

Water Fluoridation Benefits

VS.

Claims Made by Those Opposed to Water Fluoridation

Oral Health Florida General Membership
Presentation on Community Water Fluoridation
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Prepared by:

Johnny Johnson, Jr., DMD, MS
Pediatric Dentist
Diplomate, American Board of Pediatric Dentistry
Palm Harbor (Pinellas County), FL

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BENEFITS of Optimally Fluoridated Water:

Optimally fluoridated water (fluoridated) is:

1. **Safe:** It causes no adverse health effects in anyone at optimal levels.
2. **Effective:** It provides 25% or greater cavity reductions over a person's lifetime simply by drinking the water. It requires no change in a person's behavior to impart its benefits.
3. **Cost Saving:** It's cheap and cost effective. For every \$1 spent on water fluoridation, \$38 in dental treatment costs are avoided.
4. Most important of all, fluoridated water reduces not only the **number and severity of cavities** that a person will get, but it allows them to experience **less pain and suffering** from those cavities.
5. **It is legal.** No court of last resort in the U.S. has ever found fluoridation to be unlawful.

Most recent court decision dismissed:

Foli v. Metropolitan Water District of Southern California

<http://fluidlaw.org/caselaw/foli-v-metropolitan-water-district-southern-california>

Charges were:

- Mass medication using an Unapproved Drug, hydrofluorosilicic acid, via the water system to deliver it
- Violation of Constitutional Rights and Private Rights
- Violation of Informed Consent
- Violation of Safe Water Drinking Act

Abstract:

Plaintiffs brought a claim challenging the addition of HFSA to the water supply under 42 U.S.C. § 1983 and the California Business & Professions Code for declaratory and injunctive relief. The court held that § 1983 and the California Business & Professions Code cannot be used as a means to enforce the Food, Drug and Cosmetic Act, noting that the FDCA does not provide for a private right of action. The Plaintiffs alleged the claims of unlawful business practice, unfair business competition, and fraudulent business practice under the California Business & Professions Code. Specifically, the court noted that the Plaintiff cannot pursue their FDCA claim by "recasting the action as one for unfair competition." The court dismissed the complaint without prejudice.

CURRENT ANTI-FLUORIDATION TACTICS:

"Current anti-fluoridation tactics have focused on additives used to fluoridate water supplies. There is no credible evidence to support the notion that the additives are unsafe. In the past, tactics have focused on studies that purported to show that fluoridation was linked to cancer and myriad other health problems.⁴⁸ However, such assertions were based on improper science, and numerous subsequent studies found no association between fluoridation and cancer.⁵⁸"

Water Fluoridation and the Environment: Current Perspective in the United States, *Pollick, Howard F., Int J Occup Environ Health, 2004;10:343–350*

<http://www.cdc.gov/fluoridation/pdf/pollick.pdf>

Additional References:

When public action undermines public health: A critical examination of antifluoridationist literature, *Armfield, Jason M., Aust New Zealand Health Policy 2007; 4: 25*

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2222595/>

The Anti-Fluoridationist Threat to Public Health, *Dodes, J. E., Easley, M.W., Institute for Science in Medicine, White Paper, April 2012*

<http://www.scienceinmedicine.org/policy/papers/AntiFluoridationist.pdf>

Statements From Ten Leading Health Authorities Regarding Community Water Fluoridation:

American Dental Association (ADA)

“The Association endorses community water fluoridation as a safe, beneficial and cost-effective public health measure for preventing dental caries. This support has been the Association’s policy since 1950.”

--ADA Operational Policies and Recommendations Regarding Community Water Fluoridation (Trans.1997:673).

Centers for Disease Control and Prevention (CDC)

“During the 20th century, the health and life expectancy of persons residing in the United States improved dramatically. To highlight these advances, MMWR will profile 10 public health achievements in a series of reports published through December 1999 (Fluoridation of drinking water was chosen as one of these achievements and profiled in the October 22, 1999 MMWR). Fluoridation safely and inexpensively benefits both children and adults by effectively preventing tooth decay, regardless of socioeconomic status or access to care. Fluoridation has played an important role in the reductions in tooth decay (40%-70% in children) and of tooth loss in adults (40%-60%).”

--CDC, Morbidity and Mortality Weekly Report. “Ten Great Public Health Achievements-United States 1900-1999” April 1999.

American Medical Association (AMA)

“The AMA recognizes the important public health benefits of drinking properly fluoridated water and encourages its member physicians and medical societies to work with local and state health departments, dental societies, and concerned citizens to assure the optimal fluoridation of community drinking water supplies.”

--AMA Letter to the American Dental Association, March 10, 1995.

American Academy of Pediatrics (AAP)

“Water fluoridation is a community-based intervention that optimizes the level of fluoride in drinking water, resulting in preeruptive and posteruptive protection of the teeth. Water fluoridation is a cost-effective means of preventing dental caries, with the lifetime cost per person equaling less than the cost of 1 dental restoration. In short, fluoridated water is the cheapest and most effective way to deliver anticaries benefits to communities.”

--AAP Policy Statement Preventive Oral Health Intervention for Pediatricians. Pediatrics 2008;122:1387-1394

U.S. Surgeon General

“A significant advantage of water fluoridation is that all residents of a community can enjoy its protective benefit – at home, work, school or play – simply by drinking fluoridated water or beverages and foods prepared with it...Water fluoridation is a powerful strategy in our efforts to eliminate differences in health among people and is consistent with my emphasis on the importance of prevention...Fluoridation is the single most effective public health measure to prevent tooth decay and improve oral health over a lifetime, for both children and adults.

While we can be pleased with what has already been accomplished, it is clear that there is much yet to be done. Policymakers, community leaders, private industry, health professionals, the media, and the public should affirm that oral health is essential to general health and well being and take action to make ourselves, our families, and our communities healthier. I join previous Surgeons General in acknowledging the continuing public health role for community water fluoridation in enhancing the oral health of all Americans.”

-- Surgeon General Richard H. Carmona, Statement on Community Water Fluoridation, July 28, 2004. Association of State and Territorial Dental Directors

“The Association of State and Territorial Dental Directors (ASTDD) fully supports and endorses community water fluoridation (maintaining optimal fluoride levels between 0.7 and 1.2 parts per million) in all public water systems throughout the United States.”

--Community Water Fluoridation Policy Statement. Association of State and Territorial Dental Directors (ASTDD) Adopted: April 18, 2009.

American Association of Public Health Dentistry (AAPHD)

“...BE IT RESOLVED THAT THE AMERICAN ASSOCIATION OF PUBLIC HEALTH DENTISTRY:

1. Reaffirms its support for the continuation and expansion of community water fluoridation; and
2. Encourages its members and constituents to be well informed about and to continue to support optimal fluoridation, and to help develop national and regional coalitions in support of fluoridation; and
3. Commends communities and states that are providing access to optimal levels of fluoride in the drinking water and encourages them to continue to fluoridate and to monitor the process, and participate in national monitoring activities;...”

--Adopted by the Assembly of AAPHD members, October 16, 1992. J Pub Health Dent 1993;53(1):59-60.

American Public Health Association (APHA)

“...Therefore be it resolved that APHA—

- Reiterates its strong endorsement and recommendation for the fluoridation of all community water systems as a safe and effective public health measure for the prevention of tooth decay;...”

--APHA Policy Statement: Community Water Fluoridation in the United States (Policy Number 20087) Adopted 10/28/08

National Institute of Dental & Craniofacial Research (NIDCR)

“The National Institute of Dental and Craniofacial Research continues to support water fluoridation as a safe and effective method of preventing tooth decay in people of all ages. Community water fluoridation is a public health effort that benefits millions of Americans. For more than half a century, water fluoridation has helped improve the quality of life in the U.S. through reduced pain and suffering related to tooth decay, reduced tooth loss, reduced time lost from school and work, and less money spent on dental care.”

--NIDCR: Statement on Water Fluoridation, June 2000.

World Health Organization (WHO)

“Most recently, efforts have been made to summarize the extensive database (on fluorides) through systematic reviews. Such reviews conclude that water fluoridation and use of fluoride toothpastes and mouthrinses significantly reduce the prevalence of dental caries. ...Water fluoridation, where technically feasible and culturally acceptable, has substantial advantages in public health...”

--WHO Effective use of fluorides for the prevention of dental caries in the 21st century; the WHO approach.” Community Dentistry and Oral Epidemiology 2004;32:319-21

International Association of Dental Research (IADR)

“The International Association for Dental Research (IADR), considering that dental caries (tooth decay) ranks among the most prevalent chronic diseases worldwide; and recognizing that the consequences of tooth decay include pain, suffering, infection, tooth loss, and the subsequent need for costly restorative treatment; and taking into account that over 50 years of research have clearly demonstrated its efficacy and safety; and noting that numerous national and international health-related organizations endorse fluoridation of water supplies; fully endorses and strongly recommends the practice of water fluoridation for improving the oral health of nations.”

--IADR Policy Statement Fluoridation of Water Supplies (Adopted 1979, Updated 1999).

http://www.ada.org/~media/ADA/Advocacy/Files/fluoridation_statement_ten_authorities.ashx

Fluoridation is Recognized by more than 100 Organizations:

The American Dental Association (ADA) as well as the U.S. Public Health Service, the American Medical Association, the World Health Organization and more than 125 national and international [organizations](#) recognize the public health benefits of water fluoridation.

National and International Organizations That Recognize the Public Health Benefits of Community Water Fluoridation for Preventing Dental Decay

Academy of Dentistry International
Academy of General Dentistry
Academy for Sports Dentistry
Alzheimer's Association
America's Health Insurance Plans
American Academy of Family Physicians
American Academy of Nurse Practitioners
American Academy of Oral and Maxillofacial Pathology
American Academy of Orthopaedic Surgeons
American Academy of Pediatrics
American Academy of Pediatric Dentistry
American Academy of Periodontology
American Academy of Physician Assistants
American Association for Community Dental Programs
American Association for Dental Research
American Association for Health Education
American Association for the Advancement of Science
American Association of Endodontists
American Association of Oral and Maxillofacial Surgeons
American Association of Orthodontists
American Association of Public Health Dentistry
American Association of Women Dentists
American Cancer Society
American College of Dentists
American College of Physicians–American Society of Internal Medicine
American College of Preventive Medicine
American College of Prosthodontists
American Council on Science and Health
American Dental Assistants Association
American Dental Association
American Dental Education Association
American Dental Hygienists' Association
American Dietetic Association
American Federation of Labor and Congress
of Industrial Organizations
American Hospital Association
American Legislative Exchange Council

American Medical Association
American Nurses Association
American Osteopathic Association
American Pharmacists Association
American Public Health Association
American School Health Association
American Society for Clinical Nutrition
American Society for Nutritional Sciences
American Student Dental Association
American Water Works Association
Association for Academic Health Centers
Association of American Medical Colleges
Association of Clinicians for the Underserved
Association of Maternal and Child Health Programs
Association of State and Territorial Dental Directors
Association of State and Territorial Health Officials
Association of State and Territorial Public Health
Nutrition Directors
British Fluoridation Society
Canadian Dental Association
Canadian Dental Hygienists Association
Canadian Medical Association
Canadian Nurses Association
Canadian Paediatric Society
Canadian Public Health Association
Child Welfare League of America
Children's Dental Health Project
Chocolate Manufacturers Association
Consumer Federation of America
Council of State and Territorial Epidemiologists
Delta Dental Plans Association
FDI World Dental Federation
Federation of American Hospitals
Hispanic Dental Association
Indian Dental Association (U.S.A.)
Institute of Medicine
International Association for Dental Research
International Association for Orthodontics
International College of Dentists
March of Dimes Birth Defects Foundation
National Association of Community Health Centers
National Association of County and City Health Officials
National Association of Dental Assistants
National Association of Local Boards of Health
National Association of Social Workers
National Confectioners Association

National Council Against Health Fraud
National Dental Assistants Association
National Dental Association
National Dental Hygienists' Association
National Down Syndrome Congress
National Down Syndrome Society
National Foundation of Dentistry for the Handicapped
National Head Start Association
National Health Law Program
National Healthy Mothers, Healthy Babies Coalition
Oral Health America
Robert Wood Johnson Foundation
Society for Public Health Education
Society of American Indian Dentists
Special Care Dentistry
Academy of Dentistry for Persons with Disabilities
American Association of Hospital Dentists
American Society for Geriatric Dentistry
The Children's Health Fund
The Dental Health Foundation (of California)
U.S. Department of Defense
U.S. Department of Veterans Affairs
U.S. Public Health Service
Health Resources and Services Administration (HRSA)
Centers for Disease Control and Prevention (CDC)
National Institute of Dental and Craniofacial Research (NIDCR)
World Federation of Orthodontists
World Health Organization

ADA Fluoridation Facts Compendium.

<http://ada.org/4051.aspx>

ADA FLUORIDATION FACTS:

One of the most widely respected sources for information regarding fluoridation and fluoride is the American Dental Association. A copy of this valuable resource has been distributed to each of you. The 3 main additions to this resource that is being included in the soon to be released update will be:

- Fluoride Will Not Be Added to the List of Known Carcinogens California Proposition 65 Ruling
- Community Water Fluoridation and IQ, September 2011
- New Recommendations for Optimally Fluoridated Water to be set at 0.7ppm

http://www.ada.org/~media/ADA/Member%20Center/Files/fluoridation_facts.ashx

COMMUNITY PREVENTIVE SERVICES TASKFORCE

1. What is the Community Preventive Services Task Force's purpose?

The Community Preventive Services Task Force (Task Force) was established in 1996 by the U.S. Department of Health and Human Services to identify population health interventions that are scientifically proven to save lives, increase lifespan, and improve quality of life. The Task Force produces recommendations (and identifies evidence gaps) to help inform the decision making of federal, state, and local health departments, other government agencies, communities, healthcare providers, employers, schools and research organizations.

2. Community Preventive Services Task Force Members:

- a. The Community Preventive Services Task Force (Task Force) is an independent, nonfederal, unpaid panel of public health and prevention experts that provides evidence-based findings and recommendations about community preventive services, programs, and policies to improve health. Its members represent a broad range of research, practice, and policy expertise in community preventive services, public health, health promotion, and disease prevention.
- b. The fifteen Task Force members are appointed by the Director of the Centers for Disease Control and Prevention (CDC). Task Force members serve five year terms, with possible extensions to maintain a full scope of expertise, complete specific work, and ensure consistency of Task Force recommendations.

3. Task Force Findings:

The Community Preventive Services Task Force **Recommends:**

- i. Community water fluoridation based on *strong evidence* of effectiveness in reducing dental cavities across populations.
- ii. Evidence shows the prevalence of cavities is *substantially lower* in communities with CWF.
- iii. In addition, **there is no evidence that CWF results in severe dental fluorosis.**
<http://www.thecommunityguide.org/oral/fluoridation.html>

10 Reasons to Fluoridate Public Water

- 1. Single most effective public health measure to prevent tooth decay.** The Centers for Disease Control and Prevention (CDC) has proclaimed community water fluoridation one of 10 great public health achievements of the 20th century.
Centers for Disease Control and Prevention. “Ten Great Public Health Achievements – United States, 1990-1999.” *MMWR* 1999;48(12):241-3.
- 2. Natural.** Fluoride is already present in all water sources, even the oceans. Water fluoridation is simply the adjustment of fluoride that occurs naturally in water to a recommended level for preventing tooth decay.
- 3. Similar to fortifying other foods and beverages.** Water that has been fluoridated is similar to fortifying salt with iodine, milk with vitamin D, orange juice with calcium and bread with folic acid.
- 4. Prevents dental disease.** It is the most efficient way to prevent one of the most common childhood diseases – dental decay. *An estimated 51 million school hours are lost each year due to dental-related illness.*
Gift, H.C. “Oral Health Outcomes Research: Challenges and Opportunities.” In Slade, G.D., ed., *Measuring Oral Health and Quality of Life*. Chapel Hill, NC: Department of Dental Ecology, University of North Carolina 1997;25-46.
- 5. Protects all ages against cavities.** Studies show that community water fluoridation prevents at least 25 percent of tooth decay in children and adults, even in an era with widespread availability of fluoride from other sources, such as fluoride toothpaste.
*Griffin S.O., et al. “Effectiveness of Fluoride in Preventing Caries in Adults.” *J Dent Res* 2007;86(5):410-415.
** Task Force on Community Preventive Services. “Promoting Oral Health: Interventions for Preventing Dental Caries, Oral and Pharyngeal Cancers, and Sports-related Craniofacial Injuries: A Report on Recommendations of the Task Force on Community Preventive Services.” *MMWR* 001;50(RR21):1-13. View information at thecommunityguide.org/oral/fluoridation.html and cdc.gov/mmwr/preview/mmwrhtml/rr5021a1.htm
- 6. Safe and effective.** For more than 70 years, the best available scientific evidence consistently indicates that community water fluoridation is safe and effective.
- 7. Saves money.** The average lifetime cost per person to fluoridate a water supply is less than the cost of one dental filling. For most cities, every \$1 invested in water fluoridation saves \$38 in dental treatment costs.
Griffin S.O., Jones, K., Tomar, S.L. “An Economic Evaluation of Community Water Fluoridation.” *J Public Health Dent* 2001;61(2):78-86.
- 8. Recognized by more than 100 organizations** The American Dental Association (ADA) as well as the U.S. Public Health Service, the American Medical Association, the World

Health Organization and more than 125 national and international organizations recognize the public health benefits of water fluoridation.

ADA Fluoridation Facts Compendium. Available at <http://ada.org/4051.aspx>

9. Availability of fluoridation continues to grow. In the United States as of 2012, 74.6 percent of the population on public water systems receive fluoridated public water, or a total of over 210 million people.* This is an increase of over 14% from 2000. The Healthy People 2020 goal is for 79.6 percent of the population on public water systems to have access to fluoridated water.**

*CDC Reference Statistics on Water Fluoridation Status,

<http://www.cdc.gov/fluoridation/statistics/2012stats.htm>

**Healthy People 2020,

<http://www.healthypeople.gov/2020/topics-objectives/topic/oral-health/objectives>

10. Endorsed by the American Dental Association. One of the most widely respected sources for information regarding fluoridation and fluoride is the American Dental Association. Learn more on the ADA's website at [ADA.org/fluoride](http://ada.org/fluoride).

<http://www.ada.org/4051.aspx>

Fluorosis:

Dental

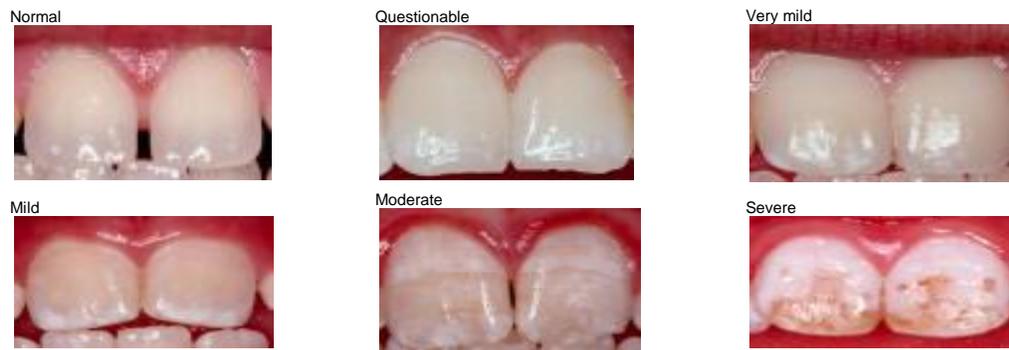
Dental fluorosis is cosmetic change in the surface enamel of the tooth. It appears most commonly as faint white streaks or spots that are typically only visible to the dental team once the teeth have been air dried in the dental chair. Dental fluorosis does not affect the function of the teeth. In fact, teeth that appear whiter in appearance have been shown to improve the quality of life of those with it, as whiter appearing teeth is a desirable trait in our society. Additionally, study results have suggested that teeth with very mild to mild fluorosis are more cavity resistant.

Dental fluorosis is seen in both fluoridated and non-fluoridated communities. The fluorosis is present *primarily* because of infants and children *swallowing fluoridated toothpaste* up to the age of 8 years old while their permanent teeth are developing. There is a slight increase in fluorosis in communities which fluoridate.

This is an extremely important point to understand. Even **WITHOUT** water fluoridation, fluorosis can be seen because of its presence in our diets, but primarily because of toothpaste being swallowed by children under 8 years old.

Several points are important to understand about fluorosis in the US:

1. Fluorosis that is visible in this country is almost entirely of the type "very mild" or "mild". This type of fluorosis is visible to dental professionals when the teeth have been thoroughly air dried. It is essentially not visible to the casual observer. See the pictures of all types of fluorosis at the following CDC website:



http://www.cdc.gov/fluoridation/safety/dental_fluorosis.htm

2. Fluorosis does not degrade the health of a tooth. In fact, studies have shown that teeth with fluorosis are more resistant to cavities:

“Conclusion: This study’s findings suggest that molars with fluorosis are more resistant to caries than are molars without fluorosis.” Iida, Hiroko, Kumar, Jayanth V., The Journal of the American Dental Association, July 2009 vol. 140 no. 7, 855-862

[http://jada.ada.org/article/S0002-8177\(14\)64471-8/abstract](http://jada.ada.org/article/S0002-8177(14)64471-8/abstract)

3. **Severe fluorosis**, as seen above and on the next page, is **virtually 0%** when fluoride in water, added or naturally occurring, is **below 2.0ppm**. See page 114 of the document “Fluoride in Drinking Water: A Scientific Review of the EPA Standards”

“The prevalence of severe enamel fluorosis is close to zero in communities at all water fluoride concentrations below 2.0 mg/L.”

Severe



Severe Fluorosis is virtually non-existent in the United States

http://www.nap.edu/openbook.php?record_id=11571&page=114

Skeletal Fluorosis in United States

"Crippling skeletal fluorosis continues to be extremely rare in the United States (only 5 cases have been confirmed during the last 35 years), even though for many generations there have been communities with drinking water fluoride concentrations in excess of those that have resulted in the condition in other countries."

Reference:

Fluoride in Drinking Water: A Scientific Review of EPA's Standards, Committee on Fluoride in Drinking Water, National Research Council

ISBN: 0-309-65796-2, 530 pages, 6 x 9, (2006)

This PDF is available from the National Academies Press at:
<http://www.nap.edu/catalog/11571.html>

Antifluoridationists' Claim that 60% of 12-15 year olds are afflicted with fluorosis:

Antifluoridationists claim that the Centers for Disease Control reports that 60% of 12-15 year-olds are afflicted with fluoride overdose symptoms – dental fluorosis, white spotted, yellow, brown and/or pitted teeth. Yet, tooth decay crises are occurring in all fluoridated cities, states and countries.

<https://profile.theguardian.com/user/id/1370893>

This is a complete misrepresentation of the data:

The data that this information is actually “pulled” from is the CDC NCHS Data Brief. The link can be found below. It is a report that looked at fluorosis in fluoridated and non-fluoridated communities.

To clarify the true facts of this data, the following accurate interpretation of the data is:

- A. 40.7%, NOT 60%, of adolescents aged 12-15 had dental fluorosis.
- B. More than 96% had were either unaffected, or had questionable, very mild, or mild fluorosis.
- C. In people having fluorosis of the very mild or mild types, the appearance of the white flecks or streaks are typically only noticeable by dental professionals after the teeth have been thoroughly dried.
- D. Less than 1% of all subjects of this study ranging in age from 6-49 years old had the severe form of fluorosis.



Along this same exaggerated set of claims, **antifluoridationist's claim that dentists make money by repairing the damage done by severe fluorosis** by performing cosmetic dental procedures. Given the fact that only severe dental fluorosis would require the extensive dental care that they claim, and understanding the fact that **Severe Dental Fluorosis is virtually non-existent in the U.S.** as it only occurs when the concentration of fluoride in the water exceeds 2.0ppm, the falseness of this claim is immediately obvious.

<http://www.cdc.gov/nchs/data/databriefs/db53.htm>

Fluoridation Additives Used in Fluoridation of Water

Antifluoridationist's make a variety of claims against the most common AWWA approved fluoridation additives. Claims that they aren't "natural", contain harmful impurities, or that they've never been tested for safety in humans are just a few of their charges.

FACTS:

Hydrofluorosilicic Acid (FSA or HFS) use as the source for fluoridating water:

There is absolutely NO question regarding the safety or purity of this product according to the CDC. Two excerpts followed by the link to the CDC website on this topic follow:

1. "Since the early 1950s, FSA has been the chief additive used for water fluoridation in the United States. The favorable cost and high purity of FSA make it a popular source."
2. "Consumers sometimes raise concerns about arsenic in drinking water and the fact that fluoride additives may contain some arsenic. The EPA allowable criterion for arsenic consumption in drinking water is 10 parts per billion. NSF quality testing has found that most fluoride additive samples do not have detectable levels of arsenic. For those samples that do test positive, the arsenic level that an average consumer would experience over an entire year of drinking water at a maximum dosage of 1.2 mg/L fluoride would only be about 1.2% of the EPA allowable amount."

Reference:

Engineering: Water Fluoridation Additives Fact Sheet

On this page:

- Types of Fluoride Additives
- Sources of Fluoride Additives
- Regulatory Scope on Additives
- EPA Regulatory Criteria for Fluoride Additives
- AWWA Standards
- NSF/ANSI Standards for Drinking Water Additives
- Measured Levels of Impurities
- FDA Regulatory Criteria for Fluoride
- United States Pharmacopeia (USP) Grade Fluoride Products
- Fluoride Additives Are Not Different From Natural Fluoride

<http://www.cdc.gov/fluoridation/factsheets/engineering/wfadditives.htm>

The following Information is from an email to me from Kip Duchon, National Fluoridation Engineer, when I asked him to address specific claims made by the opposition to fluoridation:

Kip Duchon, National Fluoridation Engineer, CDC, 11-26-12

1. *Antifluoridationists' Claim:* Fluorosilicates are not natural.

CDC Response to Antifluoridationists' Claim: This is a fascinating argument to me for fluoride is the 13th most abundant element in the earth's crust and is overwhelmingly in the form of either fluorosilicate or calcium fluoride. It is in the calcium fluoride form when it water deposited in geological formations, and it is in fluorosilicate form when it is in the crystalline structure of the rock. When you consider that geologists estimate that most rocks in the earth's crust are igneous (estimates as high as over 90%), fluorosilicates would likely dominate the natural occurrence. Remember that by definition granites are minimum 20% silica content, so there is some portion of silica in association with fluoride.

2. *Antifluoridationists' Claim:* Fluorosilicates have never been tested for safety in humans.

CDC Response to Antifluoridationists' Claim: Experts in inorganic aquatic chemistry at the US Environmental Protection Agency have studied ionic speciation of fluorosilicates and have concluded that at the pH and fluoride concentration of potable water, fluorosilicates would completely dissolved to fluoride and silica. Researchers at the University of Michigan attempted to verify those theoretical predictions of ionic speciation and were unable to detect any residual fluorosilicates at pH over 4.8, and considering that drinking water are adjusted to minimize potential corrosion of metal pipes to pH over 7, and typically over 8, persistence of fluorosilicates cannot occur.

3. *Antifluoridationists' Claim:* Fluorosilicates have never been tested for safety in humans.

CDC Response to Antifluoridationists' Claim: When you consider that fluorosilicates do not exist at the pH in drinking water, it impossible to measure the health effects since you cannot measure the health effects of something that cannot be consumed by people.

4. *Antifluoridationists' Claim:* Fluoride products have contamination including Arsenic.

CDC Response to Antifluoridationists' Claim: In the CDC Fact Sheet there is a link the NSF website and a Fact Sheet published by NSF on the actual measured level of impurities. All water additives have some level of impurities since reagent grade products are never necessary for water processing, but Standard 60 specifies allowable levels of impurities based on EPA criteria. What is remarkable is that NSF conducts regular verification testing of fluoride products for the Standard 60 certification and has never measured any fluoride products that exceed the allowable impurity levels with respect to EPA allowable levels. The majority of product testing does not even measure detectable levels of Arsenic.

Additional References:

Water Fluoridation and the Environment: Current Perspective in the United States

Pollick, Howard F., Int J Occup Environ Health, 2004;10:343–350

“Fate of Fluorosilicate Drinking Water Additives”, *Urbansky, Edward T., Chem. Rev. 2002, 102, 2837-2854*

“Can Fluoridation Affect Lead(II) in Potable Water? Hexafluorosilicate and Fluoride Equilibria in Aqueous Solution”, *Urbansky, Edward T., and Schock, Michael R., Intern. J. Environ.Studies, 2000, Vol. 57, pp. 597-637*

“The Manufacture of the Fluoride Chemicals”: Reeves, Thomas G., P.E., September 2000, National Fluoridation Engineer, Program Services Branch, Division of Oral Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention

Claim: Manufacturers will not state that Hydrofluorosilicic Acid (HFS) is safe for human consumption:

The following is an email that I received from Chris Fleming of the Dumont Chemicals Company. The question I posed was whether their product is safe for human consumption.

This question stems from the frequent claim by those who oppose water fluoridation that hydrofluorosilicic acid is unsafe for human consumption. This question is a twist on reality as no one in their right minds would consume a concentrated product of any sort. The question is intended to frighten the public into thinking that HFS isn't approved for consumption, when in fact it is what it becomes in water: Hydrogen ions, Fluoride ions, water, and silica (sand)

Chris Fleming <chris@dumontchemicals.com> Fri, Feb 21, 2014 at 9:06 AM
To: "Dr. Johnny Johnson" <drjohnnyjohnson@gmail.com>
Dr. Johnson,

As for your question if our Fluoride is safe to drink. Dumont's HFS 23000 Fluoride is certified by Underwriting Laboratories (UL) to be NSF/ANSI 60 and AWWA approved for drinking water. That means it is safe to put in drinking water and if it is safe to put in drinking water then it would be safe to drink.

Dumont also has other products that have this same certification from UL that are used all across the State of Florida. These other products are Sodium Hydroxide 25% (SH 2500) and (50% SH 5000), all of our ClearFlow Corrosion Inhibitor products and Ammonium Sulfate 40% (AS4000). I have attached our list to this email.

I hope that this information is helpful to you. If you have any questions please let me know.

Thanks,

Chris Fleming | Technical Support Administrator
381 South Central Avenue | Oviedo, FL 32765
Mobile: [407.923.3101](tel:407.923.3101) | Office: [800.330.1369](tel:800.330.1369) | Fax: [800.524.9315](tel:800.524.9315)
Chrisf@dumontchemicals.com | <http://www.dumontchemicals.com>
From: Dr. Johnny Johnson [<mailto:drjohnnyjohnson@gmail.com>]
Sent: Friday, February 14, 2014 6:03 AM

Antifluoridationists' Claim: Pharmaceutical Grade Fluoride should be used instead the additives currently approved for use.

United States Pharmacopeia (USP) Grade Fluoride Products

Some have suggested that pharmaceutical grade fluoride additives should be used for water fluoridation. **Pharmaceutical grading standards used in formulating prescription drugs are not appropriate for water fluoridation additives. If applied, those standards could actually exceed the amount of impurities allowed by AWWA and NSF/ANSI in drinking water.**

The U.S. Pharmacopeia-National Formulary (USP-NF) publishes monographs on tests and acceptance criteria for substances and ingredients by manufacturers for pharmaceuticals. The USP 29 NF-24 monograph on sodium fluoride provides no independent monitoring or quality assurance testing. The USP does not include acceptance criteria for fluorosilicic acid or sodium fluorosilicate. As a result, the manufacturer is responsible for quality assurance and reporting.

The USP does not provide specific protection levels for individual contaminants, but establishes a relative maximum exposure level for a group of related contaminants. Some potential impurities have no restrictions by the USP, including arsenic, some heavy metals regulated by the U.S. EPA, and radionuclides.

Given the volumes of chemicals used in water fluoridation, a pharmaceutical grade of sodium fluoride for fluoridation could potentially contain much higher levels of arsenic, radionuclides, and regulated heavy metals than an NSF/ANSI Standard 60-certified product. The USP does not provide specific protection levels for individual contaminants, but tries to establish a relative maximum exposure level of a group of related contaminants. The USP does not include acceptance criteria for fluorosilicic acid or sodium fluorosilicate.

In addition, AWWA-grade sodium fluoride is preferred over USP-grade sodium fluoride for use in water treatment facilities because the granular AWWA product is less likely to result in exposure to fluoride dust by water plant operators than the more powder-like USP-grade sodium fluoride.

<http://www.cdc.gov/fluoridation/factsheets/engineering/wfadditives.htm>

HARVARD STUDY: IQ

Antifluoridationist's Claim: The Harvard "Study" proves that community water fluoridation (CWF) can lead to IQ decreases in our children

A Harvard Research team led by Anna Choi and Philippe Grandjean performed a Meta-analysis on studies done primarily in China on natural levels of fluoride in the water and any possible relationship to the children's IQ. 27 studies were reviewed, 25 of which were done in China. *The HIGH fluoride group was exposed to water 10x the concentration of that in the US. The CONTROL groups were exposed to water up to 0.8ppm.*

The studies themselves were of poor quality, and had serious methodological flaws. Confounders known to cause IQ deficits, like Arsenic, were not always measured in those studies. Additionally, some studies were skewed by the fluoride in the air that was released by coal burned that contained a high content of fluoride. Additionally, Chinese families drink Black brick tea which is very high in fluoride content.

"Developmental Fluoride Neurotoxicity: A Systematic Review and Meta-Analysis."

<http://ehp.niehs.nih.gov/1104912/>

The Choi et al paper acknowledges the reporting and methodological deficiencies of many of the studies reviewed. Furthermore, two of the authors of the Choi review – Choi and Grandjean – issued a post-publication press statement in which they said: *"These results do not allow us to make any judgment regarding possible levels of risk at levels of exposure typical for water fluoridation in the U.S."*

"While the studies the Harvard team reviewed did indicate that very high levels of fluoride could be linked to lower IQs among schoolchildren, the data is not particularly applicable here because it came from foreign sources where fluoride levels are multiple times higher than they are in American tap water."

"Harvard Scientists: Data on fluoride, IQ, not applicable in U.S." *The Wichita Eagle, Don Lefler, Sept. 11, 2012*

Several credible scientific groups have analyzed the data that Choi and Grandjean have published. *Given that the Meta-analysis was performed on poorly designed Chinese studies, and that severe flaws existed within the methodologies of these studies, the results actually confirm that fluoride levels that the children ingested in their Control Group, ~0.8ppm, had normal IQ's. This is in the range of fluoridation of community water in the U.S. and other countries.* In fact, the optimal level of fluoride in China is 0.5ppm because of the heat, lack of widespread climate control, and the extensive work that occurs by workers outside.

Additionally, the use of this Harvard Meta-analysis by anti-fluoridationists not only led to Choi and Grandjean distancing themselves from them, it also led to the Deans of the Harvard Medical School, Harvard School of Public Health, and the Harvard School of Dentistry to write a letter of continued support of CWF:

“As Deans of Harvard Medical School, Harvard School of Dental Medicine and the Harvard School of Public Health, we continue to support community water fluoridation as an effective and safe public health measure for people of all ages.

Numerous reputable studies over the years have consistently demonstrated that community water fluoridation is safe, effective, and practical. Fluoridation has made an enormous impact on improving the oral health of the American people.

Our country is fortunate to have over 204 million Americans living in fluoridated communities and having access to the health and economic benefits of this vital public health measure.”

<http://www.ilikemyteeth.org/wp-content/uploads/2013/05/Harvard-Med-Dental-School-Deans-March-2013.pdf>

KIDNEY DISEASE & FLUORIDATION:

Antifluoridationists claim: CWF causes harm to people with kidney disease

FACT: No credible scientific literature supports this claim

Fluoride Intake and Chronic Kidney Disease

New information on fluoride intake and chronic kidney disease is available from the National Kidney Foundation and Kidney Health Australia.

National Kidney Foundation

On its newly revised Fluoride Web page, NKF notes, “The benefits of water and dental products containing fluoride is the prevention of tooth decay and dental cavities in people of all ages.” In discussing potential health risks NKF states, “The risk is likely greatest in areas with naturally high water fluoride levels.” Due to the limited available research on the topic, NKF has not issued specific recommendations regarding fluoride intake and kidney disease and currently has *no official position on the optimal fluoridation of water*. NKF recommends that “Dietary advice for patients with CKD should primarily focus on established recommendations for sodium, potassium, calcium, phosphorus, energy/calorie, protein, fat, and carbohydrate intake. Fluoride intake is a secondary concern.”

<http://www.kidney.org/atoz/content/fluoride.cfm>

Kidney Health Australia

In a position statement issued in March 2007, Kidney Health Australia concluded:

1. *There is no evidence* that consumption of optimally fluoridated drinking water increases the risk of developing CKD, although only limited studies addressing this issue are available; and
2. *There is no evidence* that the consumption of optimally fluoridated drinking water poses any risks for people with CKD, although only limited studies addressing this issue are available.

<http://www.kidney.org.au//LinkClick.aspx?fileticket=4oSJlfzkbkZ0%3d&tabid=635&mid=1590>

For more information: <http://www.ada.org/4383.aspx>

DIABETES & FLUORIDATION:

Antifluoridationist's claim that the “National Institute of Diabetes has stated that diabetics and other consumers of large quantities of water should drink bottled water.”

This is **incorrect** per the latest information from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).

Any dental or medical professional understands the importance of optimal health and prevention for our patients with diabetes. Their ability to fight infection is compromised, as is their exaggerated response to an infection. It is therefore paramount that these patients receive the optimal benefits of prevention that is available to them.

In a booklet dated February 2012, entitled “Prevent Diabetes Problems: Keep your mouth healthy”, the topic of fluorides, both topical and systemic, are discussed.

This booklet, specifically on page 12, specifically states:

“Drink water that contains added fluoride or ask your dentist about using a fluoride mouthrinse to prevent tooth decay.”

http://diabetes.niddk.nih.gov/dm/pubs/complications_teeth/

Further, many people are unclear about **the fluoride content of bottled water**. The **opposition** to fluoridation claims that fluoride is removed from bottled water, or that it doesn't contain it. This is also **incorrect**.

The fluoride content of bottled water can vary from none to almost twice the level of optimally fluoridated water. This depends solely on where it's produced. The FDA does not require that this information be put on the label of this food product. As such, the opposition's claim that diabetics should drink bottled water is further founded in incorrect information.

Information on Bottled Water Quality Reports can be found here:

<http://www.bottledwater.org/health/fluoride>

Fluoride in Drinking Water: A Scientific Review of EPA's Standards, Committee on Fluoride in Drinking Water, National Research Council, 2006

The opposition to fluoridated water will often cite the periodic review of the EPA's Standards on fluoride contaminant level in drinking water to portend that they apply to optimally fluoridated water.

This is completely incorrect.

This Scientific Review was done to review the standards that the EPA sets for maximum contaminant levels in drinking water. This review is completed on a regular interval.

The scope of this study **WAS NOT** to be a study on optimally fluoridated water. This is stated clearly on pp 20-21, starting with the last paragraph on page 20:

“The committee is aware that some readers expect this report to make a determination about whether public drinking-water supplies should be fluoridated. That expectation goes beyond the committee's charge. As noted above, the MCLG and SMCL are guidelines for areas where fluoride concentrations are naturally high.”

http://www.nap.edu/openbook.php?record_id=11571&page=20

The 2006 NRC Report, "Fluoride in Drinking Water: A Scientific Review of EPA's Standards", was conducted to review the EPA's standards for fluoride concentrations found **NATURALLY** occurring in water supplies. Specifically, naturally occurring in water **ABOVE 4ppm fluoride content**, not the concentration of optimally fluoridated water.

<http://www.nap.edu/catalog/11571.html>

This group's charge was to look at the EPA's recommendations and evaluate the levels of fluoride that the EPA considered to be the maximum concentration allowed for teeth to remain healthy.

The NRC Report's conclusions **did not** raise serious health concerns for community water fluoridation levels that are considered optimal for dental health. In other words, community water fluoridation at the previous recommendations of 0.7-1.2ppm, and new recommendation of 0.7ppm, did not reveal any health concerns in their conclusions. At levels which exceeded 4ppm, health concerns were discussed and direction of future areas of studies encouraged.

“The committee did not evaluate the risks or benefits of the lower fluoride concentrations (0.7 to 1.2 mg/L) used in water fluoridation. Therefore, the committee's conclusions regarding the potential for adverse effects from fluoride at 2 to 4 mg/L in drinking water do not apply at the lower water fluoride levels commonly experienced by most U.S. citizens.”

http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/fluoride_brief_final.pdf

CANCER CLAIMS:

The opposition to fluoridation likes to claim that optimally fluoridated water causes osteosarcoma, based on the research by Bassin and others. Her results were based on a subset of patients from a 15 year ongoing research project at Harvard University. Her results were published in 2006 for her doctoral dissertation work. The full study results were completed and published in 2011. The conclusions of the full study did not support her partial study findings.

In addition, other studies which have looked at fluoride in the water, whether naturally occurring or through community water fluoridation, have not shown any association between fluoride and osteosarcoma.

1. "Age-specific fluoride exposure in drinking water and osteosarcoma" (United States), Bassin, Elise B., et al, *Cancer Causes Control* (2006) 17:421–428
<http://www.ncbi.nlm.nih.gov/pubmed/16596294>

Bassin reported some age specific relationships between fluoride and osteosarcoma. However, the authors themselves raised a flag of caution in their final paragraph with the note that they are aware of additional findings from other incident cases that appear not to replicate the findings from the cases presented in their paper.

Bassin's study research article was based on a *subset* of patients in a 15 year ongoing study of fluoride and osteosarcoma being conducted at Harvard. When the study was completed, her results *were not* confirmed by the final results of the complete set of data.

Conclusions of completed study:

"No significant association between bone fluoride levels and osteosarcoma risk was detected in our case-control study, based on controls with other tumor diagnoses."

Kim, F.M., et al, *J Dent Res*. 2011 October; 90(10): 1171–1176

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3173011/>

2. "Recently, researchers examined the possible relationship between fluoride exposure and osteosarcoma in a new way: they measured fluoride concentration in samples of normal bone that were adjacent to a person's tumor. Because fluoride naturally accumulates in bone, this method provides a more accurate measure of cumulative fluoride exposure than relying on the memory of study participants or municipal water treatment records. The analysis showed no difference in bone fluoride levels between people with osteosarcoma and people in a control group who had other malignant bone tumors (7)."

National Cancer Institute, at the National Institutes of Health, Fluoridated Water, Fact Sheet, Feb 02, 2012

<http://www.cancer.gov/cancertopics/factsheet/Risk/fluoridated-water>

3. The latest study findings from Great Britain (2014) are the results from a 25 year study which evaluated fluoride in drinking water. It once again reaffirmed that fluoride in water, either naturally high levels or at levels added through fluoridation, **does not** lead to greater risk of osteosarcoma or Ewing sarcoma:

*"CONCLUSIONS: The findings from this study provide **no evidence** that higher levels of fluoride (whether natural or artificial) in drinking water in GB lead to greater risk of either osteosarcoma or Ewing sarcoma."*

"Is fluoride a risk factor for bone cancer? Small area analysis of osteosarcoma and Ewing sarcoma diagnosed among 0-49-year-olds in Great Britain, 1980-2005" *Blakey, K, et al., Int J Epidemiol. 2014 Jan 14*

<http://www.ncbi.nlm.nih.gov/pubmed/24425828>

THYROID CLAIMS:

The opposition to water fluoridation states that fluoride causes Thyroid Issues. This claim has not been borne out by credible scientific research or reviews.

In a review by the **British Fluoridation Society** (2006), they concluded that:

The available medical and scientific evidence suggests an absence of an association between water fluoridation and thyroid disorders.

Many major reviews of the relevant scientific literature around the world support this conclusion. Of particular importance are:

- An exhaustive review conducted in 1976 by an expert scientific committee of the Royal College of Physicians of England;
- A systematic review in 2000 by the NHS Centre for Reviews and Dissemination at the University of York; and,
- A 2002 review by an international group of experts for the International Programme on Chemical Safety (IPCS), under the joint sponsorship of the World Health Organisation (WHO), the United Nations Environment Programme (UNEP), and the International Labour Organisation (ILO).

None has found any credible evidence of an association between water fluoridation and any disorder of the thyroid.

http://www.bfsweb.org/facts/sof_effects/statementofflo.htm

Note:

An additional reference can be provided from communication between Dr. Janet Silverstein at the University of Florida, Department of Pediatric Endocrinology, which further states no causal relationship between CWF and Thyroid problems. Dr. Silverstein is one of the top Pediatric Endocrinologists in the U.S.

Allergy Claims made against fluoride in water at 1.0ppm

Antifluoridationist's Claim: Some people are allergic to the fluoride in CWF

No credible scientific evidence exists to support allergic reactions to fluoride in CWF.

1. "There is no evidence of any deleterious effect on specific immunity following fluoridation nor any confirmed reports of allergic reactions."

Challombe, SJ, Community Dent Health. 1996 Sep; 13 Suppl 2:69-71

<http://www.ncbi.nlm.nih.gov/pubmed/8897755>

2. "As a result of this review, the members of the Executive Committee of the American Academy of Allergy have adopted unanimously the following statement:

"There is no evidence of allergy or intolerance to fluorides as used in the fluoridation of community water supplies."

American Academy of Allergy, Asthma, and Immunology: pdf available upon request

3. From the "Ask the Expert" section of the American Academy of Allergy, Asthma, and Immunology, an expert replied to a question on allergic reaction to CWF:

"My own opinion is reflected in the first paragraph with the "short answer" of the American Dental Association's thoughts in this regard. That is basically that there is a lack of credible evidence to incriminate fluoride in the water as causing adverse events." (2012)

<http://www.aaaai.org/ask-the-expert/Reactions-to-fluoride.aspx>

PINEAL GLAND CLAIMS:

Antifluoridationist's Claim: A host of ills caused by the fluoride accumulation in the Pineal Gland.

There is no medical or scientific credibility to any of their claims.

Part of the aging process is that the pineal gland accumulates calcium as we age. Just as we don't bounce as well as we did when we were teenagers, we lose our flexibility as we age, and playing a game of touch football might be a near-death experience for some, this is part of aging.

Fluoride, being a reactive halide, is attracted to calcium and goes along for the ride. The fact that fluoride is present with the calcium in the pineal gland has nothing to do with a loss of dreaming capacity or spiritual awareness.

CARDIOVASCULAR CLAIMS:

Antifluoridationist's Claim: Fluoride has been shown to cause cardiovascular disease.

They reference the study listed below to “prove” that fluoride is causing “hardening of the arteries”.

This is a complete FABRICATION. This study was done to determine if active plaques could be identified by means of a sugar uptake with attached Fluoride (^{18}F) in these active plaques. The ^{18}F (fluoride) was along for the ride to be able to let the researchers find out which plaques were actively taking up more sugar than the others. The PET/CT scans would allow them to do this by tracking the ^{18}F .

The conclusion section is where one word, fluoride, was used instead of ^{18}F fluoride, as was used in the rest of the study. The antifluoridationists seized upon this opportunity to lay claim that atherosclerosis was due to fluoride.

“Conclusion: sodium [^{18}F]fluoride PET/CT might be useful in the evaluation of the atherosclerotic process in major arteries, including coronary arteries. An increased fluoride uptake in coronary arteries may be associated with an increased cardiovascular risk.”

“Association of vascular fluoride uptake with vascular calcification and coronary artery disease”,
Li, Yuxin, et al Nuclear Medicine Communications:
January 2012 - Volume 33 - Issue 1 - p 14–20
http://journals.lww.com/nuclearmedicinecomm/Abstract/2012/01000/Association_of_vascular_fluoride_uptake_with.3.aspx

Topical and Systemic Effects of Fluorides:

Antifluoridationist's Claim: The benefits are only from topical exposure to the fluoride, and that NO benefit is gained by swallowing (systemic) it.

FACTS:

This is incorrect.

The following citations provide current evidence that systemic benefits of fluoridation remain important in decay prevention:

Abstract: *Clinical trials, animal studies, and in vitro tests demonstrate effectiveness of exposure to topical (posteruptive) fluoride in caries prevention and reduction of enamel dissolution. However, careful analyses of human epidemiologic data on caries increments, following communal water fluoridation, show unquestionably that fluoride has an important preemptive effect on caries in permanent teeth, particularly on pit and fissure surfaces. These preemptive or systemic benefits also apply to the use of fluoride supplements or fluoridated salt when used continuously during the period of tooth formation. The role of systemic fluoride in caries prevention is neither "minimal" nor "of borderline significance." On the contrary, it is a major factor in preventing pit and fissure caries, the most common site of tooth decay. Maximal caries-preventive effects of water fluoridation are achieved by exposure to optimal fluoride levels both pre- and posteruptively.*

Systemic Benefits of Fluoride and Fluoridation, *Newbrun, Journal of Public Health Dentistry*, Volume 64, Issue Supplement s1, pages 35–39, September 2004

Additional References:

Evidence-Based Clinical Recommendations on the Prescription of Dietary Fluoride Supplements for Caries Prevention, Rozier, Gary R., et al, *JADA* December 2010 vol. 141 no. 12 1480-1489
<http://jada.ada.org/content/141/12/1480.full>

Centers for Disease Control and Prevention. Recommendations for using fluoride to prevent and control dental caries in the United States. *MMWR Recomm Rep* 2001;**50**(RR-14):1–42.
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5014a1.htm>

FLUORIDATION IS ON DECLINE

Antifluoridationists' Claim: the CDC reports that 225 less communities adjusted for fluoride between 2006 and 2008. About 100 US and Canadian communities rejected fluoridation since 2008.

The inference here is that fluoridation is going away. Absolutely FALSE

This is a skewing of the data to confuse the reader. There are many factors that have gone into communities discontinuing fluoridation, among which are costs to small communities in a down economy, the community has appropriate levels of fluoridation naturally under the new HHS proposed recommendations of 0.7ppm, and antifluoridationists on the governing bodies.

However, these claims give the appearance that fluoridation is decreasing in the United States. Nothing could be further from the truth.

| Facts: | Total Population | US population served by fluoridated water | % on CWS with fluoridated water |
|--------|------------------|---|---------------------------------|
| 2006 | 299,398,484 | 184,028,038 | 69.2% |
| 2008 | 304,059,724 | 195,545,109 | 72.4% |
| 2010 | 308,745,538 | 204,283,554 | 73.9% |
| 2012 | 313,914,040 | 210,655,401 | 74.6% |

As can be seen by the above illustration, even with some communities dropping out of the ranks of communities fluoridating their water, again for a variety of reasons, the net result is that the total number of the population as well as the percent of the population on fluoridated water systems continues to increase.

INFANT FORMULA:

Anitfluoridationists' Claim: Infant Formulas are not to be mixed with fluoridated water per the CDC and ADA.

This is completely *FALSE!*

Q&A from the CDC Website:

Can I use optimally fluoridated tap water to mix infant formula?

Yes, you can use fluoridated water for preparing infant formula. However, if your child is exclusively consuming infant formula reconstituted with fluoridated water, there may be an increased chance for mild dental fluorosis. To lessen this chance, parents can use low-fluoride bottled water some of the time to mix infant formula; these bottled waters are labeled as de-ionized, purified, demineralized, or distilled.

http://www.cdc.gov/fluoridation/safety/infant_formula.htm

The recommendations have never been to avoid, or not use, fluoridated water to reconstitute infant formulas. They have always been, and continue to be, to discuss the use fluoridated water to reconstitute infant formula with your dentist or physician. The fact remains that even in the absence of the availability to discuss this with dentists or physicians for some folks, very mild and mild fluorosis are the predominant forms of fluorosis in the U.S.

Additional Resources:

“The fluoride content of infant formulas available in 1985”

Pediatric Dentistry, March 1987, Vol. 9, No. 1, Johnson, J, Bawden, J.W.,

<http://www.aapd.org/assets/1/25/Johnson-09-01.pdf>

“Evidence-Based Clinical Recommendations Regarding Fluoride Intake from Reconstituted Infant Formula and Enamel Fluorosis: A Report of the American Dental Association Council on Scientific Affairs”, Berg, Joel, et al, JADA 2011; 142(1): 79-87

(see box 2)

<http://jada.ada.org/content/142/1/79.full.pdf>

TOOTHPASTE:

Antifluoridationists' Claim: The warning on the back of the tube of toothpaste states “Keep out of reach of children. If more than used for brushing is accidentally swallowed, get medical help or contact a Poison Control Center right away”. This statement is an indictment of fluoride as being a toxic hazardous chemical poison.

The facts accurately quoted by the antifluoridationists stopped within the quotation marks. Everything else is conjecture and science fiction.

Facts:

No one has ever died in the United States from accidental swallowing of toothpaste. No one.

Theoretically, if a child of 40 pounds were to get their hands on 2 adult sized tubes of fluoridated toothpaste and eat both of them, then they could ingest a lethal dose of fluoride. HOWEVER, the soapy foamy product in toothpaste, along with the abrasive component, would cause them to throw up before they could ever get enough down to cause more than a gastric upset.

The back of the tube further states that Supervision is needed. What parent would allow a young child to have 2 full tubes of adult sized toothpaste available to them without paying any attention to what they were doing? Probably the same parents whose kids are ending up at the ER's now having swallowed these new packets of dishwasher detergent that are gushy and look so pretty. I'm certain one look at that container would have a similar warning on it: Watch your kids.

References:

PolitiFact examined the claims that anti-fluoride activists often make about fluoride toothpaste/warning label and found their assertions were mostly false:

<http://www.politifact.com/wisconsin/statements/2012/jul/09/jim-bohl/milwaukee-alderman-says-fluoride-toothpaste-poison/>

Calculating lethal dose of fluoride in toothpaste: **Origin of Toothpaste Warning Label**: Email from Clifford W. Whall, Jr, PhD, Director, Acceptance Program Council on Scientific Affairs, whallc@ada.org

ADA: Fluoride Levels in OTC Products
<http://www.ada.org/EPUBS/science/2012/may/page.shtml>

Legal/Mass Medication/Civil Rights Violation:

Antifluoridationists often use the threat of lawsuits to intimidate the public and politicians into believing that the policy that they're setting is unlawful.

FACT:

No court of last resort has ever found fluoridation to be unlawful. The most recent case was in California in April, 2012. The court dismissed the charges against the plaintiff, the Metropolitan Water District of Southern California:

<http://ia601202.us.archive.org/3/items/gov.uscourts.casd.360020/gov.uscourts.casd.360020.13.0.pdf>

Antifluoridationists' Claim that Fluoride is a Unapproved Drug by FDA

“While the FDA technically hasn’t had companies submit clinical trials info on fluoride supplements, it’s because they have been around a long time, have been in general use for a long time, and have been accepted as efficacious for a long time—before FDA set up their clinical trials requirements for Rx drugs. **Aspirin** has never been approved by FDA, but it’s widely used by hundreds of millions of people for several indications.

Since the FDA regulates all prescription drugs, even though they might not have gone through the modern-day clinical trials, they will require the drug companies to immediately pull them from the market if they are shown to be unsafe or if they weren’t efficacious relative to the claims made by the companies.”

Anti-fluoridationist's Claim:

Fluoridation Opposition is Scientific, Respectable & Growing

The anti-fluoridationists' state that more than 4,038 professionals (including 331 dentists and 518 MD's) urge that fluoridation be stopped citing scientific evidence that ingesting fluoride is ineffective at reducing tooth decay and has serious health risks.

<http://www.fluoridealert.org/professionals-statement.aspx>

This statement is misleading to the reader. The number of people stated sounds large, but in fact are only a *fraction* of the healthcare professionals in the United States:

The total number of licensed dentists in the US as of 2009 statistics was 186,084.

The total number of licensed physicians in the US as of 2010 statistics was 954,000

The sum total of this is that out of 1,140,084 licensed physicians and dentists in the US, 849 are quoted as some of the professionals opposed to fluoridation.

The number opposed is 0.074% of the total physicians and dentists in the US. It's difficult to ever get 100% of any group to agree on anything.

FDA Regulatory Authority and Water Fluoridation:

Antifluoridationist's Claim: The FDA, not the EPA, should be Regulating Water Additives

The safety of the water supply falls under the regulation of the EPA, not the FDA.

Per CDC:

"FDA Regulatory Criteria for Fluoride"

"The U.S. Food and Drug Administration (FDA) does not regulate additives to community drinking water, because its regulatory reach concerns the safety and efficacy of food, drugs, or cosmetic-related products."

<http://www.cdc.gov/fluoridation/factsheets/engineering/wfadditives.htm#a3>

LEAD LEVELS ARE ELEVATED IN CHILDREN:

Antifluoridationist's Claim: Children drinking fluoridated water have elevated blood levels of Lead.

These claims are not substantiated in credibly conducted scientific research.

Resources:

1. "CAN FLUORIDATION AFFECT LEAD (II) IN POTABLE WATER? HEXAFLUOROSILICATE AND FLUORIDE EQUILIBRIA IN AQUEOUS SOLUTION"
Edward T. Urbansky and Michael R. Schock, Intern. J. Environ. Studies, 2000, Vol. 57. pp. 597-637

CONCLUSION:

Recent reports on the possible effects of water fluoridating agents, such as hexafluorosilicic acid, sodium hexafluorosilicate, and sodium fluoride are inconsistent with accepted scientific knowledge, and the authors fail to identify or account for these inconsistencies. Many of the chemical assumptions are scientifically unjustified, and alternate explanations (such as multiple routes of Pb^{II} exposure) have not been satisfactorily addressed. **At present, there is no evidence to suggest that the common practice of fluoridating drinking water has any untoward health impacts via effects on lead (II) when done properly under established guidelines so as to maintain total water quality. Our conclusion supports both EPA and PHS/CDC policies on water fluoridation.**

2. "Blood Lead Concentrations in Children and Method of Water Fluoridation, United States, 1988–1994", *Macek M, Matte T, Sinks T, Malvitz D. Environmental Health Perspectives 2006; 114:130–134.*
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1332668/>

Summarized Abstract:

"Some have hypothesized that community water containing sodium silicofluoride and hydrofluosilicic acid may increase blood lead concentrations (BLCs) in children by leaching of lead from water conduits and increasing absorption of lead from water. This analysis aimed to evaluate the relationship between method of water fluoridation and BLCs in children. BLC data was used (n = 9,477) from the Third National Health and Nutrition Examination Survey (1988–1994) for children aged 1–16 years and merged with water fluoridation data from the 1992 Fluoridation Census. The main outcome measure was geometric mean BLC. Covariates included age, sex, race/ethnicity, poverty status, urban dwelling status, and length of time living in residence.

Geometric mean BLCs for each water fluoridation method were 2.40 µg/dL (sodium silicofluoride), 2.34 µg/dL (hydrofluosilicic acid), 1.78 µg/dL (sodium fluoride), 2.24 µg/dL

dL (natural fluoride and no fluoride), and 2.14 $\mu\text{g}/\text{dL}$ (unknown/mixed status). In multiple linear and logistic regression, there was a statistical interaction between water fluoridation method and year in which dwelling of residence was built. Controlling for covariates, water fluoridation method was significant only in the models that included dwellings built before 1946 and dwellings of unknown age. Across stratum-specific models for dwellings of known age, neither hydrofluosilicic acid nor sodium silicofluoride were associated with higher geometric mean BLCs or prevalence values.

Given these findings, our analyses, while not definitive, do not support concerns that silicofluorides in community water systems cause higher BLCs in children. Current evidence does not provide a basis for changing water fluoridation practices, which have a clear public health benefit."

97% of Europe Does Not Fluoridate their Water

Antifluoridationist's Claim: 97% of Europe doesn't fluoridate-Illegal

Follows is a communication which I received this month from my colleagues at the *British Fluoridation Society*. In my communication, I asked for a detailed explanation of the claim that those opposed to water fluoridation state. As you will see, there are various reasons that water fluoridation is or is not in place. None of them have anything to do with legal claims as made by the opposition to water fluoridation. *It is not illegal to fluoridate the water in Europe.*

Here is their official reply:

British Fluoridation Society Briefing (by email January 2015)

Fluoridation in Europe:

EU countries with existing water fluoridation schemes

There are three European Union countries with water fluoridation schemes currently in operation:

- * Spain (serving 4.25 million people);
- * the Irish Republic (serving 3.25 million people); and
- * the UK (serving 6 million people).

In total, therefore, EU-wide coverage of water fluoridation extends to around 13.5 million people – equivalent to the combined municipal populations of Los Angeles, Chicago, Houston, Phoenix, Philadelphia and San Antonio.

Spain

Spanish cities benefiting from fluoridation range from Seville and Cordoba in the south (Andalusia) to Bilbao and San Sebastian in the north (Basque Country) and Girona in the north east (Catalonia).

Ireland

In the Irish Republic, all public water supplies are fluoridated, including those in Dublin, Cork, Galway and Limerick.

United Kingdom

Water fluoridation schemes in England cover most of the West Midlands region, as well as parts of the East Midlands, Humberside, Cumbria, Cheshire, Bedfordshire and the North East.

Major cities and towns in England that are supplied with fluoridated water include Birmingham, Coventry, Solihull, Dudley, West Bromwich, Wednesbury, Oldbury, Tipton, Walsall, Wolverhampton, Leamington Spa, Warwick, Rugby, Bromsgrove, Redditch, Lichfield, Tamworth, Cannock, Burton on Trent, Bedford, Crewe, Mansfield, Worksop, Lincoln, Scunthorpe, Workington, Newcastle upon Tyne and Gateshead.

Natural fluoridation

Around 4 million EU citizens are supplied with naturally fluoridated water at the optimum level for dental health in Austria, Cyprus, Denmark, Finland, France, Ireland, Malta, Sweden and the UK.

Decisions on fluoridation up to individual EU Member States

Within the European Union it is up to individual Member States to decide whether or not to introduce water fluoridation. **No EU country has 'banned' fluoridation.** However, some countries have not enacted the necessary enabling legislation; some have relatively low levels of dental caries, making fluoridation a potentially less cost-effective proposition; and some have opted instead for fluoridation of domestic salt and salt used in catering. Political upheavals and economic problems in the former Eastern bloc during the early 1990s resulted in fluoridation schemes stopping in the former German Democratic Republic, Soviet Union and Czechoslovakia.

The extent of salt fluoridation

EU countries where fluoridated salt is available include France, Germany, Austria, the Czech Republic and Holland. Switzerland, a non-EU member, has widely adopted salt fluoridation – one of the reasons why the Swiss city of Basle, which used to fluoridate its water, decided a few years ago to switch to the alternative mode of fluoride delivery used in the rest of the country. Clearly, to minimise the risk of fluorosis, it is not desirable to run water fluoridation and salt fluoridation programmes in parallel.

European Platform for Oral Health cites water fluoridation as an example of good practice

At the European level there is a collaborative forum entitled the *Platform for Better Oral Health in Europe*. With the support of a number of members of the European Parliament, the Platform brings together health professionals, academics and other experts from many countries to

exchange information and ideas and make recommendations to governments and health agencies across Europe.

In 2012 the Platform published a major report entitled *The State of Oral Health in Europe* which concluded that water fluoridation represents an example of “good practice” in oral health promotion and that it is “safe, cost-effective and has a demonstrable long-term benefit to population dental health.”

Describing the impact of water fluoridation, the report states: “The best available evidence suggests that fluoridation of drinking water reduces the prevalence of caries, both in terms of the proportion of children who are caries-free and by the mean change in decayed, missing and filled teeth (DMFT).”

The report also points to the ability of water fluoridation to reduce oral health inequalities between children from different social backgrounds. It states: “There is also evidence to suggest that water fluoridation reduces the severity of caries (as measured by DMFT) across social groups and between geographical locations (McDonagh et al, 2000). Water fluoridation is consequently one of the few interventions that directly reduces disparities in dental decay between high and low socio-economic status groups (Burt 2002, Neidell et al, 2010).”

Reductions in Cavities in Adults:

1. *"Cavity reductions continue to occur into adulthood from access to fluoridated water. The reduction in caries previously demonstrated in children has extended to adults. The impact is a decline in the need for restorative dentistry."*

"Trends in caries among adults 18 to 45 years old", *Brown LJ, Wall TP, Lazar V., J Am Dent Assoc.* 2002 Jul;133(7):827-34.

<http://www.ncbi.nlm.nih.gov/pubmed/12148675>

2. *"It was once thought that fluoridated drinking water only benefited children who consumed it from birth," explained Slade, who is John W. Stamm Distinguished Professor and director of the oral epidemiology Ph.D. program at UNC. "Now we show that fluoridated water reduces tooth decay in adults, even if they start drinking it after childhood. In public health terms, it means that more people benefit from water fluoridation than previously thought."*

"Effects of Fluoridated Drinking Water on Dental Caries in Australian Adults"

G.D. Slade, A.E. Sanders, L. Do, K. Roberts-Thomson and A.J. Spencer, J DENT RES published online 1 March 2013

<http://jdr.sagepub.com/content/92/4/376>

3. *"To date, no systematic reviews have found fluoride to be effective in preventing dental caries in adults. The objective of this meta-analysis was to examine the effectiveness of self- and professionally applied fluoride and water fluoridation among adults.*

The prevented fraction (reduction in cavities) for water fluoridation was 27% (95%CI: 19%-34%). These findings suggest that fluoride prevents caries among adults of all ages."

"Effectiveness of Fluoride in Preventing Caries in Adults"

S.O. Griffin, E. Regnier, P.M. Griffin, and V. Huntley, J Dent Res 86(5):410-415, 2007

<http://www.ncbi.nlm.nih.gov/pubmed/17452559>

ABOUT THE AUTHOR:

I advocate for the health and protection of children's rights everywhere, especially in the area of fluoridation challenges.

I have been involved in fluoridation challenges in numerous communities throughout Florida and the United States. When the authorities that oversee fluoridation decisions are presented with the credible, scientific, peer reviewed and published data which supports the safety, effectiveness, and cost savings of optimally fluoridated water, they make the prudent decision to start, continue, or resume fluoridation for their communities. They understand that the science which overwhelmingly supports fluoridation is crystal clear. Failure to provide community water fluoridation results in irreparable harm to their families, both children and adults. Moreover, spending a communities time and efforts to review a Public Health Policy that continues to be supported by ongoing research is not only a waste of time for local communities, it is a waste of valuable resources which could best be spent on solving local issues.

When community leaders are faced with challenges to any medical, dental, or public health measure, they turn to the experts which have studied these issues and render their recommendations based on the best available research. They no more depend those without credible expertise who email them, or voice opposition to, the construction design of a nuclear power plant, bridge, hospital, road when faced with these decisions to make. They do not put out to referendum any of these issues to ask the public to decide if our credible experts are to be trusted. And why would they? To do so only passes the buck back to residents to be the fall guy if an issue has the potential to be unpopular. This is not how our government in the United States was set up. Failure of our officials to lead and make the tough decisions is the difference between an organized society and one in chaos. We chose to live in an organized society where all can be heard, but decisions are reached by our elected officials for the benefit of the greater good. Public Health Policy is made for the protection of an entire community. It cannot be tailored to the desires or opinions of the few who may oppose it.

You are the elected officials that were elected to make these informed decisions for your constituents. Make the prudent, scientifically valid, and credibly researched decision by voting to proceed with fluoridation of [INSERT COMMUNITY'S NAME] water. I urge you to continue to rely on the experts that we all trust, and to put this issue to rest here and now. Your residents all depend on your leadership for their health, well-being, and safety. Your children and adults, especially those most in need and living in poverty, deserve to receive the health benefits of fluoridation.

Finally, make no mistake. The folks speaking against fluoridation are here to make a national statement. They desperately want to have a community, no matter how large or small, fall prey to their tactics. They will use their "win" to build perceived credibility in their science-fiction claims and momentum in other communities. They did it in my home county of Pinellas and were successful in having it cut off to 700,000 residents. We fought for a year to have it returned and were successful, only after 2 incumbent county commissioners were replaced by the voters. Please do not allow these folks to create a similar "win" in [INSERT COMMUNITY'S NAME] by having you vote to block your startup of community water fluoridation. After all, who *really* wins when the health of your community is jeopardized by a few who oppose fluoridation? No one. Including those that oppose it.

Johnny Johnson, Jr., D.M.D., M.S.
Pediatric Dentist
Diplomate, American Board of Pediatric Dentist
Palm Harbor, Pinellas County, Florida