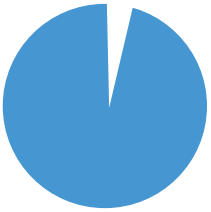
10 FACTS ABOUT FLUORIDE

FLUORIDEALERT.ORG
Fluoride Action Network

FACT 1 MOST DEVELOPED COUNTRIES DO NOT FLUORIDATE THEIR WATER

In the United States, health authorities call fluoridation "one of the top 10 public health achievements of the 20th century." Few other countries share this view. In fact, more people drink artificially fluoridated water in the U.S. alone than in the rest of the world combined.[1] Most advanced nations do not fluoridate their water. In western Europe, 97% of the population has water without a single drop of fluoride added to it.[2] Fluoridation proponents will sometimes say this is because Europe adds fluoride to its salt. Only five nations in western Europe, however, have any fluoridated salt.[3] The vast majority do not.

WESTERN EUROPE

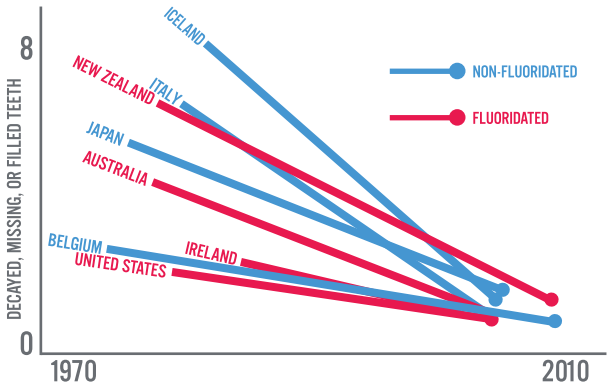


97%
DO NOT DRINK FLUORIDATED WATER

DID YOU KNOW?

MORE PEOPLE DRINK ARTIFICIALLY FLUORIDATED WATER IN THE U.S. ALONE THAN IN THE REST OF THE WORLD COMBINED

It is often claimed that fluoridated water is the main reason the United States has had a large decline in tooth decay over the past 60 years. This same decline in tooth decay, however, has occurred in all developed countries, most of which have never added any fluoride to their water.[4] Today, according to data from the World Health Organization, there is no discernible difference in tooth decay between the minority of developed countries that fluoridate water, and the majority that do not.[5]



SOURCE: WORLD HEALTH ORGANIZATION (2013)

FACT 2

FLUORIDATED COUNTRIES DO NOT HAVE LESS TOOTH DECAY THAN NON-FLUORIDATED COUNTRIES

FACT 3 FLUORIDE AFFECTS MANY TISSUES IN THE BODY BESIDES THE TEETH

Fluoridation advocates have long claimed that the safety of fluoridation is beyond scientific debate.[6] However, according to the well-known toxicologist, Dr. John Doull, who chaired the National Academy of Science's review on fluoride, the safety of fluoridation remains "unsettled" and "we have much less information than we should, considering how long it has been going on."[7] In 2006, Doull's committee at the NAS published an exhaustive 500-page review of fluoride's toxicity.[8] The report concludes that fluoride is an "endocrine disruptor" and can affect many things in the body, including the bones, the brain, the thyroid gland, the pineal gland, and even blood sugar levels.[9]

Far from giving fluoride a clean bill of health, the NAS called upon scientists to investigate if current fluoride exposures in the United States are contributing to chronic health problems, like bone disorders, thyroid disease, low intelligence, dementia, and diabetes, particularly in people who are most vulnerable to fluoride's effects.[10] These recommendations highlight that—despite 60 years of fluoridation—many of the basic studies necessary for determining the program's safety have yet to be conducted.

DID YOU KNOW?

"It is apparent that fluorides have the ability to interfere with the functions of the brain."

"The possibility has been raised by studies conducted in China that fluoride can lower intellectual abilities."

"Fluoride is an endocrine disruptor."

"Several lines of information indicate an effect of fluoride exposure on thyroid function."

"Sufficient fluoride exposure appears to . . . increase the severity of some types of diabetes."

"The relationship between fertility and fluoride requires additional study."

"Further research on a possible effect of fluoride on bladder cancer risk should be conducted."

"These changes have a bearing on the possibility that fluorides act to increase the risk of developing Alzheimer's disease."

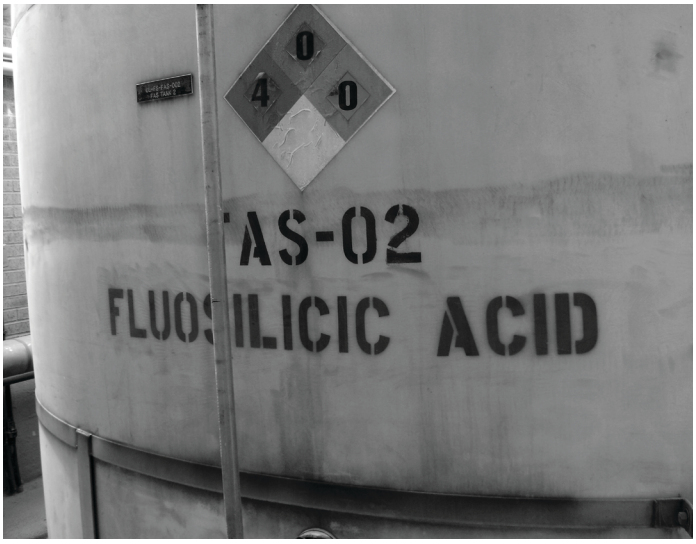
SOURCE: National Research Council. (2006). Fluoride in Drinking Water: A Scientific Review of EPA's Standards. National Academies Press, Washington D.C.

FACT 4 FLUORIDATION IS NOT A "NATURAL" PROCESS

Fluoridation advocates often say that "nature thought of fluoridation first." By this, they mean that fluoride occurs at naturally high levels in some water supplies.[11] Lots of toxic substances, however, like arsenic, and even some medicines, like lithium, can occur at naturally high levels. This doesn't mean they're safe.[12] Further, the level of fluoride added in artificial fluoridation programs is far higher than the level of fluoride that occurs in the vast majority of (unpolluted) fresh surface waters.[13]

Also the main fluoride chemical (fluorosilicic acid) that is added to water is not what most people would call

a naturally occurring compound. It is a corrosive acid captured in the air pollution control devices of the phosphate fertilizer industry.[14] Fluoride is captured in air pollution control devices because fluoride gases are hazardous air pollutants that cause significant environmental harm.[15] This captured fluoride acid is the most contaminated chemical added to public water supplies,[16] and may impose additional risks to those presented by natural fluorides. These risks include a possible cancer hazard from the acid's elevated arsenic content, and a possible neurotoxic hazard from the acid's ability--under some conditions--to increase the erosion of lead from old pipes.[17]



DID YOU KNOW?

THE FLUORIDE CHEMICAL ("FLUOROSILICIC ACID") ADDED TO MOST TAP WATER IS A CORROSIVE ACID CAPTURED IN AIR POLLUTION CONTROL DEVICES

FACT 5

40% OF AMERICAN TEENAGERS SHOW VISIBLE SIGNS OF FLUORIDE OVER-EXPOSURE

According to a recent national survey by the CDC, about 40% of American teenagers have a condition called dental fluorosis.[18] Fluorosis is a defect of tooth enamel caused by fluoride's interference with the tooth-forming cells. The condition shows as cloudy spots and streaks and, in more severe cases, brown stains and tooth erosion.[19] In the 1950s, health officials claimed that fluorosis would only affect 10% of children in fluoridated areas.[20] This prediction has proven false. Today, not only do 40% of American teenagers have fluorosis, but, in some fluoridated areas, the rate is as high as 70 to 80%, with some children suffering advanced forms of the condition.[21]

> "Virtually all authors have noted that some children could ingest more fluoride from [toothpaste] alone than is recommended as a total daily fluoride ingestion."
>
> *- Dr. Stephen Levy, et al., Journal of Public Health Dentistry (1999).*

The high rate of fluorosis in the U.S. reflects the fact that **children now receive fluoride from many sources besides tap water**. When fluoridation first began, there was not a single tube of toothpaste that contained fluoride. Today, over 95% of toothpastes are fluoridated. Although fluoride toothpastes carry poison warnings on them, studies show that children can swallow large amounts of fluoride when they brush, particularly when using toothpaste with bubble gum and candy flavors.[22]

.

And there are other sources of fluoride as well, including processsed beverages/foods,[23] fluoride pesticides,[24] tea,[25] Teflon pans,[26] and some fluorinated pharmaceuticals.[27] The concern today, therefore, is not just the safety of fluoridated water by itself, but the safety of fluoridated water in combination with all the other sources to which we're now exposed.

Dental Fluorosis >
Photograph by Hardy Limeback, DDS, PhD

DID YOU KNOW?

36 STUDIES HAVE FOUND A CORRELATION BETWEEN FLUORIDE AND LOWER IQ

FACT 6 FOR INFANTS, FLUORIDATED WATER PROVIDES NO BENEFITS, ONLY RISKS

Up until the 1990s, health authorities advised parents to give fluoride to newborn babies. This is no longer the case. Today, the Institute of Medicine recommends that babies consume a minuscule 10 micrograms of fluoride per day.[28] This is roughly the equivalent of what babies ingest from breast milk, which contains virtually no fluoride.[29]

Infants who consume formula made with fluoridated tap water consume up to 700 to 1,200 micrograms of fluoride, or about 100 times more than the recommended amount. According to the CDC, these early spikes of fluoride exposure during infancy provide no known advantage to teeth.[30] These spikes can, however, produce harm.

Recent studies show that babies who are given fluoridated water in their formula develop significantly higher rates of dental fluorosis.[31] Because of this, a number of prominent dental researchers now advise that parents should not add fluoridated water to baby formula.[32]

And teeth are not the only concern. In July of 2012, scientists from Harvard University warned that **the developing brain may be another target for fluoride toxicity.**[33] The Harvard team based their warning on a large number of studies from China that have found reduced IQ scores among children exposed to elevated fluoride during their early years of life. Twelve of the studies the Harvard team reviewed found IQ loss at fluoride levels deemed safe in the U.S. and a study sponsored by UNICEF found IQ loss in iodine-deficient children at the so-called "optimal" fluoridation level.[34] The possibility that fluoridated water can reduce IQ is a matter that "definitely deserves concern."[35]

FACT 7

FLUORIDE SUPPLEMENTS HAVE NEVER BEEN APPROVED BY THE FDA

Fluoride "supplements" are designed to provide children the same dose of fluoride they would receive by drinking fluoridated water.[36] Unlike other dietary supplements, however, you can't just walk into a grocery store and buy a fluoride supplement. Because of fluoride's toxicity, you can only buy a fluoride "supplement" if you have a doctor's prescription. Yet, although federal law requires that prescription drugs be approved as safe and effective by the FDA,[37] the FDA has never approved fluoride supplements for the prevention of tooth decay.[38] In fact, **the only fluoride supplements the FDA has reviewed, have been rejected**.[39] So, with fluoridation, we are adding to the water a prescription-strength dose of a drug that has never been approved by the FDA.

FACT 8

FLUORIDE IS THE ONLY MEDICINE ADDED TO PUBLIC WATER

Fluoride is the only chemical added to water that doesn't actually treat the water. Chlorine, for example, is added to kill bacteria so that we can drink the water without getting sick. Fluoride, by contrast, is added to prevent a disease (tooth decay) that is not caused by drinking water.

Fluoridation proponents claim that fluoridated water is not a medication because, in their view, it's no different than adding iodine to salt or vitamin D to milk. What proponents fail to acknowledge, however, is that iodine and vitamin D are both essential nutrients; but fluoride is not.

An essential nutrient is something the body has a physiological demand for. If we don't have enough

Fluoridation adds a prescription-strength dose of a drug to the water supply.

iodine, for example, our thyroid gland won't function properly. Although fluoride advocates sometimes claim that fluoride is a "nutrient," the National Academy of Sciences has repeatedly confirmed that this is not the case.[40] Because fluoride is not a nutrient, the FDA has defined fluoride as a medicine when used to prevent disease.[41] Since tooth decay is a disease, adding fluoride to water to prevent tooth decay is -- as a matter of logic -- a form of medication. This is one of the reasons why most European nations have rejected fluoridation: because, in their view, the water supply is an inappropriate way to deliver medicine.[42] **With other medicines, it is the patient, not the doctor, who has the right to decide** which drug to take.[43] Fluoridation denies people this right.

> "Fluoridation goes against all principles of pharmacology. It's obsolete."
>
> *- Dr. Arvid Carlsson, Nobel Laureate in Medicine/Physiology.*

FACT 9

SWALLOWING FLUORIDE PROVIDES LITTLE BENEFIT TO TEETH

When water fluoridation first began back in the 1940s, the medical profession believed fluoride needed to be ingested to be most effective in preventing cavities.[44] This was why fluoride was added to water and pills—because these are things that people swallow. Today, however, it is now widely recognized that fluoride's main benefit does not actually come from ingestion, it comes from fluoride's **topical contact** with teeth[45]—a fact that even the CDC has now acknowledged.[46] So, not only does fluoridation add a medicine to water, it adds a medicine that does not actually need to be swallowed.

FACT 10

DISADVANTAGED COMMUNITIES ARE THE MOST DISADVANTAGED BY FLUORIDE

In the United States, there is a serious shortage of dentists who will treat low-income patients.[47] The claim, however, that we can compensate for this lack of care by forcing poor populations to consume fluoridation chemicals in their water is a dangerous one.

The conditions that make people more vulnerable to fluoride toxicity are more prevalent in poor communities than affluent ones (e.g., nutrient deficiencies, infant formula consumption, kidney disease, and diabetes).[48] This likely explains why African American and Mexican American children suffer significantly higher rates of dental fluorosis.[49] These disparities in fluoride risk have led several prominent civil rights leaders—including Andrew Young and the nation's largest Hispanic civil rights organization—to call for an *end to fluoridation*.[50]

Despite claims that fluoridation can prevent the high rates of tooth decay seen in poor areas, the vast majority of poor urban communities have been fluoridated for over 30 years, and yet are still suffering from a severe oral health crisis.[51] In fluoridated Cincinnati, the dental director described the state of oral health among poor children as "absolutely heartbreaking and a travesty," adding that "people would be shocked to learn how bad the problem has become.'"[52] Many other cities have experienced the same fate. *(See sidebar)*

DID YOU KNOW?

- In (fluoridated) Detroit, 91% of 5-year-old black children have tooth decay, with 42% suffering from "severe" decay.[54]
- In (fluoridated) New York City, 34% of pre-school black children from low-income families have rampant tooth decay, with a staggering 6.4 cavities per affected child.[55]
- In (fluoridated) Chicago, 64% of third graders have tooth decay.[56]
- In San Antonio, annual head start surveys show that fluoridation failed to reduce the high rate of tooth decay among the city's head start children. After eight years of fluoridation, the tooth decay rate did not decrease--it increased.[57]
- A national survey by the CDC found that the most fluoridated state in the U.S. (Kentucky) suffers the highest rate of tooth loss (44%) while the least fluoridated state (Hawaii) suffers the lowest rate of tooth loss (16%).[58]
- Untreated tooth decay in fluoridated urban areas has led to several deaths, including a 12-year-old child in Prince Georges Maryland, and a 24-year-old father in Cincinnati.[59]

FLUORIDATED

The simple fact is that **poor populations need dental care, not fluoridation chemicals in their water.** The millions of dollars spent each year promoting fluoridation would be better spent advocating for policies that provide real dental care: like allowing dental therapists to provide affordable care to populations with little access to dentists.[53] In short, fluoridation provides good PR for dental trade associations, but bad medicine for those it's supposedly meant to serve.

REFERENCES:

NOTES FOR FACT 1: "MOST DEVELOPED COUNTRIES DO NOT FLUORIDATE THEIR WATER"

1) See data at: www.fluoridealert.org/content/bfs-2012/
2) See data at: www.fluoridealert.org/content/water_europe/
3) For data on the number of countries in Europe that allow fluoridated salt, see: Gotzfried F. (2006). *Schweiz Monatsschr Zahnmed* 116: 371–75. Unlike water fluoridation (which applies fluoride to an entire water supply), salt fluoridation in Europe is limited to household salt that people have the option to purchase. In two of the five European countries that allow salt fluoridation, only 6% to 10% of household salt is actually fluoridated). Salt fluoridation is thus a far less intrusive application of fluoride than water fluoridation.

NOTES FOR FACT 2: FLUORIDATED COUNTRIES DO NOT HAVE LESS TOOTH DECAY THAN NON-FLUORIDATED COUNTRIES

4) See extensive compilation of published research and data at: www.fluoridealert.org/studies/caries01/
5) World Health Organization Collaborating Centre for Education, Training, and Research in Oral Health, Malmö University, Sweden. Data available at http://www.mah.se/CAPP/ (accessed on March 30, 2013).

NOTES FOR FACT 3: FLUORIDE AFFECTS MANY TISSUES IN THE BODY BESIDES THE TEETH

6) A representative example of this viewpoint was expressed by Dr. Robert Kehoe in 1957: "The question of the public safety of fluoridation is non-existent from the viewpoint of medical science."
7) In a January 2008 article published in *Scientific American*, Dr. Doull was quoted as saying: "[W]e've gone with the status quo regarding fluoride for many years—for too long, really—and now we need to take a fresh look. In the scientific community, people tend to think this is settled. I mean, when the U.S. surgeon general comes out and says this is one of the 10 greatest achievements of the 20th century, that's a hard hurdle to get over. But when we looked at the studies that have been done, we found that many of these questions are unsettled and we have much less information than we should, considering how long this has been going on. I think that's why fluoridation is still being challenged so many years after it began."
See: www.fluoridealert.org/researchers/nrc/panelists/
8) National Research Council. (2006). Fluoride in drinking water: a scientific review of EPA's standards. National Academies Press, Washington D.C. Available online at: www.nap.edu/catalog.php?record_id=11571
9) See excerpts of NAS's findings at: www.fluoridealert.org/researchers/nrc/findings/
10) See excerpts of NAS's recommendations at: www.fluoridealert.org/researchers/nrc/recommendations/

NOTES FOR FACT #4: FLUORIDATION IS NOT A "NATURAL" PROCESS

11) Most fresh surface waters (e.g., lakes/streams) contain very little fluoride. When fluoride is obtained from deep ground water supplies, however, fluoride contamination can become a significant problem. See *infra* note 13.
12) High levels of naturally occurring fluorides have wreaked havoc on tens of millions of people's health around the world, particularly in developing countries where water shortages force many rural communities to obtain water from deep in the ground. Consumption of fluoride-laden well water causes serious health ailments, including tooth loss, bone disease, ulcers, brain damage, heart disease, and thyroid disease. See: www.fluoridealert.org/issues/health/. Because of this, international organizations like UNICEF assist developing nations in finding ways of removing fluoride from the water. For a review by UNICEF on the worldwide scope of fluoride poisoning, see: www.fluoridealert.org/uploads/UNICEF-1999.pdf
13) In Canada, the average level of fluoride in fresh surface water is just 0.05 ppm, which is 14 to 24 times less fluoride than added to water in fluoridation programs. See: Environment Canada. (1993). *Inorganic Fluorides: Priority Substances List Assessment Report.* Government of Canada, Ottawa. p. 14. Fresh vegetables, fruits, milk, and eggs contain even lower levels of fluoride (unless they're sprayed with fluoride pesticides). See:n www.fluoridealert.org/content/fresh_foods/. In the rare circumstance where rivers or ponds contain the same level of fluoride that is added to tap water, salmon and frogs have been found to suffer serious harm, including bone disease, changes in behavior, and increased mortality. See: Shaw SD, et al. (2012). Journal of Zoo & Wildlife Medicine 43(3):549-65; Damkaer DM, Dey DB. (1989). North American Journal of Fisheries Management. 9: 154-162.
14) As noted by the U.S. Environmental Protection Agency, "By recovering by-product fluosilicic acid from fertilizer manufacturing, water and air pollution are minimized, and water authorities have a low-cost source of fluoride available to them."
See: www.fluoridealert.org/uploads/hanmer1983.pdf.
15) In 20th century, fluoride pollution caused more harm to livestock than any other pollutant. In Polk County, Florida (the capital of America's phosphate industry), cattle downwind of the phosphate industry suffered "mass fluoride poisoning." Between 1953 and 1960, "the cattle population dropped 30,000 head," and "an estimated 150,000 acres of cattle land were abandoned." As one farmer explained, "Around 1953 we noticed a change in our cattle… We watched our cattle become gaunt and starved, their legs became deformed; they lost their teeth. Reproduction fell off and when a cow did have a calf, it was also affected by this malady or was a stillborn." For discussion and documentation, see: www.fluoridealert.org/articles/phosphate01/
16) See: Weng C, et al. (2000). Treatment chemicals contribute to arsenic levels. Opflow (AWWA), October, p. 6-7. Available at: http://www.fluoridealert.org/uploads/opflow-2000.pdf
17) Hirzy JW, et al. (2013). Environ. Sci. Policy http://dx.doi.org/10.1016/j.envsci.2013.01.007. On the lead/neurotoxic risk, see: Coplan MJ, et al. (2007). Neurotoxicology 28(5):1032-42; Maas RP, et al. (2007). Neurotoxicology 28(5):1023-31.

NOTES FOR FACT #5: 40% OF AMERICAN TEENAGERS SHOW VISIBLE SIGNS OF FLUORIDE OVER-EXPOSURE.

18) Beltran-Aguilar ED, et al. (2010). *Prevalence and Severity of Dental Fluorosis in the United States, 1999–2004.* NCHS Data Brief No. 53.
19) For photographs and discussion, see: www.fluoridealert.org/issues/fluorosis/
20) Spzunar SM, Burt BA. (1988). J. Dent. Res. 67(5):802-06; Hodge HC. (1950). J. Am. Dent. Assoc. 40:436-39.
21) See: www.fluoridealert.org/studies/dental_fluorosis01/
22) See: www.fluoridealert.org/issues/sources/f-toothpaste/
23) See: www.fluoridealert.org/issues/sources/processed/
24) See: www.fluoridealert.org/issues/sources/f-pesticides/
25) See: www.fluoridealert.org/issues/sources/tea/
26) See: www.fluoridealert.org/issues/sources/teflon-pans/
27) See: www.fluoridealert.org/issues/sources/pharmaceuticals/

NOTES FOR FACT #6: FOR INFANTS, FLUORIDATED WATER PROVIDES NO BENEFITS, ONLY RISKS

28) Institute of Medicine. (1997). *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride.* p. 302.
29) Ekstrand J, et al. (1981). British Medical Journal 283: 761-2.
30) In a May 15, 2012 letter to Senator Barbara Boxer, the CDC wrote:
"We are **unaware of data** . . . about the additional protection from tooth decay that could result from [intakes greater than 10 micrograms/day of fluoride]." See: www.fluoridealert.org/uploads/cdc-2012.pdf
31) See: www.fluoridealert.org/studies/infant02/
32) See: www.fluoridealert.org/studies/infant01/
33) Choi AL, et al. (2012). Environmental Health Perspectives 120:1362-68.
34) For a discussion of these studies, see: www.fluoridealert.org/articles/iq-facts/. For a listing of all studies that have found an association between fluoride and reduced IQ, see: www.fluoridealert.org/studies/brain01/.
35) Dr. Philippe Grandjean, the senior scientist who authored the Harvard review, has stated that: "Chemical brain drain should not be disregarded. The average IQ deficit in children exposed to increased levels of fluoride in drinking water was found to correspond to about 7 points – a sizable difference. To which extent this risk applies to fluoridation in Wichita or Portland or elsewhere is uncertain, but **definitely deserves concern**." See: www.braindrain.dk/2013/02/fluoridated-water-and-brains/.

NOTES FOR FACT #7: FLUORIDE SUPPLEMENTS HAVE NEVER BEEN APPROVED BY THE FDA

36) Under current fluoride supplementation guidelines, two-year-old children living in non-fluoridated areas are prescribed 0.25 mg of fluoride per day. This is the same amount of fluoride contained in just one 8 ounce glass of water fluoridated at 1 ppm. To learn more about current fluoride supplementation guidelines, see: Rozier RG, et al. (2010). J. Am. Dent. Assoc. 141(12):1480-89.
37) 21 U.S.C. § 355(a). Although an exception to this rule exists for drugs that were on the market prior to 1938, fluoride supplements did not enter the market until the 1950s. Accordingly, the "grandfather clause" exception does not apply to fluoride supplements. For a detailed discussion on this point, see: www.fluoridealert.org/researchers/fda/explanations/
38) To access FDA's letters confirming this fact, see: www.fluoridealert.org/researchers/fda/not-approved/
39) The two fluoride supplements that FDA has rejected are Enziflur (a fluoride/vitamin combination) and prenatal fluoride supplements. See: www.fluoridealert.org/uploads/enziflur-1975.pdf and www.fluoridealert.org/articles/fda-1966/.

NOTES FOR FACT 8: FLUORIDE IS THE ONLY MEDICINE ADDED TO PUBLIC WATER

40) According to the NAS, "fluoride is no longer considered an essential factor for human growth and development." See: www.fluoridealert.org/studies/essential-nutrient/
41) According to the FDA: "Fluoride, when used in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or animal, **is a drug** that is subject to Food and Drug Administration (FDA) regulation." See: www.fluoridealert.org/researchers/fda/drug/
42) In Germany, for example, "the argumentation of the Federal Ministry of Health against a general permission of fluoridation of drinking water is the **problematic nature of compulsion medication**." See this and other statements from European authorities at: www.fluoridealert.org/content/europe-statements/.
43) Under the principle of "informed consent," the patient has the "right to self decision." See: *AMA Ethical Opinion 8.08*. While the doctor has an "obligation . . . to present the medical facts accurately to the patient," it is the patient (or the patient's caregiver) who has the sole right to decide what medical treatments to use.

NOTES FOR FACT 9: SWALLOWING FLUORIDE PROVIDES LITTLE BENEFIT TO TEETH

44) Fejerskov O. (2004). Caries Research 38:184 ("The hypothesis was that increased intake of fluoride during tooth formation raises the fluoride concentration in enamel and hence increases acid resistance. As a consequence fluoride had to be taken systemically and artificial fluoridation of drinking waters became the 'optimal' solution.").
45) For an extensive compilation of quotes from dental researchers discussing this consensus, see: www.fluoridealert.org/studies/caries04/
46) According to the CDC, "fluoride prevents dental caries predominately after eruption of the tooth into the mouth, and its actions primarily are **topical** for both adults and children." Centers for Disease Control (1999). Morbidity and Mortality Weekly Report 48: 933-40.

47) In Maryland, 84% of dentists do not accept Medicaid patients. Similar rates exist in other states, including Alabama (82%), Colorado (79%), and Ohio (72%). As a result, most low-income children are not able to receive treatment from a dentist. See data and reports at: www.fluoridealert.org/content/dental-care/
48) See: www.fluoridealert.org/issues/sources/ej/
49) Beltran-Aguilar ED et al. (2005). MMWR Surveillance Summaries 54(3): 1-44. For a discussion of other studies that have found racial disparities in fluorosis rates, see: www.fluoridealert.org/studies/dental_fluorosis02/
50) See: www.fluoridealert.org/issues/ej/statements/
51) For a compilation of reports, see: www.fluoridealert.org/studies/caries07/.
52) See: www.fluoridealert.org/news/cincinnatis-dental-crisis/
53) Allowing access to dental therapists represents an important strategy for expanding dental care services to underserved populations. Dental therapists are specially trained to provide dental care, such as tooth cleanings and fillings. According to a recent review, "the quality of technical care provided by dental therapists (within their scope of competency) was comparable to that of a dentist, and in some studies was judged to be superior." Nash D, et al. (2012). *A Review of the Global Literature on Dental Therapists*. W.K. Kellogg Foundation. p. 6. Despite these findings, dental trade associations (such as the American Dental Association) are vigorously lobbying against efforts to allow dental therapists to serve underprivileged populations. See: Levine D. (2011). *Why Are Dentists Opposing Expanded Dental Care?* Available at: www.governing.com/topics/health-human-services/gov-why-are-dentists-opposing-expanded-dental-care.html
54) Ismail AI, et al. (2006). Severity of dental caries among African American children in Detroit. Presentation at ADEA/AADR/CADR Conference, March 11. Abstract available at: http://iadr.confex.com/iadr/2006Orld/techprogram/abstract_73168.htm
55) Albert DA, et al. (2002). *Dental caries among disadvantaged 3- to 4-year-old children in northern Manhattan.* Pediatric Dentistry 24:229-33.
56) Bridge to Healthy Smiles. Cook County Oral Health Crisis. Available at: http://www.bridgetohealthysmiles.com/ISDSBrochure.pdf
57) Bexar County Head Start Dental Screenings Program. See data at: www.fluoridealert.org/uploads/san_antonio_caries.pdf
58) Centers for Disease Control. (1999). Behavioral Risk factor Surveillance System. Data summarized at: http://drc.hhs.gov/report/4_3.htm
59) For a discussion of these tragic outcomes, see: Carrie Gann, *Man Dies from Toothache, Couldn't Afford Meds*, ABC News, Sept. 11, 2011, and Laura Owings, *Toothache Leads to Boy's Death*, ABC News, March 5, 2007.

STATEMENTS ON FLUORIDATION FROM CIVIL RIGHTS LEADERS

"I am most deeply concerned for poor families who have babies: if they cannot afford unfluoridated water for their babies' milk formula, do their babies not count? Of course they do. This is an issue of fairness, civil rights, and compassion. We must find better ways to prevent cavities, such as helping those most at risk for cavities obtain access to the services of a dentist."

-Andrew Young

"I support the holdings of Fluoridegate hearings so we can learn why we haven't been openly told that fluorides build up in the body over time, why our government agencies haven't told the black community openly that fluorides disproportionately harm black Americans, and why we've been told that decades of extensive research show fluoridation to be safe, when the National Research Council in 2006 listed volumes of basic research that has never been done."

-Rev. Gerald Durley

"This is a civil rights issue. No one should be subjected to drinking fluoride in their water, especially sensitive groups like kidney patients and diabetics, babies in their milk formula, or poor families that cannot afford to purchase unfluoridated water. Black and Latino families are being disproportionately harmed."

-Alveda King