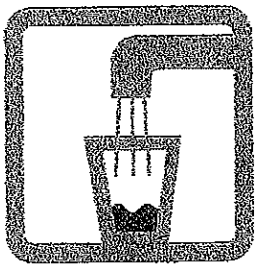
Is One Questionable Benefit of Fluoridation Worth Multiple Risks?

Benefits to Health?

✓ **Prevent Tooth Decay?**



The largest U.S. study (National Institute of Dental Research) found that children drinking fluoridated water averaged only about half a cavity less than those drinking unfluoridated water. (Brunelle and Carlos, 1990)

World Health Organization data showed fluoridated and non-fluoridated nations had essentially the same cavity rates. (1999)

Even the CDC acknowledged that fluoride's "actions are primarily topical for both adults and children." (1999)

The gold standard of scientific review, the Cochrane Collaboration, determined that most studies showing effectiveness were not high quality, outdated, and with over 97% "at a high risk of bias." (2015)

Risks to Health

✓ **Bone Cancer**

✓ **Bone Fractures**

✓ **Brain Damage – lowered IQ**

✓ **Dental Fluorosis**

✓ **Diabetes**

✓ **Endocrine System disruption**

✓ **Kidney Disease**

✓ **Pineal Gland functions**

✓ **Skeletal Fluorosis**

✓ **Thyroid Disease**

Note: Fluoride's effects on every one of the above were cited by the National Academy of Science's 2006 report Fluoride in Drinking Water as either a definite risk to human health or a potential risk for which further research is needed.

See details on reverse ↵

National Research Council 2006 Review: Fluoride in Drinking Water

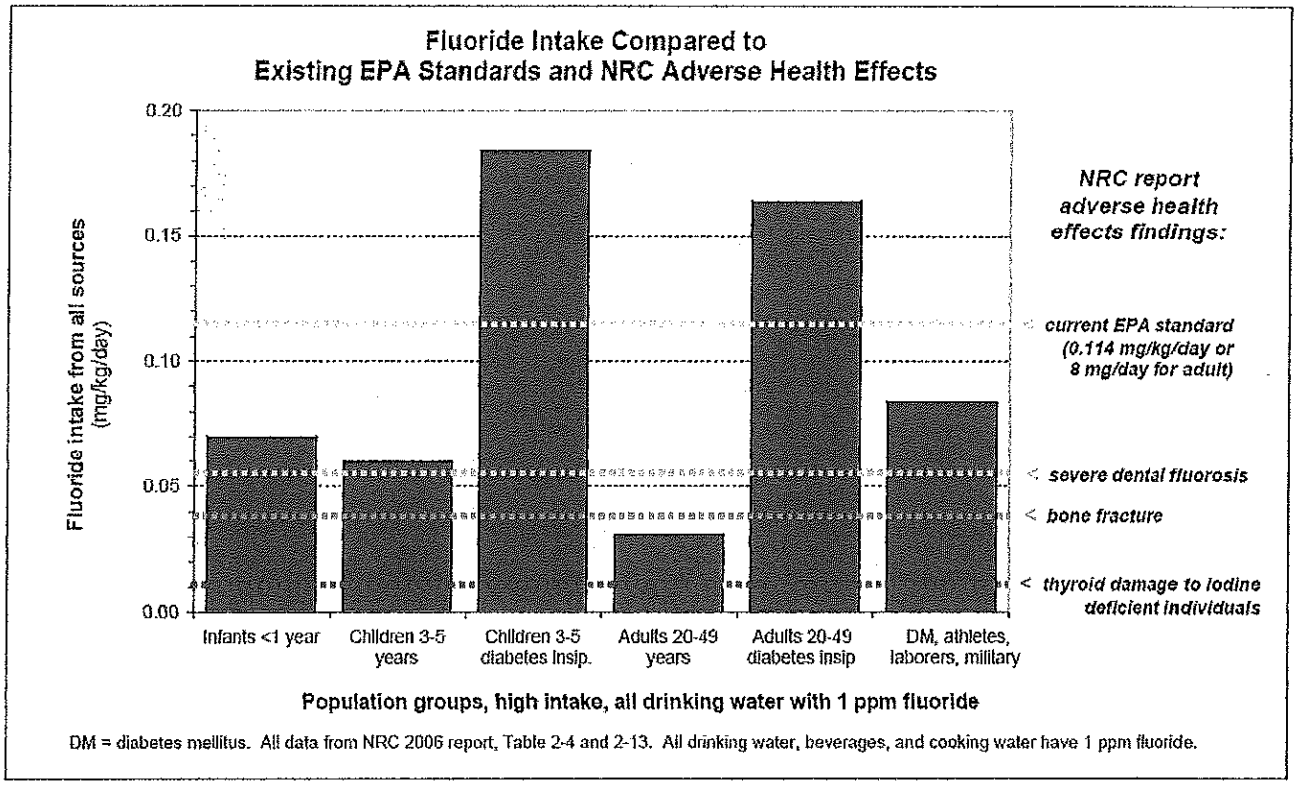


Table by Chris Neurath Director of Scientific Research, Fluoride Action Network, American Environmental Health Studies Project

US EPA commissioned the National Research Council (NRC), a branch of the National Academy of Sciences (NAS) to do this review. The National Academies is the most prestigious, independent scientific body in the US, founded to provide scientific advice to US government agencies. They used a "weight-of-evidence" approach. They did not examine efficacy. They only examined safety. The report was written by 12 experts and peer-reviewed by 14 experts. As well, public meetings were held.

The 12 committee members selected by the NAS reviewed over 1,000 research papers. The panel members selected for their recognized expertise in the fields of toxicology, risk assessment, epidemiology, and experience on fluoride health effects. The panel members spent thousands of hours over three years and received no compensation for their work. One Canadian panel member was chosen - Dr. Hardy Limeback, DDS, PhD, Head of Preventive Dentistry, U of Toronto, who has conducted several decades of primary research in biochemical effects of fluoride.

This is the most thorough review, of the highest quality ever done on this subject. It is a landmark review on the toxicology of fluoride in drinking water. 4 Types of scientific studies available for toxicological assessment: 1) studies on tissues or cells outside of living organisms (in vitro); 2) animal studies; 3) case reports on humans injured or diseased by fluoride; 4) epidemiological studies on humans. Randomized Controlled Trials of the harmful effects of fluoride do not exist. It is unethical to purposely expose humans to any medical treatment with the goal of determining the doses that produce harm.

Skin Contact:	Corrosive! Burns (chemical) can occur if not promptly removed. Concentrated solutions may cause pain and deep and severe burns to the skin. Prolonged and repeated exposure to dilute solutions often causes irritation, redness, pain and drying and cracking of the skin. Prolonged and repeated contact may lead to dermatitis. Toxic effects may be delayed.
Skin Absorption:	Corrosive! Skin absorption is a secondary concern to the continual destruction of tissue while the product is in contact with the skin. Burns (chemical) can occur if not promptly removed.
Eye Contact:	Extremely corrosive! This product causes corneal scarring and clouding. Glaucoma, cataracts and permanent blindness may occur.
Ingestion:	Corrosive! This product causes severe burning and pain in the mouth, throat and abdomen. Vomiting, diarrhea and perforation of the esophagus and stomach lining may occur.
Other Health Effects:	Corrosive effects on the skin and eyes may be delayed, and damage may occur without the sensation or onset of pain. Strict adherence to first aid measures following any exposure is essential. May cause ulcers of the upper respiratory tract, chemical pneumonitis, pulmonary oedema, fluorosis, exostoses, hypocalcemia, shock, central nervous system (CNS) depression, coma and death. Pulmonary oedema is the build-up of fluid in the lungs that might be fatal. Symptoms of pulmonary oedema, such as shortness of breath, may not appear until several hours after exposure and are aggravated by physical exertion. (4) CNS depression is characterized by headache, dizziness, drowsiness, nausea, vomiting and incoordination. Severe overexposures may lead to coma and possible death due to respiratory failure. Fluoride is a bone seeker, and excessive amounts will produce weakening and degeneration of the bone structure. Chronic exposure may cause excess accumulation of fluorine (fluorosis) in the teeth and bones. Severe fluorosis in children weakens tooth enamel resulting in surface pitting. After prolonged high intake in adults bony changes occur characterized by hardening or abnormal density of bone (osteosclerosis), benign bony growths projecting outward from the surface of the bone (exostoses) and calcification of ligaments, tendons, and muscle attachments to bone. Ingestion and skin contact may cause an abnormal reduction of blood calcium (hypocalcemia) and kidney damage since fluorides precipitate calcium stored in the body. There may also be heart, asthma, nerve, intestinal and rheumatism problems. (1,3,4)

4. FIRST AID MEASURES

FIRST AID PROCEDURES

General Guidelines:	Prompt removal of the material and obtaining medical attention are essential for all contact. Remove all contaminated clothing and immediately wash the exposed areas with copious amounts of water. Continue the flushing during transportation to the emergency department. Corrosive effects may be delayed (up to 72 hours), and damage may occur without the sensation or onset of pain. Contact local poison control centre for further guidance.
Inhalation:	Move victim to fresh air. Give artificial respiration ONLY if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing AND no pulse. Oxygen administration may be beneficial in this situation but should only be administered by personnel trained in its use. Obtain medical attention IMMEDIATELY.
Skin Contact:	Prompt removal of the material from the skin is essential. Remove all contaminated clothing and immediately wash the exposed areas with copious amounts of water for a minimum of 30 minutes or up to 60 minutes for critical body areas. Obtain medical attention IMMEDIATELY.
Eye Contact:	Immediately flush eyes with running water for a minimum of 30 minutes, preferably up to 60 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.
Ingestion:	Do not attempt to give anything by mouth to an unconscious person. IMMEDIATELY contact local Poison Control Centre. If victim is alert and not convulsing, rinse mouth out and give 1 to 2 glasses of milk. Water may be used if milk is not available but it is not as effective. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more milk or water. IMMEDIATELY transport victim to an emergency facility. Do not attempt to neutralize the acid with weak bases since the exothermic reaction may extend the corrosive injury. Do not use buffering agents (e.g., antacids) they produce significant exothermic reactions without significantly altering the pH. Since reexposure of the mucosa to acid is harmful, be careful to avoid further vomiting and limit fluid to one to two glasses for an adult. (3)

Sprovieri, John Councillor

From: Sprovieri, John Councillor
Sent: 2017/09/05 8:22 AM
To: 'O'Connor, Patrick'; 'kathryn.lockyer@peelregion.ca'
Cc: Sprovieri, John Councillor
Subject: FW: Health Canada on cumulative effects of fluoride
Attachments: Guidelines for Canadian Drinking Water Quality summary table 2014.pdf

Hi Patrick,
F.Y.I. As you can see even Health Canada recognizes that the accumulation of Fluoride will cause health problems. As you may be aware, there seems to be an epidemic of Joint problems where middle aged people are getting Hip and Knee replacement.
John.

{pg 24: "*Although Health Canada has classified fluoride as an essential element in the past (Department of National Health and Welfare, 1983), it now recommends that fluoride requirements should "only be based on the beneficial effect on dental caries" and notes that "attempts to demonstrate its essentiality for growth and reproduction in experimental animals have not been successful" (Department of National Health and Welfare, 1990).*" .... So, the Health Minister's rubbish about benefit to overall oral health, or overall health, is not supported by HC.}

Accumulation in bone: PG 25/26: *"Skeletal fluorosis is an excessive accumulation of fluoride in bone associated with increased bone density and outgrowths (exostoses) (ATSDR, 2003). Fluoride incorporated into bone (i.e., as fluorapatite) produces a crystal lattice that ... is more brittle and has a decreased tensile strength ...*

The preclinical stage and clinical stage I ...are composed of two grades of increased skeletal density. Symptoms are observed in the clinical stage II, characterized by sporadic pain, stiffness of joints, and osteosclerosis of the pelvis and spine. In the clinical stage III, chronic joint pain, arthritic symptoms, calcification of ligaments, and osteosclerosis of cancellous bones can be observed (NRC, 2006). Clinical stage III has been termed "crippling" skeletal fluorosis because mobility is affected as a result of excessive calcifications in joints, ligaments, and vertebral bodies (NRC, 2006)...

Age, nutritional deficiencies, renal insufficiency, bone remodelling, and the dose and duration of fluoride exposure can all influence the occurrence of the disease..."

Skeletal fractures pg 28: *"Results are contradictory regarding the potential link between fluoride in drinking water and the risk of skeletal fractures..."*

(In other words, they cannot say with certainty it does not cause fractures.)
accumulation occurs in brain and gastrocnemius muscle

Neurotoxicity and neurobehavioural effects, gastrocnemius muscle effects: pgs 48 - 50

Vulnerable subgroups, pg 52: *"In fact, some sub-groups in the population could potentially be more susceptible to the toxic effects of fluoride, for example people with kidney problems, osteoporosis, or poor*

nutrition. Similarly, some sub-populations may be exposed to a greater amount of fluoride on a daily basis, such as those working outdoors, living in hot climates, or living in proximity to fluoride-emitting facilities.."

Dental fluorosis, pg 52: *"Dental fluorosis is a permanent hypomineralization of tooth enamel due to fluorideinduced disruption of tooth development.. occurs only when exposure to fluorides happens during tooth formation and becomes apparent upon eruption of the teeth.... the outermost layer of enamel is affected, producing diffuse white lines across the tooth surface... As the severity increases, deeper layers are affected and the porosity increases, leading to a chalky white appearance (Fejerskov et al., 1990; NRC, 1993). Eventually, chewing and other forces erode the surface enamel, producing pits that can become stained by various food constituents... the damage to teeth caused by severe enamel fluorosis is a toxic effect that the majority of expert committee members judged to be consistent with prevailing risk assessment definitions of adverse health effects.."*

Osteosarcoma among males, pg 33*: "This exploratory analysis found an association between fluoride exposure in drinking water during childhood and the incidence of osteosarcoma among males but not consistently among females."*

FLUORIDE, THE SILENT KILLER

by: Yiamouyiannis, John, Ph.D.

Dr. Yiamouyiannis received his Ph.D. in biochemistry from the University of Rhode Island and served his post-doctoral fellowship at the Western Reserve University School of Medicine. He then became editor at Chemical Abstracts Service, the world's largest chemical information center, where he first became aware of the health damaging effects of fluoride. He is the former science director of the National Health Federation; he is the executive director of Health Action and president of the Safe Water Foundation. He is a world-leading authority on the biological effects of fluoride and is responsible for ending the use of fluoride in many areas of the United States and abroad.

HARMFUL EFFECTS OF FLUORIDE Fluoride is used as an insecticide and a roach killer. Even at the level they use to fluoridate your public water supply, usually at the rate of about 1 part fluoride for every million parts of water (1 ppm) by weight, it causes severe problems. As little as one-tenth of an ounce of fluoride will cause death. It is more poisonous than lead and just slightly less poisonous than arsenic. No one will die from drinking one glass of fluoridated water, but it is the long term chronic effects of drinking fluoridated water that affects health. Dental fluorosis is one of the earlier signs of fluoride poisoning, appearing in mild cases as a chalky area on the tooth, and in more advanced cases, teeth become yellow brown or black and the tips break off. Fluoride in the drinking water leads to fluoride levels in tissues and organs which damage enzymes. This results in a wide range of chronic diseases. Fluoride weakens the immune system and may cause allergic type reactions including dermatitis, eczema and hives. It causes birth defects and genetic damage. Fluoride is likely to aggravate kidney disease, diabetes and hypothyroidism. The amount consumed in drinking water has been shown to lower thyroid activity in humans. It also causes the breakdown of collagen which results in wrinkling of the skin and the weakening of ligaments, tendons and muscles. There are a number of ways that fluoride can be administered. The most insidious way is through the drinking water. Some of you have it in your mouthwashes, or in your toothpaste, or you may take a *fluoride supplement* which is dispensed in pills or drops.

FLUORIDE A BY-PRODUCT OF INDUSTRY Fluoride is an industrial waste product, a by-product of the aluminum industry and the *phosphate fertilizer* companies who have mountains of fluoride that is polluting the ground water. They have to get rid of it, and the old solution to pollution is dilution - just put it in the drinking water. People living in the vicinity of aluminum, phosphate, steel, clay, glass and enamel plants are exposed to high levels of fluoride in the air. For instance, the Hamilton area shows extremely high lung cancer rates that decrease as you get away from the downwind plume of the steel mills. If fluoride was left with the phosphate and sold to farmers, it would kill their crops. That is what originally happened when they used this high fluoride phosphate, and the farmers said they were going back to manure.

FLUORIDATED TOOTHPASTE Unless it says on the package *does not contain fluoride*, you are using fluoridated toothpaste. Fluoridated toothpaste contains *1,000 ppm fluoride*. There is enough fluoride at 1,000 to 1,500 parts per million to kill a small child if they consume the entire tube. If a child consumes just part of it, it could result in either acute or chronic toxicity. A four to six year-old child will swallow 25 to 33% of the toothpaste they put on their toothbrush. Don't let them put it in their mouth unless when they swallow it, it is good for them. People ask me where they can get *non-fluoridated toothpaste*. They have many brands of non-fluoridated toothpaste in health food stores, so pick up your toothpaste there, and make sure it doesn't have fluoride, because some health food stores have a couple of brands of fluoride toothpaste. Not

everything in a health food store is safe. Always read the labels. Pepsodent toothpaste also doesn't have fluoride. If you want something inexpensive, use baking soda and sea salt, but make sure you dissolve the salt crystals in water before you brush your teeth; otherwise the salt crystals will score the enamel.

GUM DAMAGE Fluoride actually causes gum damage at the concentrations used in fluoridated toothpaste at 1,000 ppm. Fluoride poisons enzyme activity and slows down the ability of the gums to repair themselves. If you brush your teeth with fluoridated toothpaste, you will suffer gum damage.

FLUORIDE GELS AND SOLUTIONS Some schools have weekly fluoride mouth-rinse programs in which the children swish fluoride solutions around in their mouths. The fluoride comes in a sugar size packet, and on the outside of the packet it says *fatal if swallowed*. If your child is in any of these programs at school, get them out of it. We have testimonials one after the other of children who come home with a stomach ache because they had actually accidentally swallowed part of it, and children do accidentally swallow. Fluoride treatments at the dentist's office are equally hazardous. In the typical fluoride treatment, *10,000 parts per million fluoride*, which comes in a flavoured gel to make it taste good, is left on the teeth for about five minutes. Then the child spits it out, though invariable he swallows some. The child cannot rinse, eat or drink for at least half an hour afterward. Children have died after swallowing fluoride topically applied on their teeth. In one well publicized case, the dental hygienist neglected to tell the child to wash his mouth out and spit out the solution. The child began vomiting and sweating and died the same day. Over 6% of children receiving fluoride treatments at the dental office suffer gastrointestinal distress such as nausea, vomiting, diarrhea and abdominal pain either immediately or within one hour after treatment. According to scientists at the U.S. Public Health Service, topical fluoride is practically ineffective in reducing tooth decay, and damages gum tissue. According to the American Association for the Advancement of Science, "the high concentrations of some products (gels, mouthwash, tablets, toothpaste, etc.) may be neither biologically desirable nor clinically necessary".

FLUORIDE SUPPLEMENTS Tablets and drops are another means of administering fluoride. The Canadian Dental Association has admitted in the last couple of years that children under the age of three should not be given fluoride supplements. And yet dental practitioners and pediatricians who haven't kept up to date are still giving fluoride supplements to young children. I advise against fluoride supplements for anyone.

ADDITION OF FLUORIDE TO PUBLIC WATER SYSTEMS The addition of fluoride to the public water supply is the most insidious way of chronically poisoning hundreds of millions of people around the world. Dr. Dean Burk was former chief chemist of the National Cancer Institute, and has co-authored studies with many Nobel prize winners including Otto Warburton, and he is the co-author of the most cited paper in the entire field of biochemistry - the Lineweaver-Burk Enzyme Kinetics. In the 1970s, Dean Burk and I conducted a number of studies which linked fluoride and cancer. There was already scientific evidence from the 1950s that fluoride was causing cancer, and a 1963 study by Driscowitz and Norton showed that increased fluoride concentrations in the media of experimental animals increased tumour incidence from 12% at the lowest concentrations up to 100%. Taylor and Taylor published a study in 1965 at the University of Texas in all the mainline medical journals showing that 1 ppm or even 0.5 ppm increased tumour growth rate by 25%. These studies bothered me and around 1975 I found that we had enough data to compare the cancer death rate before and after fluoridation of fluoridated communities and compare them to non-fluoridated communities.

Based on millions of subjects, the study showed a 5 to 10% increase in cancer death rate within three to five years after fluoridation was put into the water after correcting for various demographic factors like age, race and sex. All the variables were controlled. We followed this by a series of other studies. In 1977 we had full blown Congressional Hearings, and Congress stated: "We can no longer assure the American public that fluoride does not cause cancer". Dean Burk and other well-known scientists were there, and on the opposing side was the American Dental Association. Ten years later, Proctor and Gamble, makers of Crest toothpaste found that fluoride was causing precarcinogenic changes in cells.

HOW FLUORIDE AFFECTS THE DNA REPAIR MECHANISM Epidemiological evidence shows that fluoride causes cancer. It does this in several ways. It can actually cause the original lesion. In each one of our cells we have genetic material called DNA, and this DNA is double stranded, it has a helix shape and these two strands of DNA are held together by semi strong bonds called hydrogen bonds. Hydrogen bonds also hold proteins together. *Fluoride goes in and breaks those hydrogen bonds, and consequently destabilizes DNA.* It can't cause a lesion in the DNA itself, but if it is in a site of the cell that regulates cell growth, it will cause uncontrolled cell growth. A few minor modifications will give you first a tumour, and secondly an invasive tumour or cancer. So fluoride has the ability to actually cause the cancer. We have a marvelous system of repair and rejuvenation. Even if we go out in the sun, even if we have a lesion by fluoride itself, we have what is called a *DNA repair enzyme system*. So any lesion caused by the sun or ultra-violet light will be repaired. The DNA repair enzyme system will cut off the ends and use the complementary strand to repair itself and make intact genetic material. The unfortunate thing is that one part per million fluoride, the amount of fluoride that they use in the public water system, depresses the DNA repair system by 50%. So they have attacked us on the first defense of damage to our genetic material. Since people can get cancer from so many different causes, fluoride is just increasing our chances of getting cancer.

THE IMMUNE SYSTEM Even if the cancer cell starts dividing and invading surrounding tissues, if our immune system is strong enough, it will kill those cancer cells without any remedies, without chemotherapy, without anything and will destroy the occasional cancer that maybe all of us have had at one time or another. Once in a while cancer breaks through when the immune system is low or the DNA repair enzyme system is down, and we will get cancer. Fluoride causes the lesion; it inhibits the DNA repair enzyme, and then inhibits our immune system by 30 to 70%. And that occurs at only one part per million. How does it do that? Our immune system is composed of white blood cells including phagocyte cells that are carried in the blood system. If there is an infection or cancer or some foreign agent, these phagocytes will go to that area and start engulfing and destroying this bad agent whether it is a cancer cell or a bacterium or virus. It engulfs it in a little pocket called a *lysosome* which squirts enzymes and breaks down the bad agent into little pieces. They have other things called peroxisomes which burn that agent with free radicals and either destroy it or use it for building new and healthy cells. These phagocytes will actually eat up bacteria or viruses, and toxic substances are just thrown off. Studies from the University of Glasgow show that fluoride inhibits these white blood cells. Fluoride at levels below one part per million causes a chronic release of these free radicals from the white blood cell out into the blood stream where it starts slowly damaging your body by increasing free radicals. This is one of the reasons why we call fluoride *the ageing factor.*

NON-FLUORIDATED WATER Industrial quality reverse osmosis water brings the total dissolved solids down to less that one part per million for all the pollutants that might be in there. *Distilled water* will remove 99% of the fluoride all of the time. I also recommend a pre-

charcoal filter on a distiller to remove volatiles so that you are not getting noxious gases in your home. These are worse when you inhale them than when you drink them, because they go right into your blood stream and into your lungs. You can buy your water at the supermarket, but quite frankly you don't know what the quality of the water is. You must take care that the fluoride concentration is less than 0.2 ppm. Some spring waters like Vichy (which contains 8 ppm) are notoriously high in fluoride. Avoid beverages such as soft drinks, beer and fruit juices from concentrate that have been bottled in fluoridated areas. *Teas*, even brewed in fluoride-free water will contain about 1.2 to 2.4 ppm fluoride. Some people drink 8 to 15 cups of tea a day, and these amounts are large enough to cause dental fluorosis and other harmful effects.

MINERALS IN WATER If you want to get minerals, you must get them in the proper balanced ratio. Calcium, magnesium, phosphorus and other minerals must be in a ratio that is acceptable to a living organism. Get your minerals from healthy living organisms like vegetables, grains, nuts and seeds, and if you are not a vegetarian, like meats, bones or bonemeal. Beet greens are at the top of the list as a mineral supplement. I don't recommend milk or dairy as a calcium source; cow's milk has a very different constitution than human milk.

DETOXIFICATION If you stop taking fluoride, your body will get rid of it eventually. The fluoride that gets stuck in your bones gets stuck there for life pretty much, but that is not necessarily bad. Where fluoride has adverse effects is in the soft tissues. If you take over 200 mg of vitamin C per day that is all you really need for removing fluoride. In three to six months you should have about 99% of it out which is good enough.

GOOD DIET, NOT FLUORIDE, IS NECESSARY FOR HEALTHY TEETH Many primitive societies whose drinking water contains negligible amounts of fluoride go through life without tooth decay because they eat very little sugar and other refined carbohydrates.

DOES FLUORIDE REDUCE TOOTH DECAY? Numerous attempts have been made to show that the amount of fluoride used to fluoridate public water systems reduces tooth decay under laboratory conditions. Still no laboratory study has ever shown that this amount of fluoride is effective in reducing tooth decay. Further, there are no epidemiological studies on humans showing that fluoridation reduces tooth decay that meet the minimum requirements of scientific objectivity such as the double blind design.

* * *

You may contact Dr. Yiamouyiannis at 614-548-5340. His book Fluoride: The Aging Factor contains references to studies and information cited in this article. His other book, High Performance Health is also available.