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| Our Dec 2010 cover | **From the Townsend Letter**[**January 2011**](http://www.townsendletter.com/Jan2011/Jan2011.html)**Fluoridation: Medicating our Water Part 3**by Gary Null, PhD[**Part 1**](http://www.townsendletter.com/Nov2010/fluoride1110.html)**and**[**Part 2**](http://www.townsendletter.com/Dec2010/fluoride1210.html)**are also online** |

**Fluoride and Lead**

Fluoride (and its various compounds) is toxic all by itself, but its interaction with other toxic metals is of increasing concern. Research published in the December 2000 issue of the journal Neurotoxicology warns that public drinking water treated with sodium silicofluoride or fluosilicic acid, known as silicofluorides (SiFs), is linked to higher uptake of lead in children.168 Less than 10% of fluoridation systems in the US use sodium fluoride, the substance first used to fluoridate public drinking water in 1945. SiFs are now used to treat drinking water for 140 million Americans. Yet the safety of SiFs has never been tested, nor have they been approved by the FDA.

The research was conducted by a team led by Roger D. Masters, Dartmouth College research professor; Nelson A. Rockefeller, professor emeritus of government; and Myron J. Coplan, a consulting chemical engineer, formerly vice president of Albany International Corporation. The team has now studied the blood lead levels in over 400,000 children in three different samples. In each case, they found a significant link between SiF-treated water and elevated blood lead levels. The researchers found that the greatest likelihood of children having elevated blood lead levels occurs when they are exposed both to known risk factors, such as old house paint and lead in soil or water, and to SiF-treated drinking water.169

"Our research needs further laboratory testing," said Masters. "This should have the highest priority because our preliminary findings show correlations between SiF use and more behavior problems due to known effects of lead on brain chemistry." Also requiring further examination is German research that shows SiFs inhibit cholinesterase, an enzyme that plays an important role in regulating neurotransmitters.170

"If SiFs are cholinesterase inhibitors, this means that SiFs have effects like the chemical agents linked to Gulf War Syndrome, chronic fatigue syndrome and other puzzling conditions that plague millions of Americans," said Masters. "We need a better understanding of how SiFs behave chemically and physiologically."171

"We should stop using silicofluorides in our public water supply until we know what they do," says Masters.172

**Fluoride and Aluminum**

Lead isn't the only metal that interacts with fluoride in a toxic combination. Aluminum is another. In 1976, Dr. D. Allman and coworkers from Indiana University School of Medicine fed animals 1 ppm fluoride and found that in the presence of aluminum, in a concentration as small as 20 parts per billion, fluoride is able to cause an even larger increase in cyclic AMP levels. Cyclic AMP inhibits the migration rate of white blood cells, as well as the ability of the white blood cell to destroy pathogenic (disease-causing) organisms. The packaging of fluoride toothpastes and school-based mouth rinses in aluminum accentuates the effect on the body.173

Research conducted by Mullenix and colleagues in 1995 indicated that rats treated with low doses of fluoride cause sex- and dose-specific behavioral aberrations with a common pattern.174 Prenatal rats exposed became hyperactive, while those exposed postnatally became hypoactive. This effect was confirmed by a 2001 study in which administration of sodium fluoride with drinking water produced both behavioral and dental toxicities. Suppressed spontaneous motor activity, shortened treadmill endurance time, decreased weight gain and food intake, suppressed total cholinesterase and acetyl cholinesterase activities, and dental lesions were observed in test animals. Serum fluoride concentration rose markedly and calcium concentration decreased in the animals.175

A 1998 study by Julie A. Varner and colleagues at the Psychology Department of Binghamton University (New York) shows that neurotoxic effects like these are enhanced by the synergetic action of fluoride and aluminum.176 Varner describes "alterations in the nervous system resulting from chronic administration of the fluoroaluminum complex (AlF3) or equivalent levels of fluoride (F) in the form of sodium-fluoride (NaF)." The rats were given fluoride in drinking water at the same level deemed "optimal" by profluoridation groups, namely 1 ppm. Most pronounced damage was seen in animals that got the fluoride in conjunction with aluminum. The pathological changes found in the brain tissue of the animals were similar to the alterations found in the brains of people with Alzheimer's disease and dementia. The authors speculate that fluoride enables aluminum to cross the blood–brain barrier. These results are especially disturbing because of the low dose level of fluoride that shows the toxic effect in rats – rats are more resistant to fluoride than humans.177

Another study done in Czechoslovakia adds force to the idea that aluminum may act synergistically with fluoride to trigger the mechanisms of Alzheimer's disease (AD). The study shows that some of pathologic changes associated with AD are not induced by aluminum alone, but by the aluminofluoride complexes. These complexes may act as the initial signal stimulating impairment of homeostasis, degeneration, and death of the cells. By influencing energy metabolism, these complexes can accelerate the aging and impair the functions of the nervous system. "In respect to the etiology of AD, the long term action of aluminofluoride complexes may represent a serious and powerful risk factor for the development of AD," the authors conclude.178

Those who are under the belief that fluoride would rarely interact with aluminum have been misled. Fluoride is, in fact, a direct byproduct of aluminum production. Aluminum is often added to drinking water as a flocculating agent, by the same local water authorities who oversee the fluoridation of water. Aluminum and fluoride form a number of complexes, the most deadly of these being aluminum tetrafluoride.179 Czech researchers have shown that the body reacts to aluminum tetra fluoride as if it were a phosphate ion capable of triggering G proteins. G-proteins are water-soluble substances (i.e., hormones, neurotransmitters, and growth factors) that transmit messages from the outside to the inside of a cell.180 Aluminum tetrafluoride can switch on G proteins without hormones, neurotransmitters, or growth factors present.181 This, notes Connett, "is the most worrisome aspect of fluoride subtle biochemistry."182

**Fluoride and the Pineal Gland**

Another concern is fluoride's effect on the pineal gland, a small but powerful structure located between the right and left hemispheres of the brain. The pineal gland secretes melatonin, a hormone that affects such functions as sleep cycles, jet lag, hibernation in animals, immunity, and the onset of puberty. Jennifer Luke, PhD, found that the pineal gland attracts fluoride and thereby interferes with melatonin's functions.183 In autopsy studies, she discovered extremely high concentrations of fluoride in the gland, averaging 9000 ppm, and going up to 21,000 ppm in some cases.184 And in an accompanying study of fluoride-treated Mongolian gerbils (the animal considered most favorable for studying effects on the pineal gland), Luke found lower levels of melatonin and earlier onset of puberty.

This research is highly suggestive. People with insomnia could be suffering as a result of fluoride's interference with melatonin production. Currently, more than half the population of the US suffers from some form of sleep disturbance.185 Sleep deprivation promotes reduced immunity. Sleep-challenged people are more likely to suffer depression, stroke, or heart disease than their well-rested peers. Numerous studies have correlated insufficient melatonin production with an earlier-than-usual onset of puberty.186-187

This recalls the 1955 Newburgh-Kingston study, which produced some extremely puzzling results that scientists have yet to explain. One was the finding that girls in fluoridated Newberg were reaching menstruation five months earlier on average than the girls in unfluoridated Kingston. This raises the question; does fluoride contribute to the alarming rates of early puberty that we are seeing?188 Premature menstruation is associated with a variety of ills, including breast cancer and obesity. A 2001 study published in the American Journal of Public Health reveals that early maturation nearly doubled the odds of being obese.189

**Reproductive Effects**

Fluoride has long been known to undermine fertility in animals and man.190 In 1951 commercial chinchilla breeder named W. R. Cox reported reproductive anomalies in commercially raised chinchillas given a high-fluoride feed.191 When Cox changed to a low-fluoride feed, "there were increases in the number of offspring born; the number of litters, and the numbers born alive. The adult mortality rate decreased from 14.6% in 1951 to 3.3% in 1952. A number of abnormalities associated with fluoride-contaminated feed were passed on through multiple generations."192

Cox, a layman, studied the scientific literature, and found more than 1400 studies indicating fluoride's adverse effect on animals, especially soft-tissue damage. Cox was surprised to find that the scientists advocating public water fluoridation at the time showed no interest in these studies or their possible implications for human health.193

S. C. Freni of the National Center for Toxicological Research participated in a 1991 US Pubich Health Service (USPHS) review of the toxicity of fluoride. Searching for studies that correlated fluoride exposure with reproductive effects in humans, he discovered that in almost 50 years of fluoridation, no one had ever study fluoride's effect on the human fetus.194

Freni's 1994 review of fluoride toxicity showed decreased fertility in most animal species studied. Freni then investigated whether fluoride would also affect human birth rates. He studied counties in which the water had a fluoride content of more than 3 ppm. Most regions he studied showed an association of decreasing total fertility rates (TFR) with increasing fluoride levels. There was no evidence that this outcome resulted from selection bias, inaccurate data, or improper analytical methods.195 Freni speculated that fluoride might lower protein synthesis in osteoblasts or that it inhibits the adenylyl cyclase system in human spermatozoa.196

In a 1994 study of mature rats treated with sodium fluoride, Narayana and Chinoy found that fluoride interfered with androgenesis and damage the testes by inhibiting the action of testosterone.197 Another study by the same team studied human spermatozoa treated with 25, 50, and 250 mm of fluoride for 5, 10, and 20 minutes. Silver nitrate staining of fluoride-treated sperm revealed elongated heads, deflagellation, and loss of the acrosome together with coiling of the tail. Sperm glutathione levels also showed a time-dependent decrease with complete depletion after 20 minutes, indicating rapid glutathione oxidation in detoxification of the sodium-fluoride. The altered lysosomal enzyme activity

and glutathione levels together with morphologic anomalies resulted in a significant decline in sperm motility with an effective dose of 250 mm.198

**Fluoride and Intelligence**

Several other studies link fluoride exposure to adverse effects on intelligence.

As far back as April 1944, as part of the secret Manhattan Project, a memo circulated stating: "Clinical evidence suggests that C616 [uranium hydrofluoride] may have a rather marked central nervous system effect with mental confusion, drowsiness and lassitude."199 Through the following decades, numerous scientific studies determined the same thing: fluorosis affects the nervous system and membrane lipids.

One investigation conducted in China measured the intelligence of children aged 8 to 13 with no, slight, medium, and serious fluorosis. It demonstrated a 15- to 19-point decrease in IQ among children in the fluorosis area as compared with the nonfluorosis area.200 Another study of children's intelligence and the metabolism of iodine and fluorine, also in China, revealed that exposure to high levels of fluoride produced increased prevalence of thyroid enlargement (29.8%) and dental fluorosis (72.9%), and a slightly lower average IQ as compared with control areas. The IQ differential was more pronounced (16.8%) when lower-intelligence children were studied separately.201 Connett cites a recent review by the Greater Boston Physicians for Social Responsibility which found that fluoride interferes with brain function in young animals and children.202

**Enzyme Toxicity and Genetic Damage**

Fluoride is a potent enzyme poison. Enzymes are special types of proteins, known as catalysts, which trigger thousands of chemical reactions in the body. Enzymes are vital to our very existence, writes Dr. Anthony Cichoke: "During every moment of our lives, enzymes keep us going. At this very instant, millions of tiny enzymes are working throughout your body causing reactions to take place. You couldn't breathe, hold or turn the pages of this book, read its words, eat a meal, taste the food, or hear a telephone ring without enzymes. Even minute doses of 1 ppm of fluoride could prevent essential biological reactions from taking place."203

While the mechanisms of enzyme destruction were not well understood in the 1940s and 1950s, scientists now believe that it could be due to fluoride's interference with magnesium, a vital cofactor needed by many enzymes to perform catalytic functions. Another reason could be fluoride's ability to form strong bonds with hydrogen. Hydrogen, a strongly positive element, binds easily with the strong negatively charged fluoride. Connett explains: "Hydrogen bonding is at the very heart and soul of biochemistry. Protein structure and function revolve around hydrogen bonds. Hydrogen gives shape, and that shape can be easily manipulated with little energy. Enzymes usually catalyze around hydrogen bonds. In addition, the two strands of DNA are held together with hydrogen bonds. So, you're striking at the very heart of biology. It's a huge red flag to be extremely careful about introducing fluoride to any living system."204

While critics argue that only high doses cause such effects, studies suggest that even a supposedly "safe" concentration of 1 ppm of fluoride added to drinking water can interfere with critical biological functions. This was demonstrated in 1977 at Austria's Siebersdorf Research Center by Dr. W. Klein and colleagues, who found that even this low dose inhibited DNA repair enzyme activity by 50% and caused genetic and chromosome damage.205 A similar study conducted at the University of Missouri confirmed these results.206 Scientists at Poland's Pomeranian Medical Academy found that as little as 0.6 ppm of fluoride produced chromosomal damage to human white blood cells.207 And most recently, in January 2008, after three years of investigating hundreds of studies, a National Academies' National Research Council (NRC) expert panel "concluded that fluoride can subtly alter endocrine function, especially in the thyroid – the gland that produces hormones regulation growth and metabolism."208

Sperm cells displayed "a highly significant increase in mutation" after being treated with fluoride at Holland's Leiden University.209 And studies at Germany's Central Laboratory for Mutagenicity Testing and by Yiamouyannis and Burk at Columbia University showed that it also caused genetic damage to eggs in both insects and laboratory animals.210,211

**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?"212

This is certainly a logical question and, with all the significant, solid science that exists 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 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 that fluoride is one of the chemicals that 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.213

Once 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 happ ening at EPA – I was getting disciplinary threats, being isolated, and all kinds of things which ultimately resulted in them firing me on March 15, 1992.214

In order to be reinstated at work, 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.215

For all his efforts, 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."216

What is at the core of such ruthless tactics? Yiamouyiannis believes 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."217 Since the USPHS has promoted the fluoride myth for over 50 years, it's concerned about protecting its reputation. So scientists like Marcus, who know about the dangers, are intimidated into keeping silent. Otherwise, they jeopardize their careers.

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."218

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?"219

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, US 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."220

Fluoride could only be legally disposed of at a great cost to industry. As 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."221

Another problem is that the US 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.222

Dr. William Hirzy, vice president of the union that represents the scientists who work for the EPA, cites three landmark cases in which judges with "no interest except in the finding of fact and administering justice" ruled against fluoridation.223 In November 1978, Judge John Flaherty, now Chief Justice of the Supreme Court of Pennsylvania, issued findings in the case, Aitkenhead v. Borough of West View, tried before him in the Allegheny Court of Common Pleas.

He summarized his findings as follows:

In my view, the evidence is quite convincing that the addition of sodium fluoride to the public water supply at one part per million is extremely deleterious to the human body, and, a review of the evidence will disclose that there was no convincing evidence to the contrary. ... 224

Prior to hearing this case, I gave the matter of fluoridation little, if any, thought, but I received quite an education, and noted that the proponents of fluoridation do nothing more than try to impugn the objectivity of those who oppose fluoridation.225

In an Illinois decision, Judge Ronald Niemann concludes: "This record is barren of any credible and reputable scientific epidemiological studies and or analysis of statistical data which would support the Illinois Legislature's determination that fluoridation of the water supplies is both a safe and effective means of promoting public health."226

Judge Anthony Farris in Texas found: "[That] the artificial fluoridation of public water supplies, such as contemplated by {Houston} City ordinance No. 80-2530 may cause or contribute to the cause of cancer, genetic damage, intolerant reactions, and chronic toxicity, including dental mottling, in man; that the said artificial fluoridation may aggravate malnutrition and existing illness in man; and that the value of said artificial fluoridation is in some doubt as to reduction of tooth decay in man."

Hirzy, himself a toxicologist and an expert in environmental management and risk assessment, comments: "The significance of Judge Flaherty's statement and his and the other two judges' findings of fact is this: proponents of fluoridation are fond of reciting endorsement statements by authorities, such as those by CDC and the ADA, both of which have long-standing commitments that are hard if not impossible to recant, on the safety and efficacy of fluoridation. Now come three truly independent servants of justice, the judges in these three cases, and they find that fluoridation of water supplies is not justified."227

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.228

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. The Netherlands outlawed the practice in 1976, after 23 years of tests. France decided against it after consulting with its Pasteur Institute, and 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." 229,230 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."231

But Europe is not the sole bastion of sanity in the fluoridation arena. Several municipalities in the US have taken an enlightened stance on the issue. In 1997, the Natick (Massachusetts) Fluoridation Study Committee submitted a comprehensive report to the town and the Board of Selectmen, overwhelmingly recommending rejection of fluoridating the town's water. The committee consisted of scientists, academics, and citizens of the Town of Natick. The committee summarized its findings as follows:

Recent studies of the incidence of cavities in children show little to no difference between fluoridated and nonfluoridated communities.

Ten to thirty percent of Natick's children will have very mild to mild dental fluorosis if Natick fluoridates its water (up from probably 6% now). Approximately 1% of Natick's children will have moderate or severe dental fluorosis. Dental fluorosis can cause great concern for the affected family and may result in additional dental bills. It should not be dismissed as a "cosmetic" effect.

Fluoride adversely affects the central nervous system, causing behavioral changes and cognitive deficits. These effects are observed at fluoride doses that some people in the US actually receive.

There is good evidence that fluoride is a developmental neurotoxicant, meaning that fluoride affects the nervous system of the developing fetus at doses that are not toxic to the mother. The developmental neurotoxicity would be manifest as lower IQ and behavioral changes.

Water fluoridation shows a positive correlation with increased hip fracture rates in persons 65 years of age and older, based on two recent epidemiology studies.

Some adults are hypersensitive to even small quantities of fluoride, including that contained in fluoridated water. At least one such person is a Natick resident.

The impact of fluoride on human reproduction at the levels received from environmental exposures is a serious concern. A recent epidemiology study shows a correlation between decreasing annual fertility rate in humans and increasing levels of fluoride in drinking water.

Animal bioassays suggest that fluoride is a carcinogen, especially for tissues such as bone (osteosarcoma) and liver. The potential for carcinogenicity is supported by fluoride's genotoxicity and pharmacokinetic properties. Human epidemiology studies to date are inconclusive, but no appropriate major study has been conducted.

Fluoride inhibits or otherwise alters the actions of a long list of enzymes important to metabolism, growth, and cell regulation.

Sodium fluorosilicate and fluorosilicic acid, the two chemicals Natick intends to use to fluoridate the water supply, have been associated with increased concentrations of lead in tap water and increased blood lead levels in children, based on case reports and a new, as-yet-unpublished study.

If Natick fluoridates its water supply at the proposed level, most children under the age of three will daily receive more fluoride than is recommended for them.

The scientific literature supporting these findings is summarized in the full report which also discusses a variety of non-health-related concerns that have been raised about water fluoridation.

The committee reached the firm conclusion that the risks of overexposure to fluoride far outweigh any current benefit of water fluoridation. Its recommendations:

The Natick Fluoridation Study Committee unanimously and emphatically recommends that the Board of Selectmen take appropriate action to ensure that fluoridation of the town water supply does not take place.232

**Conclusion**

Natick is not an isolated case. The town of Bishopville, South Carolina, recently voted to discontinue fluoridation. Eureka Springs, Arkansas, decided not to begin a proposed fluoridation program. "The citizens of Eureka Springs don't want to be medicated against their will," said Mayor Beau Satori. "They just want fine-tasting water."233 In fact, the Fluoride Action Network list over 100 municipalities in the US and Canada that have rejected or discontinued fluoride since 1990.234

Isn't it time the US as a whole followed this 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. 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.235

Hirzy points to the absurdity of government policy on fluoride. The phosphate fertilizer industry captures hydrofluosilicic acid and uses what would otherwise be an air or water pollutant as a low-cost source of fluoride for water authorities. "If this material comes out of a smoke stack it's an air pollutant; if it goes out the drain pipe into the river it's a water pollutant. But it is magically converted into some sort of beneficial agent when put in a tank wagon and bled into the drinking water. It's a remarkable transformation."236

There is a major moral issue in the fluoridation debate that has largely escaped notice. The first is that, as columnist James Kilpatrick observes, 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.237 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.238

The time to act is now. We have a responsibility to stand up against political influence and corruption, and do what is really best for us, our health, and the planet. The issue is no longer whether there is adequate science to make us question fluoride's safety. There is more than enough scientific evidence to support a total ban on fluoride. But industry and the our legislative bodies that are dominated by special interest groups may never get around to admitting the obvious danger, unless we demand it.

The official stance on the fluoride issue reflects a consistent pattern of denial that begins in the earliest years of the 20th century, with industry's initial support and encouragement for water fluoridation and continues to this day with propaganda campaigns, scientific disinformation, and out and out attacks on those who have attempted to let the truth be known.

We must speak out now, and let our leaders know that we want the truth to come out. If not for us, for future generations to have the choice, the option, the opportunity (after all, are we not a country that rallies behind freedom?) to drink water – the liquid of life – without risking their vitality.

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