the vast amount of data that caused the animal study to be conducted in the first place. The results are not surprising to NFFE Local 2050 either. 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 document thrown together by the EPA contractor.

"It was apparent to us that EPA 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 EPA 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 EPA in this affair raises questions about the integrity of science at EPA and the role of professional scientists, lawyers and engineers who provide the interpretation of the available data and the judgements necessary to protect the public health and the environment. Are scientists at EPA there to arrange facts to fit preconceived conclusions? Does the Agency have a responsibility to develop world-class experts in the risks posed by chemicals we are exposed to every day, or is it permissible for EPA to cynically shop around for contractors who will provide them the 'correct' answers?" [74]

What were the NTP study results? Out of 130 male rats that ingested 45 to 79 ppm of fluoride, 5 developed osteosarcoma, a rare bone cancer. There were cases, in both males and females at those doses, of squamous cell carcinoma in the mouth. [75] Both rats and mice had dose-related fluorosis of the teeth, and female rats suffered osteosclerosis of the long bones.[76]

When Yiamouyiannis analyzed the same data, he found mice with a particularly rare form of liver cancer, known as hepatocholangiocarcinoma. This cancer is so rare, according to Yiamouyiannis, that the odds of its appearance in this study by chance are 1 in 2 million in male mice and l in 100,000 in female mice. He also found precancerous changes in oral squamous cells, an increase in squamous cell tumors and cancers, and thyroid follicular cell tumors as a result of increasing levels of fluoride in drinking water. [77]

A March 13, 1990, New York Times article commented on the NTP findings: "Previous animal tests suggesting that water fluoridation might pose risks to humans have been widely discounted as technically flawed, but the latest investigation carefully weeded out sources of experimental or statistical error, many scientists say, and cannot be discounted." [78] In the same article, biologist Dr. Edward Groth notes: "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 taken seriously." [71]

On February 22, 1990, the Medical Tribune, an international medical news weekly received by 125,000 doctors, offered the opinion of a federal scientist who preferred to remain anonymous:

"It is difficult to see how EPA can fail to regulate fluoride as a carcinogen in light of what NTP has found. Osteosarcomas are an extremely unusual result in rat carcinogenicity tests. Toxicologists tell me that the only other substance that has produced this is radium….The fact that this is a highly atypical form of cancer implicates fluoride as the cause. Also, the osteosarcomas appeared to be dose-related, and did not occur in controls, making it a clean study." [79]

Public health officials were quick to assure a concerned public that there was nothing to worry about! The ADA said the occurrence of cancers in the lab may not be relevant to humans since the level of fluoridation in the experimental animals' water was so high. [80] But the Federal Register, which is the handbook of government practices, disagrees:

"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 this test would be to disavow those of all such tests, since they are all conducted according to this standard." [73]

As a February 5, 1990, Newsweek article pointed out, "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 the humans exposed to the substance." [81] And as the Safer Water Foundation explains, higher doses are generally 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. [82]

Several other studies link fluoride to genetic damage and cancer. An article in Mutation Research says that a study by Proctor and Gamble, the very company that makes Crest toothpaste, did research showing that 1 ppm fluoride causes genetic damage.[83] Results were never published but Proctor and Gamble called them "clean," meaning animals were supposedly free of malignant tumors. Not so, according to scientists who believe some of the changes observed in test animals could be interpreted as precancerous. [84] Yiamouyiannis says the Public Health Service sat on the data, which were finally released via a Freedom of Information Act request in 1989. "Since they are biased, they have tried to cover up harmful effects," he says. "But the data speaks for itself. Half the amount of fluoride that is found in the New York City drinking water causes genetic damage." [46]

A National Institutes of Environmental Health Sciences publication, Environmental and Molecular Mutagenesis, also linked fluoride to genetic toxicity when it stated that "in cultured human and rodent cells, the weight of evidence leads to the conclusion that fluoride exposure results in increased chromosome aberrations." [85] The result of this is not only birth defects but the mutation of normal cells into cancer cells. The Journal of Carcinogenesis further states that "fluoride not only has the ability to transform normal cells into cancer cells but also to enhance the cancer-causing properties of other chemicals." [86]

Surprisingly, the PHS put out a report called Review of fluoride: benefits and risks, in which they showed a substantially higher incidence of bone cancer in young men exposed to fluoridated water compared to those who were not. The New Jersey Department of Health also found that the risk of bone cancer was about three times as high in fluoridated areas as in nonfluoridated areas. [87]

Despite cover-up attempts, the light of knowledge is filtering through to some enlightened scientists. Regarding animal test results, the director of the U.S. National Institute of Environmental Health Sciences, James Huff, does say that "the reason these animals got a few osteosarcomas was because they were given fluoride…Bone is the target organ for fluoride." Toxicologist William Marcus adds that "fluoride is a carcinogen by any standard we use. I believe EPA should act immediately to protect the public, not just on the cancer data, but on the evidence of bone fractures, arthritis, mutagenicity, and other effects." [88]

The Challenge of Eliminating Fluoride

Given all the scientific challenges to the idea of the safety of fluoride, why does it remain a protected contaminant? As Susan Pare of the Center for Health Action asks, "…even if fluoride in the water did reduce tooth decay, which it does not, how can the EPA allow a substance more toxic than Alar, red dye #3, and vinyl chloride to be injected purposely into drinking water?" [89]

This is certainly a logical question and, with all the good science that seems to exist on the subject, you would think that there would be a great deal of interest in getting

fluoride out of our water supply. Unfortunately, that hasn't been the case. As Dr. William Marcus, a senior science advisor in the EPA's Office of Drinking Water, has found, the top governmental priority has been to sweep the facts under the rug and, if need be, to suppress truth-tellers. Marcus explains [90] that fluoride is one of the chemicals the EPA specifically regulates, and that he was following the data coming in on fluoride very carefully when a determination was going to be made on whether the levels should be changed. He discovered that the data were not being heeded. But that was only the beginning of the story for him. Marcus recounts what happened:

"The studies that were done by Botel Northwest showed that there was an increased level of bone cancer and other types of cancer in animals….in that same study, there were very rare liver cancers, according to the board-certified veterinary pathologists at the contractor, Botel. Those really were very upsetting because they were hepatocholangeal carcinomas, very rare liver cancers….Then there were several other kinds of cancers that were found in the jaw and other places.

"I felt at that time that the reports were alarming. They showed that the levels of fluoride that can cause cancers in animals are actually lower than those levels ingested in people (who take lower amounts but for longer periods of time).

"I went to a meeting that was held in Research Triangle Park, in April 1990, in which the National Toxicology Program was presenting their review of the study. I went with several colleagues of mine, one of whom was a board-certified veterinary pathologist who originally reported hepatocholangeal carcinoma as a separate entity in rats and mice. I asked him if he would look at the slides to see if that really was a tumor or if the pathologists at Botel had made an error. He told me after looking at the slides that, in fact, it was correct.

"At the meeting, every one of the cancers reported by the contractor had been downgraded by the National Toxicology Program. I have been in the toxicology business looking at studies of this nature for nearly 25 years and I have never before seen every single cancer endpoint downgraded…. I found that very suspicious and went to see an investigator in the Congress at the suggestion of my friend, Bob Carton. This gentleman and his staff investigated very thoroughly and found out that the scientists at the National Toxicology Program down at Research Triangle Park had been coerced by their superiors to change their findings."[91]

Once Dr. Marcus acted on his findings, something ominous started to happen in his life: "…I wrote an internal memorandum and gave it to my supervisors. I waited for a month without hearing anything. Usually, you get a feedback in a week or so. I wrote another memorandum to a person who was my second-line supervisor explaining that if there was even a slight chance of increased cancer in the general population, since 140 million people were potentially ingesting this material, that the deaths could be in the many thousands. Then I gave a copy of the memorandum to the Fluoride Work Group, who waited some time and then released it to the press.

“Once it got into the press all sorts of things started happening at EPA. I was getting disciplinary threats, being isolated, and all kinds of things which ultimately resulted in them firing me on March 15, 1992.”

In order to be reinstated at work, Dr. Marcus took his case to court. In the process, he learned that the government had engaged in various illegal activities, including 70 felony counts, in order to get him fired. At the same time, those who committed perjury were not held accountable for it. In fact, they were rewarded for their efforts:

“When we finally got the EPA to the courtroom…they admitted to doing several things to get me fired. We had notes of a meeting…that showed that fluoride was one of the main topics discussed and that it was agreed that they would fire me with the help of the Inspector General. When we got them on the stand and showed them the memoranda, they finally remembered and said, oh yes, we lied about that in our previous statements.

“Then…they admitted to shredding more than 70 documents that they had in hand – Freedom of Information requests. That’s a felony…. In addition, they charged me with stealing time from the government. They…tried to show…that I had been doing private work on government time and getting paid for it. When we came to court, I was able to show that the time cards they produced were forged, and forged by the Inspector General’s staff….”

For all his efforts, Dr. Marcus was rehired, but nothing else has changed: “The EPA was ordered to rehire me, which they did. They were given a whole series of requirements to be met, such as paying me my back pay, restoring my leave, privileges, and sick leave and annual leave. The only thing they’ve done is put me back to work. They haven’t given me any of those things that they were required to do.”[92]

What is at the core of such ruthless tactics? John Yiamouyiannis feels that the central concern of government is to protect industry, and that the motivating force behind fluoride use is the need of certain businesses to dump their toxic waste products somewhere. They try to be inconspicuous in the disposal process and not make waves. “As is normal, the solution to pollution is dilution. You poison everyone a little bit rather than poison a few people a lot. This way, people don’t know what’s going on.”

Since the Public Health Service has promoted the fluoride myth for over 50 years, they’re concerned about protecting their reputation. So scientists like Dr. Marcus, who know about the dangers, are intimidated into keeping silent. Otherwise, they jeopardize their careers. Dr. John Lee elaborates:

“Back in 1943, the PHS staked their professional careers on the benefits and safety of fluoride. It has since become bureaucratized. Any public health official who criticizes fluoride, or even hints that perhaps it was an unwise decision, is at risk of losing his career entirely. This has happened time and time again. Public health officials such as Dr. Gray in British Columbia and Dr. Colquhoun in New Zealand found no benefit from fluoridation. When they reported these results, they immediately lost their careers….

This is what happens – the public health officials who speak out against fluoride are at great risk of losing their careers on the spot."

Yiamouyiannis adds that for the authorities to admit that they're wrong would be devastating.

"It would show that their reputations really don't mean that much…. They don't have the scientific background. As Ralph Nader once said, if they admit they're wrong on fluoridation, people would ask, and legitimately so, what else have they not told us right?"

Accompanying a loss in status would be a tremendous loss in revenue. Yiamouyiannis points out that "the indiscriminate careless handling of fluoride has a lot of companies, such as Exxon, U.S. Steel, and Alcoa, making tens of billions of dollars in extra profits at our expense…. For them to go ahead now and admit that this is bad, this presents a problem, a threat, would mean tens of billions of dollars in lost profit because they would have to handle fluoride properly. Fluoride is present in everything from phosphate fertilizers to cracking agents for the petroleum industry."

Fluoride could only be legally disposed of at a great cost to industry. As Dr. Bill Marcus explains,

"There are prescribed methods for disposal and they're very expensive. Fluoride is a very potent poison. It's a registered pesticide, used for killing rats or mice…. If it were to be disposed of, it would require a class-one landfill. That would cost the people who are producing aluminum or fertilizer about $7000+ per 5000- to 6000-gallon truckload to dispose of it. It's highly corrosive."

Another problem is that the U.S. judicial system, even when convinced of the dangers, is powerless to change policy. Yiamouyiannis tells of his involvement in court cases in Pennsylvania and Texas in which, while the judges were convinced that fluoride was a health hazard, they did not have the jurisdiction to grant relief from fluoridation. That would have to be done, it was ultimately found, through the legislative process. Interestingly, the judiciary seems to have more power to effect change in other countries. Yiamouyiannis states that when he presented the same technical evidence in Scotland, the Scottish court outlawed fluoridation based on the evidence.

Indeed, most of Western Europe has rejected fluoridation on the grounds that it is unsafe. In 1971, after 11 years of testing, Sweden's Nobel Medical Institute recommended against fluoridation, and the process was banned.[93] The Netherlands outlawed the practice in 1976, after 23 years of tests. France decided against it after consulting with its Pasteur Institute[64] and West Germany, now Germany, rejected the practice because the recommended dosage of 1 ppm was "too close to the dose at which long-term damage to the human body is to be expected." [84]Dr. Lee sums it up:

“All of western Europe, except one or two test towns in Spain, has abandoned fluoride as a public health plan. It is not put in the water anywhere. They all established test cities and found that the benefits did not occur and the toxicity was evident.”[94]

Isn’t it time the United States followed Western Europe’s example? While the answer is obvious, it is also apparent that government policy is unlikely to change without public support. We therefore must communicate with legislators, and insist on one of our most precious resources – pure, unadulterated drinking water. Yiamouyiannis urges all American people to do so, pointing out that public pressure has gotten fluoride out of the water in places like Los Angeles; Newark and Jersey City in New Jersey; and [95]Bedford, Massachusetts. [46] He emphasizes the immediacy of the problem:

“There is no question with regard to fluoridation of public water supplies. It is absolutely unsafe…and should be stopped immediately. This is causing more destruction to human health than any other single substance added purposely or inadvertently to the water supply. We’re talking about 35,000 excess deaths a year…10,000 cancer deaths a year…130 million people who are being chronically poisoned. We’re not talking about dropping dead after drinking a glass of fluoridated water…. It takes its toll on human health and life, glass after glass.” [96]

There is also a moral issue in the debate that has largely escaped notice. According to columnist James Kilpatrick, it is “the right of each person to control the drugs he or she takes.” Kilpatrick calls fluoridation compulsory mass medication, a procedure that violates the principles of medical ethics. [97] A New York Times editorial agrees:

“In light of the uncertainty, critics [of fluoridation] argue that administrative bodies are unjustified in imposing fluoridation on communities without obtaining public consent…. 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.” [98]