

# Facts About Fluoridation You Did Not Know

By Fluoride Action Network

## **98% Of Western Europe Has Rejected Water Fluoridation.**

This includes Austria, Belgium, Denmark, Finland, France, Germany, Italy, Luxembourg, Netherlands, Norway, and Sweden. The predominant reason for Europe's rejection is the belief that public drinking water is NOT the appropriate vehicle with which to deliver medication to a population.

**Fluoride Is Not An Essential Nutrient**, which means that no human disease (including dental decay) has ever been linked to a fluoride deficiency. (1)

The fluoride used to fluoridate water is an industrial waste product from the phosphate fertilizer industry. It is an unprocessed hazardous waste, contaminated with a number of toxins, particularly arsenic.

Fluoridation adds between 0.1 and 1.6 parts per billion (ppb)

**Arsenic** to drinking water, and therefore violates the EPA's Maximum Contaminant Level Goal for arsenic - which is 0 ppb. (2)

Hydrofluosilicic acid & sodium silicofluoride, which are the chemicals used to fluoridate 91% of fluoridated water in the US, have Never Been Tested for safety and effectiveness.

According to a November 16, 2000 letter from the EPA, "to answer your question on whether we have in our possession empirical scientific data on the effects of fluosilicic acid or sodium silicofluoride on health and behavior, the answer is no."

Most dental authorities are now conceding that **there is little, if any, benefit from swallowing fluoride**, and that fluoride's benefits (whatever they are) come from topical application.

When water fluoridation began 50 years ago, it was believed that fluoride needed to be ingested in order to be effective. This is NO longer the view of the dental establishment, which now generally concedes that fluoride's benefits are derived primarily from **topical** application. (3)

According, for instance, to the US Centers for Disease Control,

"Laboratory and epidemiologic research suggests that fluoride prevents dental caries predominately after eruption of the tooth into the mouth, and its actions primarily are topical for both adults and children."

All fluoride products designed to be ingested (e.g. fluoride supplements) are available by **prescription** only. No fluoride products designed for ingestion have ever been approved as safe or effective by the US Food & Drug Administration. (4)

### **By Logical Extension Fluoridated Water Can Appropriately Be Classified As An Unapproved Prescription Drug.**

The dental community concedes that fluoride is ineffective at preventing the most common type of dental decay - **pit & fissures**. Pit & fissure decay - which is the decay found in the crevices of the chewing surfaces - accounts for upwards of 85% of dental decay now experienced in the US. (5)

**New evidence suggests that fluoridation is either unnecessary or doesn't work.** Cavities have declined at similarly impressive rates throughout the entire western, industrialized world over the past half century.

This decline has occurred irrespective of a country's fluoridation status. Western Europe, which is 98% unfluoridated, has experienced the SAME decline in cavities as the heavily fluoridated US, and today enjoys the SAME low level of tooth decay. (6)

### **The largest dental survey ever conducted in the US found virtually no difference in dental decay between children living in fluoridated vs. unfluoridated areas.**

The study, which was conducted by the National Institute Of Dental Research (NIDR), found that the average difference in tooth decay (0.6 tooth surfaces) between children living in fluoridated vs unfluoridated areas amounted to LESS than 0.5% of the 128 total tooth surfaces in a child's mouth. (7)

### **Five peer-reviewed studies published in the last 2 years have found that dental decay DOES NOT increase when communities stop fluoridation. (8)**

The rhetoric supporting fluoridation is increasingly centered around the notion that fluoridation benefits the neediest in society the most. This claim flies in the face of the experience of most US inner cities

over the past 50 years.

Despite the fact that nearly all large US cities have been fluoridated for decades, dental decay is currently rampant in virtually all poor urban areas.

One of the major dental health problems experienced in poor communities is a debilitating condition known as **"baby bottle tooth decay"** which is also referred to as **"early childhood caries."**

This condition, which results from excessive consumption of sweetened liquids at a young age, is **not** prevented by water fluoridation. (9) According to a study in Pediatric Nursing "Data from Head Start surveys show the prevalence of baby bottle tooth decay is about three times the national average among poor urban children, even in communities with a fluoridated water supply."

**Fluoride Is A Very Toxic Substance**, which is why it is the active ingredient in a number of pesticides. Just 2 grams of fluoride is enough to kill an adult, and just 500 mg is enough to kill a child. (11) In the US, people have died, and many have become sick, when faltering fluoridation equipment has pumped excess fluoride into the water.

Poor nutrition exacerbates the toxic effects of fluoride exposure, which is a further reason why it's wrong to target poor communities with fluoridation (as poor nutrition is more prevalent in low income communities).

According to the Agency for Toxic Substances and Disease Registry, "Existing data indicate that subsets of the population may be unusually susceptible to the toxic effects of fluoride and its compounds. These populations include the elderly, people with deficiencies of calcium, magnesium and/or vitamin C, and people with cardiovascular and kidney problems." (12)

**Contaminated Food Chain** - Many of the processed beverages and foods sold in the US contain elevated levels of fluoride due to the use of fluoridated water during manufacturing, and the presence of fluoride pesticides.

Total fluoride exposure has increased substantially since the early days of fluoridation. (13) When fluoridation first began, exposure to fluoride from sources other than fluoridated water, was minimal.

Today that is not the case.

People now receive fluoride from a whole host of sources, including

pesticide residues, fluoridated dental products, mechanically deboned meat, fluoride air pollution, and processed foods & beverages prepared with fluoridated water (e.g. soda, juice, beer, cereal, etc).

It has now reached the point where most people receive the "optimal" 1 mg/day of fluoride (which fluoridated water was designed to deliver) **without** ever drinking a glass of fluoridated water.

Despite the increase in total fluoride exposure, the concentration of fluoride added to drinking water (0.7-1.2 mg/L) as prescribed by the US Government, is still the same as it was back in the 1940s.

Due to the increase in total fluoride exposure, there has been a major increase in the rate of **dental fluorosis** found among American children. According to the US Government, approximately 1 in 3 children living in fluoridated areas have dental fluorosis on at least 2 teeth. (14)

**Dental fluorosis is the first visible sign that fluoride has poisoned enzymes in the body.**

Approximately half of the fluoride we ingest each day accumulates in our bodies, primarily in the bones, but also in soft tissues. (15)

High levels of naturally occurring fluoride causes a crippling bone disease known as skeletal fluorosis. According to UNICEF, skeletal fluorosis is endemic "in at least 25 countries across the globe" (16) with the problem particularly acute in India, China and other developing countries.

Skeletal fluorosis comes in varying degrees of severity depending on the level of exposure. The earliest symptoms are characterized by joint pain that is difficult, if not impossible, to distinguish from arthritis.

According to a review on fluoridation by Chemical & Engineering News: "Because some of the clinical symptoms mimic arthritis, the first two clinical phases of skeletal fluorosis could be easily misdiagnosed [as arthritis]." The World Health Organization states that "early cases [of skeletal fluorosis] may be misdiagnosed as rheumatoid or osteoarthritis." (17)

**It is estimated that approximately 40 million Americans suffer from arthritis, the most common type being osteoarthritis.**

Fluoride stimulates abnormal **bone development**. Clinical trials published in the New England Journal of Medicine and Journal of Bone and Mineral Research (18) report that high dose fluoride

treatment increases bone mass but that the newly formed bone is "structurally unsound" (19). Thus, instead of reducing **hip fracture**, the studies found that high doses of fluoride **increase** hip fracture.

There is concern that "low" doses of fluoride, taken over long periods of time (e.g. fluoridated water), may also increase the rate of hip fracture. Approximately 20 recent studies have investigated the relationship between fluoridated water and hip fracture, with approximately half of the studies finding an association. (20)

A 1995 study in the journal *Neurotoxicology and Teratology*, found that fluoride accumulated in the brain of rats and produced age-specific behavioral deficits typical of most **neurotoxic** agents. (21)

In the study, fluoride induced damage to the hippocampal region of the brain. Damage to the hippocampal region has been linked to hyperactivity and cognitive deficits. Based on the results, the lead author of the study, Dr. Phyllis Mullenix, has come out and advised against water fluoridation.

Five recent peer reviewed studies from China have found an association between elevated fluoride exposure and **decreased IQs** in children - an effect that would be expected based on Mullenix's research. (22)

In the late 1990s, a British scientist discovered that fluoride accumulates to very high levels (avg = 9000 ppm) in the crystallized tissue of the human **pineal gland**.

A subsequent animal study found that **fluoride interferes with the pineal gland's production of melatonin**, a hormone which helps regulate the onset of PUBERTY. In the study, animals dosed with fluoride had reduced levels of melatonin metabolites in their urine and had earlier onsets of puberty than the controls. (23)

Up until the 1950s, European doctors used fluoride to reduce the activity of the **thyroid gland** for people suffering from overactive thyroid (hyperthyroidism). (24) The daily dose of fluoride which people are now receiving in fluoridated communities (1.6 to 6.6 mg/day) (25) actually exceeds the dose of fluoride which was found to depress the thyroid gland (2.3 to 4.5 mg/day). (26)

**Hypothyroidism** (under-active thyroid) is currently one of the most common medical problems in the United States. Synthroid, the drug doctors prescribe to treat hypothyroidism, was the fourth most prescribed drug in the US in the year 2000. Symptoms of hypothyroidism include depression, fatigue, weight gain, muscle and joint pains, increased cholesterol levels, and heart disease.

A recent study published in the journal Brain Research found that 1 PPM fluoride in water facilitated the uptake of **aluminum** into the brain of rats, producing the type of brain tangles (amyloid deposits) that are associated with Alzheimers disease and other types of **dementia**. (27)

An epidemiological study published in the December 2000 issue of the journal Neurotoxicology, found that fluoridated water was associated with elevated levels of **lead** in children's blood. (28)

The study's findings parallel the findings of an earlier study published in the September 1999 issue of the International Journal of Environmental Studies. (29) Lead in the blood is associated with a variety of neurological problems, including reduced intelligence, aggression and hyperactivity.

Dozens of laboratory studies have found that fluoride is a **mutagen** - a classification which frequently indicates that a substance is carcinogenic (i.e. that it causes **cancer**). (30) A cancer bioassay conducted by the National Toxicology Program found that rats dosed with fluoride had a statistically significant increase in **bone tumors** (osteosarcomas), which were not found among the controls.

The initial review of the study also reported that the fluoride-dosed rats had tumors of the thyroid, oral cavity and rare tumors of the liver; however these tumors were later downgraded under conspicuous and controversial circumstances. According to Dr. William Marcus, the Chief Toxicologist at the EPA's Office of Drinking Water, the downgrading of the tumors was politically motivated and not scientifically defensible. (31)

A recent epidemiological study conducted by a scientist from the US Public Health Service found that female **infertility** was associated with elevated levels of fluoride (>3ppm) in drinking water. The study concluded that more emphasis needs to be given to the effects on health from total fluoride exposure - not just exposure to fluoridated drinking water. (32)

In light of the recent research indicating health risks from low level fluoride exposure, the Union of Scientists and professionals at EPA headquarters has voted to **oppose fluoridation (33)** and has called upon Congress to issue a "national moratorium" on the fifty year old policy. According to the Vice President of the Union, Dr. J. William Hirzy,

**"In summary, we hold that** fluoridation is an unreasonable risk. That is, the toxicity of fluoride is so great and the purported benefits associated with it are so

small - if there are any at all - that requiring every man, woman and child in America to ingest it borders on criminal behavior on the part of governments."

After years of overlooking the problems with fluoride & fluoridation, the environmental community is finally beginning to address the issue. In September of 2001, the Sierra Club announced that:

There are now valid concerns regarding the potential adverse impact of fluoridation on the environment, wildlife, and human health. The Sierra Club therefore supports giving communities the option of rejecting mandatory fluoridation of their water supplies.

To protect sensitive populations, and because safer strategies and methods for preventing tooth decay are now available, we recommend that these safer alternatives be made available and promoted."

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