

The City Manager discussed the possibility of increasing water rates in the future amounting to approximately 10% increase in minimum rates plus .50¢ a thousand gallons up to 20,000 gallons, .40¢ per thousand gallons above. Matter was tabled for further study and consideration.

Moved by Barden, seconded by Loding to adopt Ordinance #A-47, rejecting the fluoridating of Boyne City Water System as provided in Act 346 of Public Acts for the State of Michigan for 1968 and to publish said Ordinance in the Northland Press, a newspaper duly circulated in the City of Boyne City. This ordinance is to take effect 21 days after publication. Roll call vote, all yeas. Motion carried.

cc  
5/8/1973

ORDINANCE #A-47

AN ORDINANCE REJECTING THE FLUORIDATING OF BOYNE CITY WATER SYSTEM AS PROVIDED IN ACT 346 OF PUBLIC ACTS FOR THE STATE OF MICHIGAN FOR 1968.

The City of Boyne City Ordains:

That it shall reject the adding of Fluoride to its municipal water supply as provided under Section 2 of Act 346 of Public Acts of the State of Michigan for 1968.

This ordinance shall take effect 21 days after its passage and publication in the Northland Press, a newspaper of general circulation in the City of Boyne City.

Moved by Sevener, seconded by Kowalske to submit to the voters of Boyne City in the November 6, 1973 city election the question on whether or not the City of Boyne City shall fluoridate the City Water System. Roll call vote, all yeas. Motion carried.

Moved by Kowalske, seconded by Loding that this Commission resolves to allocate the Revenue Sharing Funds received from the Federal Government for the period of January 1, 1973 to June 30, 1973 to projects connected with operating maintenance under category 2 - Environmental Protection. The amount of these funds are estimated to be \$28,823.00. Roll call vote, all yeas. Motion carried.

Discussion was held on the issuing of a building permit to Don Seamon for further construction of 5 additional units or 20 apartments for Boyne Ridge. Matter was tabled for further study.

Sebert Gillespie appeared before the Commission concerning a letter he received from the dump operator regarding the proper separation of junk and refuse. The Commission instructed the city manager to publish a notice in the paper to make people aware of the new dumping regulations mandated by the Michigan Department of Health.

Moved by Barden, seconded by Sevener to adjourn. Meeting adjourned.

*Marvin Loding*  
Mayor

*Thomas J. Garlock*  
Deputy City Clerk

25.550

**FLUORIDATING WATER**

**Ord. No. A-47**

**Adopted: June 12, 1973**

An ordinance rejecting the fluoridating of Boyne City Water System as provide in Act 346 of Public Acts for the State of Michigan for 1968.

THE CITY OF BOYNE CITY ORDAINS:

**25.551 Fluoride rejected.**

That it shall reject the adding of fluoride to its municipal water supply as provided under Section 2. of Act 346 of Public Acts of the State of Michigan for 1968. (Ord. No. A-47 adopt. June 27, 1973)

STATEMENT OF VOTES

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<p>The who' _____</p> <p style="text-align: center;"><b>PROPOSAL NO. 1</b></p> <p>was _____ <b>FLUORIDATING BOYNE CITY WATER SYSTEM</b> _____</p> <p>of which num. _____ "Shall the City of Boyne City fluoridate the city's water supply system as provided for in Act 346 votes were mo _____ of Public Acts of the State of Michigan for 1968?" _____</p> <p>and _____</p> <p>votes were marked <b>NO</b> <i>one hundred forty eight</i></p>	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;"></td><td style="width: 10%;"></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">443</td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">295</td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">148</td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">443</td><td></td></tr> </table>																			443										295										148										443	
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VOTE OF 11-6-1973



Dear Conference Attendees:

Welcome to the 2013 National Oral Health Conference. I want to thank you for the leadership and efforts you are providing to the nation in the area of oral health.

As Surgeon General I have been working hard to encourage individuals and communities to make healthy choices because I believe it is better to prevent illness and disease rather than treat it after it occurs. Community water fluoridation is one of the most effective choices communities can make to prevent health problems while actually improving the oral health of their citizens.

One of water fluoridation's biggest advantages is that it benefits all residents of a community—at home, work, school, or play—through the simple act of drinking fluoridated water. Where water fluoridation is a community-wide intervention, the benefits are not limited by a person's income level or their ability to receive routine dental care. It also is a very cost-effective intervention. A lifetime of cavity prevention can be obtained for less than the cost of one dental filling.

Fluoridation's effectiveness in preventing tooth decay is not limited to children, but extends throughout life, resulting in fewer and less severe cavities. In fact, each generation born since the implementation of water fluoridation has enjoyed better dental health than the generation that preceded it.

As then-Surgeon General David Satcher noted in *Oral Health in America: A Report of the Surgeon General* (May 2000), community water fluoridation continues to be the most cost-effective and practical way to provide protection from tooth decay in a community. The U.S. Centers for Disease Control and Prevention has recognized fluoridation as one of 10 great public health achievements of the 20th Century.

This year marks the 68<sup>th</sup> anniversary of community water fluoridation.

I join with previous Surgeons General in acknowledging community water fluoridation as an effective public health strategy, and recommend its continued use and expansion to enhance the oral health of all Americans.

Regina M. Benjamin, MD, MBA  
VADM U.S. Public Health Service  
Surgeon General



STATE OF MICHIGAN

DEPARTMENT OF COMMUNITY HEALTH  
LANSING

RICK SNYDER  
GOVERNOR

JAMES K. HAVEMAN  
DIRECTOR

## Michigan Community Water Fluoridation Position Statement March 2013

The Michigan Department of Community Health stands firm in its commitment for community water fluoridation. Fluoridation of public water supplies in the United States began over 60 years ago in our own Grand Rapids, Michigan. Currently almost seven million Michigan residents have access to community water fluoridation to reduce dental decay and improve oral health.

Community Water Fluoridation is given strong support and active promotion by over 100 prominent, credible health agencies including the World Health Organization, the Centers for Disease Control and Prevention, and the American Dental and Medical Associations.

Fluoridation is still the most cost effective and efficient way to prevent dental disease. It is an ideal public health measure that benefits all races, all ages, all socio economic status levels. The U.S. Centers for Disease Control and Prevention has recognized the "fluoridation of drinking water as one of ten great public health achievements of the twentieth century." Fluoridation is especially beneficial to the citizens of Michigan who find it difficult to access health care such as children, persons with disabilities, the aging population or those without health or dental insurance.

The safety of community water fluoridation has been researched extensively since its inception as a public health measure in 1945. Scientific study reviews continue to demonstrate the safety and efficacy of fluoridation. Both the Environmental Protection Act and the Michigan Safe Drinking Water Act set standards for the proper amount of fluoride added to our community water supplies.

The Michigan Department of Environmental Quality and the Michigan Department of Community Health Oral Health Program monitor monthly fluoride levels at each community water system in Michigan. At the recommended fluoride levels for optimal oral health, there are no adverse health effects.

The Michigan Department of Community Health supports community water fluoridation as a safe, cost effective, and efficient public health measure to reduce dental decay in its citizens.

James K. Haveman, Director

April 14, 2013  
Date



# HEALTH DEPARTMENT

of Northwest Michigan

**Administrative Office**  
220 W. Garfield Ave.  
Charlevoix, MI 49720  
231 547 6523  
231 547 6238 - fax

209 Portage Dr.  
Bellaire, MI 49615  
231 533 8670  
231 533 8450 - fax

205 Grove St.  
Manclona, MI 49659  
231 587 5052  
231 587 5313 - fax

3434 M-119, Sulte A  
Harbor Springs, MI  
49740  
231 347 6014  
231 347 2861 - fax

95 Livingston Blvd.  
Gaylord, MI 49735  
989 732 1794  
989 732 3285 - fax

**Dental Clinics North**  
**Administrative Office**  
220 W. Garfield Ave.  
Charlevoix, MI 49720  
231 547 6523  
231 547 6238 - fax

**Hospice of Northwest**  
**Michigan**  
220 W. Garfield Ave.  
Charlevoix, MI 49720  
800 551 4140  
231 547 1164 - fax

**Northern Michigan**  
**Regional Lab**  
95 Livingston Blvd.  
Suite D  
Gaylord, MI 49735  
989 732 1794  
989 732 3285 - fax

## BOARD OF HEALTH RESOLUTION IN SUPPORT OF COMMUNITY WATER FLUORIDATION

The Health Department of Northwest Michigan supports community water fluoridation programs. Fluoridation of public water supplies in the United States began over 60 years ago in Grand Rapids, Michigan. Currently almost seven million Michigan residents have access to community water fluoridation to reduce dental decay and improve oral health.

Fluoridation is still the most cost effective and efficient way to prevent dental disease. It is an ideal public health measure that benefits everyone regardless of their ability to access other preventive services. The U.S. Centers for Disease Control and Prevention has recognized "the fluoridation of drinking water as one of ten great public health achievements of the twentieth century."

Community Water Fluoridation is given strong support and active promotion by over 100 prominent, credible health agencies including the World Health Organization, Centers for Disease Control and Prevention, American Dental Association, and American Medical Association.

The safety of community water fluoridation has been researched extensively since its inception as a public health measure in 1945. Scientific study reviews continues to demonstrate the safety and efficacy of fluoridation. At the recommended fluoride levels for optimal oral health, there are no adverse health effects.

The Health Department of Northwest Michigan supports community water fluoridation as a safe, cost effective, and efficient public health measure to reduce dental decay and improve citizens' health in our communities.

  
\_\_\_\_\_  
Les Atchison, Chairperson  
Board of Health

5/7/2014  
Date



## **Resort District Dental Society Supports Community Water Fluoridation**

The Boyne City-area members of the Michigan Dental Association believe it is crucial for Boyne City to continue fluoridating its public water supply. Fluoridation is considered one of the Top 10 public health initiatives of the past century, and it's important not to take away this effective public service.

### **Here are some key facts:**

**Fluoridation is effective – and we have more than 65 years of evidence to back that up.** Fluoride occurs naturally in groundwater, but community fluoridation was launched in 1945 because scientists found that children in communities with a naturally-occurring, optimal concentration of fluoride in the water had 50 to 60 percent less tooth decay. They wanted all children to get that benefit, including those living in communities with fluoride-deficient water.

Even today, when we get fluoride from other sources such as toothpaste, water fluoridation continues to be effective in preventing tooth decay by 25 percent. We need look no further than to our own families for proof of that.

It's important to remember that our most vulnerable citizens suffer when communities stop fluoridation. People who cannot afford to visit the dentist regularly, or to receive fluoride supplements, stop receiving optimum amounts when fluoride is removed from the water. That means economically disadvantaged citizens then have another strike against them – disproportionately high rates of tooth decay – simply because they live in the wrong place. We do not want our community to be the “wrong place” for people to live.

Fluoridation is the most efficient way to prevent tooth decay, which is the most common chronic childhood disease. Tooth decay is five times more common than asthma and seven times more common than hay fever in children. For children, early tooth loss caused by tooth decay can result in failure to thrive, impaired speech development, and absence from school. Without fluoridation, there would be many more than the estimated 51 million school hours lost per year in this country because of dental-related illness.

Fluoridation benefits adults, too. People in the U.S are living longer and retaining more of their natural teeth than ever before thanks in part to fluoridation.

**Fluoridation is safe – and again we have more than 65 years of research to back that up.** The facts just don't support allegations of toxicity and health-related problems related to fluoridation.

Of the hundreds of credible scientific studies on fluoridation, none has shown health problems associated with the consumption of optimally fluoridated water. One potential cosmetic effect has been found – the harmless streaking of tooth enamel, but this has no known health consequences and is not readily apparent to the casual observer.

**Fluoridation is economical.** Fluoridation has substantial, lifelong decay preventive benefits and is a highly economical means of preventing tooth decay, regardless of an individual's socioeconomic status. The lifetime cost per person to fluoridate a water system is less than the cost of one dental filling. With rising health care costs, fluoridation remains a preventive measure that provides benefit at minimal cost – which impacts both individuals and taxpayers who fund public health programs.

**Fluoridation has been slammed by “junk science” – even with more than 65 years of research and experience to disprove that faulty thinking.**

It is important to distinguish junk science from legitimate scientific research. Reputable science is based on the scientific method of testing hypotheses in ways that can be reproduced and verified by others. Junk science offers simplistic answers to complex questions and cannot be substantiated.

You may hear wild allegations that fluoridation causes cancer, AIDS, Down Syndrome, Alzheimer's disease, hip fracture, heart and kidney disease, and even lower IQs in children. These claims have not been proven by credible scientific evidence and indeed, generally accepted science says just the opposite – fluoridation improves overall health.

Decision makers must be responsible to the citizens and must demand proof and weigh these wild claims against demonstrated science.

No court of last resort has ever determined fluoridation to be unlawful. Moreover, fluoridation has never been found to be an unconstitutional invasion of religious freedom or other individual rights guaranteed by the First, Fifth or Fourteenth Amendments to the U.S. constitution.

As Former U.S. Surgeon General Richard H. Carmona said, “... 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 ... 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.”

When presented with an opportunity to provide people with a safe, demonstrated and cost-effective health care program that benefits everyone, there can be no doubt why states and communities across the nation have chosen to provide their citizens with the benefits of community water fluoridation. It works, it's safe, and it's economical.

Our city must not turn a blind eye to the overwhelming facts that support water fluoridation.

**Resources:**

Jennifer Larson, DDS  
231-582-4480

Vince Mack, DDS  
Trustee, Michigan Dental Association  
231-929-7737

## City of Grand Rapids

*Home > Enterprise Services > Water System > Fluoride in Drinking Water*

Scientists first began noticing the effects of fluoride on teeth in the early 1900s when a Colorado dentist discovered that some of his patients had very few cavities and it was traced to a water supply naturally high in fluoride. Fluorides are chemical compounds that occur naturally in both soil and water. In the 1930s, studies found that one part per million—roughly one droplet in a bathtub full of water—would prevent cavities without causing mottled enamel. In January 1945, the City of Grand Rapids was the first community to add fluoride to a public water supply.

Between 1945 and today, data on fluoridated water has shown there is a significant reduction in cavities. Studies have shown that fluoridated water strengthens children's teeth as they form and repairs early stages of decay. In adults, it prevents root cavities. For over five decades, the American Dental Association has continuously endorsed the fluoridation of community water supplies and the use of fluoride-containing products as safe and effective measures for preventing tooth decay. Community water fluoridation remains the model for dental disease prevention, saving Americans billions of dollars and untold suffering every year.

Additionally, the Michigan Department of Environmental Quality, the State agency that regulates the Grand Rapids Water System, and the American Water Works Association advocate the addition of fluoride in public drinking water systems.

The Center for Disease Control (CDC) states, "Community water fluoridation is safe and effective in preventing tooth decay, and has been identified by the CDC as one of 10 great public health achievements of the 20th century." Additionally, the past five Surgeons General have supported community water fluoridation and encouraged communities to fluoridate their water.

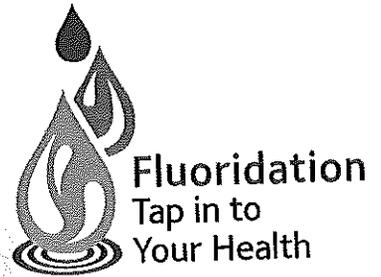
Community water fluoridation is the process of adjusting the natural fluoride concentration of a community's water supply to a level that is best for the prevention of dental cavities. Grand Rapids water source from Lake Michigan has a natural fluoride level that generally varies from 0.1 to 0.2 parts per million. Fluoride is added in the treatment process to bring the level up to .70 part per million, which is within the optimal levels established by the American Dental Association for a community water supply. This level was recently lowered from 1.0 parts per million based on research and recommendations of the Dental Association and the US Department of Health & Human Services.

A survey conducted in 2006 by the Michigan Department of Community Health revealed that Michigan third grade children attending schools in optimally fluoridated communities have significantly fewer teeth affected by cavities than those attending schools without an optimally fluoridated water supply. We agree with their assessment that water fluoridation eliminates disparities in preventing cavities across the population.

In spite of the proven benefits of fluoride in drinking water, the debate on the addition of fluoride is longstanding. Fluoride is considered a poison in large doses but toxic levels cannot be achieved by

**drinking fluoridated water. Scientists continue to collect data to determine the toxicity of fluoride in drinking water. The amount of fluoride added during the water treatment process is strictly regulated and closely monitored. To date, the quantitative evidence demonstrates that positive benefits of fluoridated water continue to outweigh any suggested negative impacts. As a result, be assured that our current practice of fluoridating water will continue.**

**The City of Grand Rapids prides itself in being in the forefront of research that is being conducted on water quality and health issues related to drinking water. As a member of the American Water Works Association Research Foundation and the Great Lakes and St. Lawrence Cities Initiative, we will continue our practice of monitoring research conducted by recognized scientific organizations.**



## Statements on Community Water Fluoridation

American Dental Association (ADA) – The ADA is the oldest and largest national dental society in the world. It has grown to become the leading source of oral health related information for dentists and their patients.

In the **ADA's policies**, it states, "The Association endorses community water fluoridation as a safe, beneficial and cost-effective public health measure for preventing dental caries (cavities). This support has been the Association's policy since 1950."

American Academy of Pediatrics (AAP) – The AAP and its member pediatricians dedicate their efforts and resources to the health, safety and well-being of infants, children, adolescents and young adults.

In a press statement on the **AAP's website**, the organization states, "Tooth decay is the most common chronic disease of childhood, and water fluoridation is one of the most important public health initiatives in the 20th century. The AAP agrees that water fluoridation is beneficial for reducing and controlling tooth decay and promoting oral health in children and adults."

American Association of Public Health Dentistry (AAPHD) – The AAPHD provides a focus for meeting the challenge to improve oral health through promotion, education and expansion of knowledge.

AAPHD has **adopted a resolution** in support of community water fluoridation, stating that the AAPHD, "Reaffirms its support for the continuation and expansion of community water fluoridation; and encourages its members and constituents ... to help develop national and regional coalitions in support of fluoridation."

American Medical Association (AMA) – The AMA promotes the art and science of medicine and the betterment of public health. In 1951, the AMA endorsed the principle of fluoridation of community water supplies.

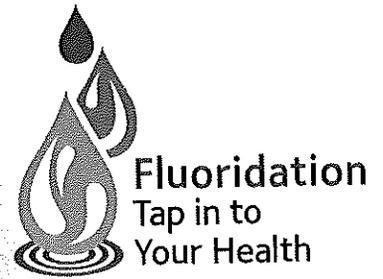
The AMA has developed a **water fluoridation policy** that "urges state health departments to consider the value of required statewide fluoridation."

American Public Health Association (APHA) – The APHA is the oldest, largest and most diverse organization of public health professionals in the world.

The **APHA has adopted a policy statement** that states the organization "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 ..."

Centers for Disease Control and Prevention (CDC) – The CDC is dedicated to protecting health and promoting quality of life through programs that reduce the health and economic consequences of the leading causes of death and disability, thereby ensuring a long, productive, healthy life for all people.

The **CDC's website** states that, "The Division of Oral Health salutes the dedication and perseverance of fluoridation pioneers. Because of their efforts and continued support from generations of dentists and other health care providers, health care and public health organizations, community leaders, water plant operators, and untold others, the prevention of tooth decay through community water fluoridation is recognized by the CDC as one of 10 great achievements in public health of the 20th century. This simple, safe, and inexpensive public health intervention has contributed to a remarkable decline in tooth decay in the United States, with each generation enjoying better oral health than the previous generation."



Hispanic Dental Association (HDA) – The HDA is comprised of oral health professionals and students dedicated to promoting and improving the oral health of the Hispanic community and providing advocacy for Hispanic oral health professionals across the U.S.

In 2012, the organization **published a statement** that “it is the position of the HDA to endorse community water fluoridation in all communities – especially the Hispanic and underserved communities – as a safe, beneficial and cost effective public health measure based on science for preventing dental caries and to aid in the reduction of oral health disparities.

**National Dental Association (NDA)** – The NDA is a national forum for minority dentists and a leader in advancing their rights within the dental profession, the armed services, the government, and the private sector.

In an updated **Position Paper**, the NDA states that it “is committed to working with other dental organizations, government agencies, dental societies and individual dentists to encourage and facilitate the use of water fluoridation in local municipal water supplies, especially underserved areas, in an effort to impact as large a number of individuals as is possible.”

National Institute of Dental & Craniofacial Research (NIDCR) – The mission of the NIDCR is to improve oral, dental and craniofacial health through research, research training, and the dissemination of health information.

The **NIDCR’s statement on water fluoridation** says, “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.”

Parent Teachers Association (PTA) – As the largest volunteer child advocacy association in the nation, PTA provides the best tools to help their children be safe, healthy, and successful – in school and in life. In the **PTA’s position statement** concerning “Comprehensive Health Programs,” it supports fluoride in water.

U.S. Surgeon General – The Surgeon General of the United States is the nation’s leading spokesman on matters of public health. The last five Surgeons General have endorsed water fluoridation for all communities.

Former Surgeon General Richard H. Carmona said, “... 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 ... 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.”

World Health Organization (WHO) – WHO is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.

The **WHO has endorsed community water fluoridation**, stating that “Public health actions are needed to provide sufficient fluoride intake in areas where this is lacking, so as to minimize tooth decay.”

**National Health/Medical Organizations That Send Letters  
To Local Communities Supporting Community Water Fluoridation**

**American Academy of Pediatrics**

*Contact:* Lauren Barone

E: [ibarone@aap.org](mailto:ibarone@aap.org)

**American Dental Association**

*Contact:* Jane McGinley

E: [mcginleyj@ada.org](mailto:mcginleyj@ada.org)

**American Dental Hygienists Association**

*Contact:* Daniel Zurawski

E: [danielz@adha.net](mailto:danielz@adha.net)

**Centers for Disease Control and  
Prevention**

*Contact:* Melissa Albuquerque

E: [mfa5@cdc.gov](mailto:mfa5@cdc.gov)

**Children's Dental Health Project**

*Contact:* Matt Jacob

E: [mjacob@cdhp.org](mailto:mjacob@cdhp.org)

**Institute for Science in Medicine**

*Contact:* Linda Rosa

E: [rosa@scienceinmedicine.org](mailto:rosa@scienceinmedicine.org)

**The Pew Children's Dental Campaign**

*Contact:* Kristen Mizzi

E: [kmizzi@pewtrusts.org](mailto:kmizzi@pewtrusts.org)

**Michael Cain**

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**From:** Joshua Meyerson [j.meyerson@nwhealth.org]  
**Sent:** Tuesday, April 29, 2014 5:48 PM  
**To:** Michael Cain  
**Cc:** Rose Straebel; Linda Yaroch  
**Subject:** Community Water Fluoridation  
**Attachments:** 2012\_MOHC\_CWF\_Tool\_Kit\_395210\_7.pdf; Grand Rapids Water FluoridationStatement.pdf; Fluoride levels HDNW.pdf; Tooth decay referral rates.pdf; March 2013-Haveman-final.pdf

Hi Mike,

As the Medical Director of the Health Department and a Pediatrician in the community I know that Oral health is important to the overall health of all individuals and that preventing early childhood caries and childhood dental decay is crucial to providing a healthy start for our children. Community Water Fluoridation has a big role in the prevention of dental disease and is one of the great public health success stories. I have attached some documents that I think would be useful to you and the City Commission as you consider this issue. I look forward to attending the May 13 meeting to discuss this important topic. If you have any questions in the meantime please don't hesitate to contact me.

Josh

Joshua Meyerson, MD, MPH  
Medical Director  
Health Department of Northwest Michigan and DHD#4  
220 W. Garfield  
Charlevoix, MI, 49720  
231-547-6523  
231-547-6238 fax  
[www.nwhealth.org](http://www.nwhealth.org)

**Michael Cain**

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**From:** Michael Fleming [mikefleming99@hotmail.com]  
**Sent:** Monday, April 21, 2014 12:58 PM  
**To:** Michael Cain; jim@boynechamber.com; jimbaumann@gmail.com  
**Subject:** Water Fluoridation

Hi gentlemen,

I would like to first thank you Jim for bringing this "issue" to the dentists attention. I agree with Dr. Veryser that the MDA would be the first place to start with water fluoridation information to educate the commissioner further on its benefits. The ADA (American Dental Association) would also be a great resource, in my opinion.

I personally think this would be a **major mistake for the City to allow this occur**. Unfortunately it is the citizen's of Boyne, their children and grandchildren that would be affected. 70% of the USA has fluoride in the water, with the remaining 30% not having access due to rural locations and access is impossible.

I am positive that without the fluoride, tooth decay would increase dramatically costing the patients more to fix or save their teeth. This is a major **health issue**, which should not be decided by a commissioner. If it is an issue for a few in the city, then I would suggest they buy and drink their own bottled water with no fluoride and allow the majority of the city citizens to continue to benefit from water fluoridation.

Dentistry has always been based upon prevention, which is why we advise 2 hygiene appts(cleanings) annually for patients (more if needed), recommend fluoride treatments for children of proper age and adults prone to decay.....to prevent decay and periodontal problems from occurring.

Unfortunately we battle too many outside sources....soda pop (acidic and sugar), candy, energy drinks, smoking, coffee with sweeteners, artificial flavoring with sucrose's/fructose's in a lot of our diets, (just to name a few) to totally win the battle with tooth decay.

Water Fluoridation is necessary and essential to battle these other sources to help **prevent** decay. Without it, more patients will develop decay and may lose their teeth because they may not be able to afford the treatment. Many patient's insurance would be used up for the year, which we see now **even with water fluoridation in effect**,....who knows how much additional treatment would be needed without fluoride in the water, but I can say for sure it will increase! Unfortunately, we would be extracting more teeth, which is not our primary goal as a dental provider, and returning to the days of making more dentures, which is not in the best interest of the community.

Below is the ADA's (American Dental Associations) letter on fluoride and it's benefits in our water system.

Please do not let this change occur for this wonderful city and it's people.

Sincerely,

Michael A. Fleming DDS

**FROM THE ADA WEBSITE:**

On January 25, 1945 Grand Rapids, Michigan became the world's first city to adjust the level of fluoride in its water supply. Since that time, fluoridation has dramatically improved the oral health of tens of millions of Americans. Community water fluoridation is the single most effective public health measure to prevent tooth decay. The Centers for Disease Control and Prevention has proclaimed community water fluoridation as one of 10 great public health achievements of the 20th century. Approximately 72.4% of the U.S. population served by public water systems receive the benefit of optimally fluoridated water.

Fluoridation of community water supplies is simply the adjustment of the existing, naturally occurring fluoride levels in drinking water to an optimal fluoride level recommended by the U.S. Public Health Service (0.7 – 1.2 parts per million) for the prevention of tooth decay. Water that has been fortified with fluoride is similar to fortifying milk with Vitamin D, table salt with iodine, and bread and cereals with folic acid.

Studies conducted throughout the past 65 years have consistently shown that fluoridation of community water supplies is safe and effective in preventing dental decay in both children and adults. Simply by drinking water, children and adults can benefit from fluoridation's cavity protection whether they are at home, work or school.

Today, studies prove water fluoridation continues to be effective in reducing tooth decay by 20 – 40%, even in an era with widespread availability of fluoride from other sources, such as fluoride toothpaste. Fluoridation is one public health program that actually saves money. An individual can have a lifetime of fluoridated water for less than the cost of one dental filling.

The American Dental Association continues to endorse fluoridation of community water supplies as safe and effective for preventing tooth decay. This support has been the Association's position since policy was first adopted in 1950. The ADA's policies regarding community water fluoridation are based on the overwhelming weight of peer-reviewed, credible scientific evidence. The ADA, along with state and local dental societies, continues to work with federal, state and local agencies to increase the number of communities benefiting from water fluoridation.



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## Fluoridation Basics

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Nearly all naturally occurring water sources contain fluoride—a mineral that has been proven to prevent, and even reverse, tooth decay.

Tooth decay is caused by certain bacteria in the mouth. When a person eats sugar and other refined carbohydrates, these bacteria produce acid that removes minerals from the surface of the tooth. Fluoride helps to remineralize tooth surfaces and prevents cavities from continuing to form.

### Fluoridation Beginnings

In the 1930s, dental scientists documented that the occurrence and severity of tooth decay was lower among people whose water supplies contained higher levels of natural fluoride. Extensive studies followed and discovered that fluoride, when present in the mouth, can become concentrated in plaque and saliva, helping to prevent the breakdown of enamel minerals. In 1945, the city of Grand Rapids, Michigan, added fluoride to its municipal water system. Community water fluoridation—adjusting the amount of fluoride in an area's water supply to a level that helps to prevent tooth decay and promote oral health—had begun. Since then, numerous scientific studies and comprehensive reviews have continually recognized fluoridation as an effective way to prevent tooth decay.

### Benefits of Fluoridation

Water fluoridation prevents tooth decay mainly by providing teeth with frequent contact with low levels of fluoride throughout each day and throughout life. Even today, with other available sources of fluoride, studies show that water fluoridation reduces tooth decay by about 25 percent over a person's lifetime.

Community water fluoridation is not only [safe and effective \(/fluoridation/safety/index.htm\)](/fluoridation/safety/index.htm), but it is also [cost-saving \(/fluoridation/factsheets/cost.htm\)](/fluoridation/factsheets/cost.htm) and the least expensive way to deliver the benefits of fluoride to all residents of a community. For larger communities of more than 20,000 people, it costs about 50 cents per person to fluoridate the water. It is also cost-effective because every \$1 invested in this preventive measure yields approximately \$38 savings in dental treatment costs.

This method of fluoride delivery benefits all people—regardless of age, income, education, or socioeconomic status. A person's income and ability to get routine dental care are not barriers since all residents of a community can enjoy fluoride's protective benefits just by drinking tap water and consuming foods and beverages prepared with it.

Fluoride from other sources prevents tooth decay as well, whether from toothpaste, mouth rinses, professionally applied fluoride treatments, or prescription fluoride supplements. These methods of delivering fluoride, however, are more costly than water fluoridation and require a conscious decision to use them.

### Fluoridation Today

Currently, more than 204 million people in the United States are served by public water supplies containing enough fluoride to protect teeth. Even so, approximately 100 million Americans do not have access to fluoridated water. Healthy People is the plan that sets health goals for the nation. This plan calls for about 80 percent of the population to be served by optimally fluoridated community water systems by 2020. The current population with access to fluoridated water is approximately 74 percent.

The widespread availability of fluoride through water fluoridation, toothpaste, and other sources, however, has resulted in the steady decline of dental caries throughout the United States.

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Content source: Division of Oral Health, National Center for Chronic Disease Prevention and Health Promotion

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## 2012 Water Fluoridation Statistics

These statistics were prepared using water system data reported by states to the CDC Water Fluoridation Reporting System as of December 31, 2012, and the US Census Bureau state population estimates for 2012.

### National Water Fluoridation Statistics

Total US population, people <sup>a</sup>	313,914,040
US population on community water systems (CWS), people <sup>b</sup>	282,534,910
Total US population on fluoridated drinking water systems, people <sup>b</sup>	210,655,401
Percentage of US population receiving fluoridated water	67.1%
Percentage of US population on CWS receiving fluoridated water <sup>d</sup>	74.6%
Total number of CWS in United States <sup>b</sup>	52,734
Number of CWS providing fluoridated water <sup>b</sup>	18,502
Number of CWS adjusting fluoride <sup>b</sup>	5,999
Number of CWS consecutive to systems with optimal fluoride levels <sup>b</sup>	6,342
Number of CWS with naturally occurring fluoride at or above optimal levels <sup>b,e</sup>	6,151
Population served by CWS with naturally occurring fluoride at or above optimal levels <sup>b,e</sup>	11,116,202

### State Fluoridation Percentage Calculations and States Ranked by Fluoridation Percentage

State	People receiving fluoridated water	People served by CWS	%	Rank
United States	210,655,401	282,534,910	74.6%	
Alabama <sup>f</sup>	3,781,607	4,822,023	78.4%	23
Alaska	361,240	682,528	52.9%	41
Arizona	3,199,068	5,536,324	57.8%	38
Arkansas	1,785,679	2,669,485	66.9%	33
California <sup>f,g,h</sup>	24,215,234	38,041,430	63.7%	34
Colorado <sup>f</sup>	3,757,694	5,187,582	72.4%	28
Connecticut	2,350,532	2,603,377	90.3%	14
Delaware	705,824	818,110	86.3%	19

District of Columbia	595,000	595,000	100%	
Florida	13,371,262	17,149,724	78.0%	24
Georgia <sup>f</sup>	9,551,793	9,919,945	96.3%	6
Hawaii	139,598	1,290,549	10.8%	50
Idaho	395,863	1,097,332	36.1%	46
Illinois <sup>f</sup>	12,682,543	12,875,255	98.5%	3
Indiana	4,342,273	4,582,496	94.8%	8
Iowa	2,555,593	2,778,894	92.0%	12
Kansas	1,719,503	2,702,452	63.6%	Tied for 35
Kentucky <sup>f</sup>	4,375,026	4,380,415	99.9%	1
Louisiana <sup>f</sup>	1,996,568	4,601,893	43.4%	45
Maine	527,163	664,063	79.4%	22
Maryland	5,060,379	5,204,155	97.2%	4
Massachusetts <sup>f</sup>	4,681,038	6,646,144	70.4%	31
Michigan	7,218,670	7,999,859	90.2%	15
Minnesota	4,134,663	4,184,753	98.8%	2
Mississippi <sup>f</sup>	1,738,478	2,984,926	58.2%	37
Missouri	3,994,342	5,226,360	76.4%	26
Montana	252,299	788,805	32.0%	47
Nebraska	1,015,094	1,425,664	71.2%	30
Nevada	1,870,698	2,544,079	73.5%	27
New Hampshire	383,333	832,631	46.0%	43
New Jersey	1,206,270	8,288,715	14.6%	49
New Mexico	1,210,877	1,571,600	77.0%	25
New York	12,989,488	18,094,452	71.8%	29
North Carolina	6,164,847	7,042,655	87.5%	18
North Dakota	612,560	633,645	96.7%	5
Ohio	9,716,289	10,537,957	92.2%	11
Oklahoma	2,486,718	3,548,057	70.1%	32
Oregon	833,557	3,688,540	22.6%	48
Pennsylvania	5,885,390	10,780,146	54.6%	40
Rhode Island	837,549	997,824	83.9%	20
South Carolina	3,602,956	3,839,526	93.8%	9
South Dakota	646,671	690,759	93.6%	10
Tennessee	5,229,461	5,826,866	89.7%	16
Texas	20,002,506	25,113,656	79.6%	21

Utah	1,384,638	2,676,448	51.7%	42
Vermont	252,920	450,483	56.1%	39
Virginia	6,159,737	6,416,760	96.0%	7
Washington	3,515,797	5,525,840	63.6%	Tied for 35
West Virginia	1,365,697	1,499,749	91.1%	13
Wisconsin	3,597,525	4,025,756	89.4%	17
Wyoming	195,891	449,223	43.6%	44

### Footnotes

a. Census Population Count 2012. Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2010, to July 1, 2012, (NST-EST2012-01). Source: US Census Bureau, Population Division. Release Date: December 2012. Available at <http://www.census.gov/popest/data/intercensal/state/state2012.html> (<http://www.census.gov/popest/data/intercensal/state/state2020.html>) (http://www.cdc.gov/Other/disclaimer.html).

b. Reported in CDC Water Fluoridation Reporting System (WFRS). For purposes of this report, a water system is considered a community water system if so designated by the state drinking water administrator in accordance with the regulatory requirements of the US Environmental Protection Agency. In general, public water systems provide water for human consumption through pipes or other constructed conveyances to at least 15 service connections, or serve an average of at least 25 people for at least 60 days a year. A community water system is a public water system that supplies water to the same population year-round. Available at <http://water.epa.gov/infrastructure/drinkingwater/pws/factoids.cfm> (<http://water.epa.gov/infrastructure/drinkingwater/pws/factoids.cfm>) (http://www.cdc.gov/Other/disclaimer.html).

c. Fluoridated population divided by total population.

d. Fluoridated population divided by population served by community water systems.

e. The increase from 2010 to 2012 in the population served by CWS with naturally occurring fluoride at or above optimal levels is due in part to two changes: 1) several states have improved the completeness and accuracy of their data for the natural fluoride concentration of community water systems and 2) some states had implemented the proposed recommendation of 0.7mg/L as the optimal concentration of fluoride in drinking water by December 31, 2012. See Federal Register Notice. Available at <https://federalregister.gov/a/2011-637> (<https://federalregister.gov/a/2011-637>) (http://www.cdc.gov/Other/disclaimer.html).

f. Population served by CWS exceeded the US Census state population estimate; number of people was reduced by the ratio of the population estimate to the CWS population estimate.

g. Complete data were not available from WFRS; state provided additional information.

h. California is developing new methodology to describe the fluoridated status of water systems that draw water from multiple sources (e.g., ground water, surface water). This report does not reflect California's new methodology.

### Additional Resources

More detail on U.S. Census Bureau estimates can be found at [Calculating Fluoridation Statistics \(/fluoridation/factsheets/engineering/wf\\_statistics.htm\)](#)

Historical fluoridation statistics are available at [Reference Statistics \(/fluoridation/statistics/reference\\_stats.htm\)](#)

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Content source: [Division of Oral Health, National Center for Chronic Disease Prevention and Health Promotion](#)

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**Municipal Water Systems with HDNWM District and Their Natural or Adjusted Fluoride Levels**

Note: Optimal fluoride levels recommended by the U.S. Public Health Service and CDC for drinking water range from 0.7 parts per million (ppm) for warmer climates to 1.2 ppm for cooler climates to account for the tendency for people to drink more water in warmer climates.

<b>County: Antrim</b>	<b>Source: Natural or Adjusted</b>	<b>Level: Measured in milligrams per liter (mg/L or ppm)</b>
Bellaire	Natural	0.0
Central Lake	Natural	0.8
Elk Rapids	Adjusted with Fluorosilicic Acid	0.8
Ellsworth	Natural	0.0
Mancelona	Natural	.35
Maplewood Ridge Condos	Natural	1.3
Sugar Tree Apartments	Natural	1.3
Bay Harbor Club, Lakewood Terrace Associations, Meadowbrook Medical Facility, Pinebrook Condos, Shanty Creek, Sunset Torch Condos	Natural	0.0

<b>County: Charlevoix</b>	<b>Source: Natural or Adjusted</b>	<b>Level: Measured in milligrams per liter (mg/L or ppm)</b>
Boyne City	Adjusted with Fluorosilicic Acid	1.0
Boyne Falls	Natural	1.0
Charlevoix	Adjusted with Fluorosilicic Acid	1.0
Charlevoix Township	Natural	1.7
East Jordan	Adjusted with Fluorosilicic Acid	1.0
GrandVue Medical	Adjusted with Fluorosilicic Acid	1.0
Hemingway Pointe Condos	Natural	1.4
Horton Bay Club	Natural	1.6
Lake Michigan Heights	Natural	0.8
Melrose-Chandler	Natural	1.0
Walloon Lake	Natural	1.3
Boyne Mountain, Hills of Walloon Association, Island View, Nine Mile Pointe, Wildwood Condos	Natural	0.0

County: Emmet	Source: Natural or Adjusted	Level: Measured in milligrams per liter (mg/L or ppm)
Bay Harbor	Natural	0.0
Bay Shore Estates	Natural	1.2
Crooked Tree	Natural	0.8
Harbor Springs	Adjusted with Fluorosilicic Acid	0.7
Lakeside Condos	Natural	1.7
Petoskey	Natural	1.4
Petoskey Park Apartments	Natural	1.6
Radio City Village	Natural	1.0
Spring Lake Condos	Natural	1.7
Tannery Creek Condos	Natural	1.8
Alanson Mobile Home Park, Birchwood Farms, Boyne Highlands, Chalet Estates, Conway Commons, Cottage Cove, Crooked River Apts, Foxfield Apts, Hamlet Village, Hamlet West, Harbor Hills, Hidden Hamlet, Homestead Pines, Island House Condos, Kalchik Estates, L'Arbre Croche, Little Traverse Township, Mill Street, Stondhedge Condos, The Shores on Crooked Lake, Trout Creek Condos, West Traverse Township, Windjammer Condos, Windward Condos, Woodfield MH Community	Natural	0.0 - 0.2

County: Otsego	Source: Natural or Adjusted	Level: Measured in milligrams per liter (mg/L or ppm)
Beaver Creek Resort	Natural	0.0
Fairway Lakes Condos	Natural	0.0
Gaylord	Natural	0.1
Glen Meadows Condos	Natural	0.0
Headwaters Condos	Natural	0.0
Horsell Manor	Natural	0.0
Lakeview Apts	Natural	0.0
Nottingham Forest	Natural	0.0
Treetops Resort	Natural	0.0
West Park Apts	Natural	0.0

#### Bottled water:

The FDA standards of quality state that domestic bottled water with no added fluoride may contain between 1.4 and 2.4 milligrams per liter (mg/L) fluoride, depending on the annual average daily air temperatures at the location where the bottled water is sold. Domestic bottled water with added fluoride can contain between 0.8 and 1.7 mg/L fluoride, depending on the annual average daily air temperatures where the bottled water is sold. Imported bottled water with no added fluoride may not contain more than 1.4 mg/L fluoride, and imported bottled water with added fluoride may not contain more than 0.8 mg/L fluoride.

**Tooth Decay Referral Rates**  
**HDNWM School Oral Health Screening Program**  
**2012 – 2013 School Year**

<b>School District</b>	<b>Fluoridated Water Supply at CDC Recommended Level</b>	<b>Percentage of Students Referred for Treatment of Tooth Decay</b>
Boyne City	Yes	8.6%
Gaylord	No	28%
Mancelona	No	30%
Pellston	No (No Municipal water supply)	23%
East Jordan	Yes	8%



October 2013

This FAQ is meant to answer many key questions about the benefits and safety of fluoridation.

**Q: What is fluoride and how does it benefit dental health?**

A: Fluoride is a mineral that exists naturally in nearly all water supplies. Research proves that at a certain level in drinking water, fluoride prevents tooth decay. This optimal level is reached when a public water system adjusts—either increasing or lowering—the level of fluoride.

**Q: I recently found the website of a group that opposes fluoridation. This group claims that the connection between fluoridation and cavity prevention isn't solid. Is that true?**

A: No, it is not true. There is solid, consistent evidence supporting fluoride's role in cavity prevention. Studies show that fluoridation reduces tooth decay by 18 to 40 percent. There is substantial evidence that fluoridated water not only prevents the prevalence of decay but the severity of decay as well.

**Q: Does fluoride in drinking water protect only the teeth of children or does it benefit everyone?**

A: People of all ages benefit from drinking water that is optimally fluoridated. Oral health is important throughout a person's life. In the 1950s, before water fluoridation was common, most people over the age of 65 had lost their teeth. Now, after decades of widespread fluoridation, more seniors are keeping most or all of their teeth. Between 1972 and 2001, the rate of edentulism—losing all of one's teeth—dropped 26 percent among lower-income seniors and fell 70 percent among upper-income seniors.

**Q: What do leading medical and health organizations say about drinking water that is optimally fluoridated?**

A: The American Academy of Pediatrics, the American Dental Association, the American Medical Association and many other respected medical or health organizations recognize the health benefits of fluoridation. The U.S. Centers for Disease Control and Prevention called water fluoridation "one of 10 great public health achievements of the 20th century."

**Q: Federal health officials released a proposed recommendation in 2011 that public water systems reduce the level of fluoride in drinking water. Exactly what was the recommendation and why was this new level set?**

A: In January 2011, the U.S. Department of Health and Human Services (HHS) recommended the optimal level of fluoride in public water systems should be 0.7 milligrams per liter (mg/L) of water. This is a change from the previous recommendation that the optimal level would vary by a region's climate (average temperatures) within the range of 0.7 to 1.2 mg/L. This new recommendation by HHS recognizes these scientific findings: 1) Americans today are getting fluoride from more sources than they were when the original level was set, and 2) the water intake of children does not vary by climate or region. This new fluoride level demonstrates that federal health officials are periodically reviewing research and relying on the best science to update—if and when appropriate—their recommendations on fluoridated water.

**Q: Are many communities planning on completely removing fluoride from water because of the recent federal announcement on the fluoride level?**

A: Many communities are reviewing their fluoride levels and planning to adjust those levels to meet the new recommendation. HHS and leading health experts do *not* support removing fluoride from water to a level below the recommended level because this would deprive people of cavity protection. In fact, the American Dental Association welcomed HHS' new fluoride level and said that water fluoridation remains "one of our most potent weapons in disease prevention." In Grand Rapids, Michigan—the first U.S. city that optimally fluoridated its water system—the city's daily newspaper wrote an editorial noting that the new HHS recommendation "should not feed the flawed notion . . . that fluoride must be removed entirely from drinking water."

**Q. What impact will the new fluoride level have on Americans who are served by a public water system that's fluoridated?**

A: The new optimal fluoride level that federal health officials have recommended will have a positive impact. First, it will continue to protect teeth by helping to reduce tooth decay. Second, the new level will minimize the chances of fluorosis, a condition that typically causes a minor discoloration of teeth that is usually visible only to a dentist. The new HHS recommendation reflects the fact that Americans today receive fluoride from more sources (toothpaste, mouth rinses and other products) than they were getting several decades ago.

**Q: How many Americans receive water that is optimally fluoridated?**

A: Roughly 75% of Americans whose homes are connected to a community water system receive fluoride-adjusted water. Some communities have been doing so for over 60 years. Michigan has over 90% of the population on community water systems accessing fluoridated water.

**Q: Water fluoridation helps to prevent tooth decay, but is that really a concern in the U.S. anymore?**

A: Yes, it remains a concern. Although dental health has improved for many Americans, tooth decay remains the most common chronic childhood disease—five times more prevalent than asthma. Tooth decay causes problems that often last long into adulthood, affecting kids' schooling and their ability to get jobs as adults.

**Q: If I use fluoridated toothpaste, am I getting enough fluoride to protect against decay?**

A: No. The benefits from water fluoridation build on those from fluoride in toothpaste. Studies conducted in communities that fluoridate water in the years after fluoride toothpastes were widely used have shown a lower rate of tooth decay than communities without fluoridated water. The author of a 2010 study noted that research has confirmed "the most effective source of fluoride to be water fluoridation." Water fluoridation provides dental benefits to people of all ages and income groups without requiring them to spend extra money or change their daily routine.

**Q: Do any states have laws guaranteeing residents' access to fluoridated water?**

A: Twelve states and the District of Columbia have laws designed to ensure access to fluoridated water. Forty-three of the 50 largest cities in the U.S. fluoridate their drinking water. Research shows that every \$1 invested in water fluoridation saves \$38 in unnecessary dental costs.

Contact Susan Deming, MDCH Education/Fluoridation Coordinator for further information:  
[demings@michigan.gov](mailto:demings@michigan.gov) 517 373-3624





## Savings from Water Fluoridation: What the Evidence Shows

Research shows that water fluoridation offers perhaps the greatest return-on-investment of any public health strategy. The reduction in just the costs of filling and extracting diseased teeth—not counting reductions in lost work time and dental pain—more than makes up for the cost of fluoridation. In recent decades, the evidence showing savings has grown:

- For most cities, every \$1 invested in water fluoridation saves \$38 in dental treatment costs.<sup>1</sup>
- A **Texas** study confirmed that the state saved \$24 per child, per year in Medicaid expenditures for children because of the cavities that were prevented by drinking fluoridated water.<sup>2</sup>
- A 2010 study in **New York State** found that Medicaid enrollees in less fluoridated counties needed 33 percent more extractions and other corrective procedures than those in counties where optimal fluoridation was much more common.<sup>3</sup> As a result, the treatment costs per Medicaid recipient were \$23.65 higher for those living in less fluoridated counties.<sup>4</sup>
- Researchers estimated that in 2003 **Colorado** saved nearly \$149 million in unnecessary treatment costs by fluoridating public water supplies—average savings of roughly \$61 per person.<sup>5</sup>
- By protecting the enamel of teeth, fluoridation makes it less likely that decay will develop into more serious dental problems that drive people to hospital emergency rooms (ERs)—where treatment costs are high. A 2010 survey of hospitals in **Washington State** found that dental disorders were the leading reason why uninsured patients visited ERs.<sup>6</sup>
- A 1999 study compared **Louisiana** parishes (counties) that were fluoridated with those that were not. The study found that low-income children in communities without fluoridated water were three times more likely than those in communities with fluoridated water to receive dental treatment in a hospital operating room.<sup>7</sup>
- Scientists who testified before Congress in 1995 estimated that **national savings** from water fluoridation totaled \$3.84 billion each year.<sup>8</sup>

### Sources:

<sup>1</sup> “Cost Savings of Community Water Fluoridation,” U.S. Centers for Disease Control and Prevention, accessed on March 14, 2011 at [http://www.cdc.gov/fluoridation/fact\\_sheets/cost.htm](http://www.cdc.gov/fluoridation/fact_sheets/cost.htm).

<sup>2</sup> “Water Fluoridation Costs in Texas: Texas Health Steps (EPSDT-Medicaid),” Texas Department of Oral Health Website (2000), [www.dshs.state.tx.us/dental/pdf/fluoridation.pdf](http://www.dshs.state.tx.us/dental/pdf/fluoridation.pdf), accessed on August 1, 2010.

<sup>3</sup> Kumar J.V., Adekugbe O., Melnik T.A., “Geographic Variation in Medicaid Claims for Dental Procedures in New York State: Role of Fluoridation Under Contemporary Conditions,” *Public Health Reports*, (September-October 2010) Vol. 125, No. 5, 647-54.

<sup>4</sup> The original figure (\$23.63) was corrected in a subsequent edition of this journal and clarified to be \$23.65. See: “Letters to the Editor,” *Public Health Reports* (November-December 2010), Vol. 125, 788.

<sup>5</sup> O’Connell J.M. et al., “Costs and savings associated with community water fluoridation programs in Colorado,” *Preventing Chronic Disease* (November 2005), accessed on March 12, 2011 at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1459459/>.

<sup>6</sup> Washington State Hospital Association, *Emergency Room Use* (October 2010) 8-12, <http://www.wsha.org/files/127/BRreport.pdf> (accessed February 8, 2011).

<sup>7</sup> “Water Fluoridation and Costs of Medicaid Treatment for Dental Decay – Louisiana, 1995-1996,” *Morbidity and Mortality Weekly Report*, (U.S. Centers for Disease Control and Prevention), September 3, 1999, accessed on March 11, 2011 at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4834a2.htm>.

<sup>8</sup> Michael W. Easley, DDS, MP, “Perspectives on the Science Supporting Florida’s Public Health Policy for Community Water Fluoridation,” *Florida Journal of Environmental Health*, Vol. 191, Dec. 2005, accessed on March 16, 2011 at <http://www.doh.state.fl.us/family/dental/perspectives.pdf>.

# FLUORIDATION

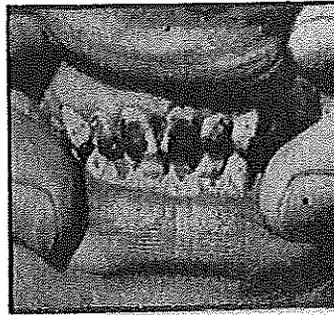
## Making Tooth Decay Go Away

*By Peter L. Platteborze*

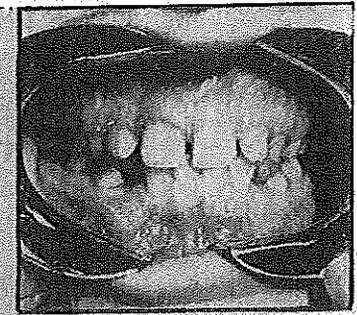
It all began with a keen observation that fascinated a young dentist. His research efforts culminated a half-century later in a landmark experiment—involving Grand Rapids, Michigan—that revolutionized dental medicine.

Dentist Frederick McKay was the first to study the phenomenon known as "Colorado Brown Stain." Courtesy of Science Photo Library.

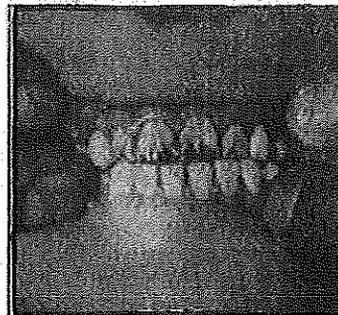
## CHILDREN WHO CALCIFIED THEIR PERMANENT TEETH WHILE USING:



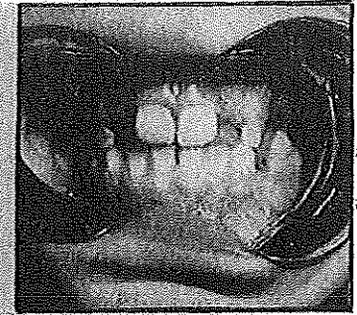
"Old" Bauxite Water  
Mottled Enamel: Severe



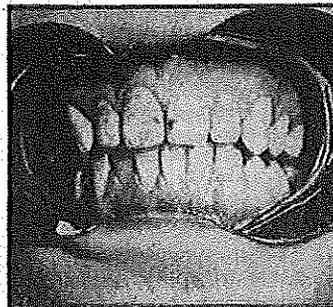
"New" Bauxite Water  
Normal



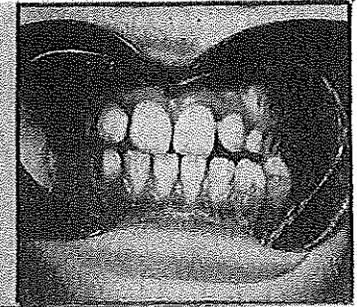
"Old" Oakley Water  
Mottled Enamel: Moderate



"New" Bauxite Water  
Normal



"Old" Oakley Water  
Mottled Enamel: Mild



"New" Oakley Water  
Normal

Before-and-after photos demonstrate fluoride's ability to reduce the occurrence of enamel stains. Courtesy of the American Journal of Public Health.

In 1901, Frederick McKay, a recent dental school graduate, decided to open a practice in his new hometown of Colorado Springs, Colorado. Soon after arriving, he was shocked to see that many locals had grotesque, yellowish-brown stains on their teeth. In some people, these stains were so severe that their teeth appeared the color of chocolate candy. McKay reviewed the available dental literature but could find no reference to this mysterious ailment.

Working with the local dental society, McKay discovered that this condition was present in nearly 90 percent of the city's locally born children. In 1909, he completed a collaborative study with renowned dental researcher G.V. Black that resulted in two additional insights. First, they determined that the discolored enamel occurred in children prior to developing their adult teeth. Those people whose permanent teeth had developed without the stains did not risk having their teeth turn brown. Second, and ultimately the most important finding, the teeth afflicted with what they called "Colorado Brown Stain" were inexplicably resistant to decay. McKay surmised that an unknown compound in the city's water supply was causing this disorder. This water-causation hypothesis was held in great skepticism by the general dental community.

In 1923, McKay's hypothesis received a major boost. That year, he traveled across the Rocky Mountains to Oakley, Idaho to investigate reports about peculiar brown stains found on the teeth of that community's children. Residents told McKay that the stains started to appear shortly after the opening of a communal water pipeline from a warm spring five miles away. While analysis of this water didn't reveal anything unusual, he advised the town leaders to abandon the pipeline and gather their water from a different nearby spring. Within a few years of doing so, the young children of Oakley began developing normal, unstained adult teeth.

### PHS Gets Involved

Confirmation of the water-causation hypothesis occurred

in 1928, when McKay and Dr. Grover Kempf of the U.S. Public Health Service (PHS) investigated new reports about brown stains in Bauxite, Arkansas, a mining town owned by the Aluminum Company of America (ALCOA). They discovered that stained teeth were prevalent among the local children, but nonexistent in a nearby town that was consuming water from a different source. While their



analysis of Bauxite's drinking water revealed nothing unusual, it did attract the attention of ALCOA's chief chemist, who—fearful of negative publicity for his company—prudently ran his own tests. Fortunately for all involved, his laboratory had some of the most sophisticated water-analysis technology at the time. The results

showed that Bauxite's drinking water had surprisingly high levels of fluoride, the ionic form of the element fluorine. This finding was conveyed in a report to McKay and PHS.

In 1931, Dr. H. Trendley Dean initiated a major project to investigate the epidemiology of Colorado Brown Stain (now renamed dental or enamel fluorosis). Equipped with an improved test for measuring fluoride levels in water, Dean and his staff traveled across America to analyze samples from 345 different communities. From this data, they concluded that fluorosis was most common in locations with the highest fluoride levels, and that these same places inversely had a lower incidence of tooth decay. Further, their data indicated that people who lived where drinking water

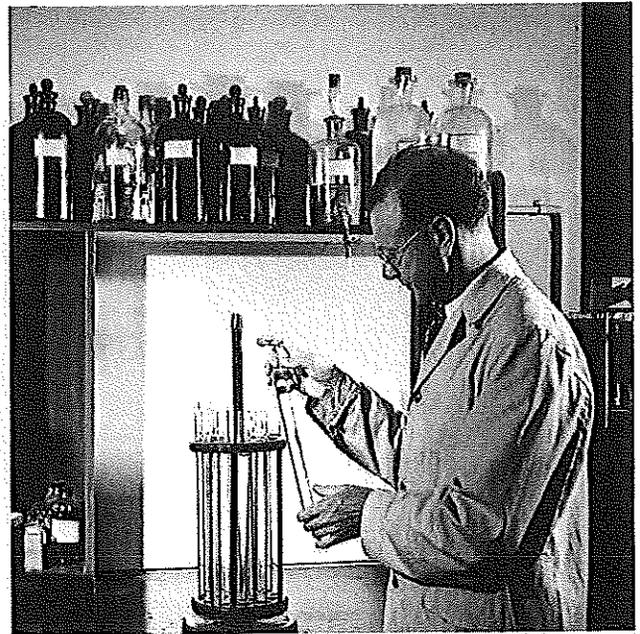
had levels at or above one part fluoride to one million parts water (ppm) had significantly fewer dental cavities than those who resided where fluoride levels were lower. (One ppm is roughly equivalent to one thousandth of a gram of fluoride per liter of water,

or one drop of

fluoride in a bathtub full of water.) Dean showed that this concentration rarely caused enamel fluorosis, and the

few affected only had an inconsequential mild form that appeared as faint white lines. Lastly, they concluded that the presence of fluoride did not affect the appearance, taste, or smell of drinking water.

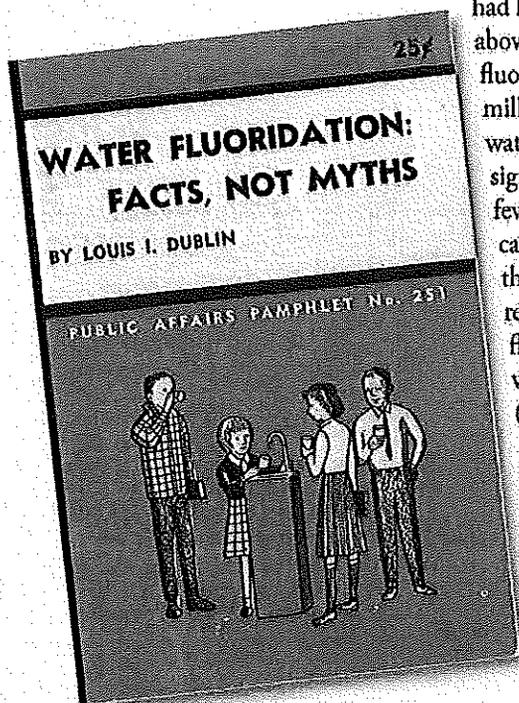
With this knowledge, Dean then decided to champion the revolutionary idea that fluoride could be added to a community's drinking water as a means of preventing tooth decay.



### Michigan as a Laboratory

During his cross-country trip, Dean had noticed that West Michigan drinking water had naturally low fluoride levels around 0.1 ppm, and that residents ingesting this water had naturally high levels of cavities. He approached the Grand Rapids City Commission with the proposal that their city serve as the proving ground to test whether community water fluoridation was a feasible means of reducing tooth decay. In 1944, after numerous consultations with experts from PHS, the Michigan Department of Health, and the University of Michigan, the commission voted to add fluoride to the city's public water supply the following year. The Grand Rapids water fluoridation study was originally sponsored by the U.S. Surgeon General's office, but in 1948 was delegated to the National Institute of Dental Research (NIDR), with Dean

Top left: PHS researcher H. Trendley Dean designed the original fluoridation experiment for Grand Rapids. Courtesy of the National Library of Medicine. Top right: Inside the city's filtration plant laboratory. Courtesy of the City of Grand Rapids Archives. Left: A pamphlet was issued to address residents' safety concerns. Courtesy of the Grand Rapids Public Library.



serving as its first director.

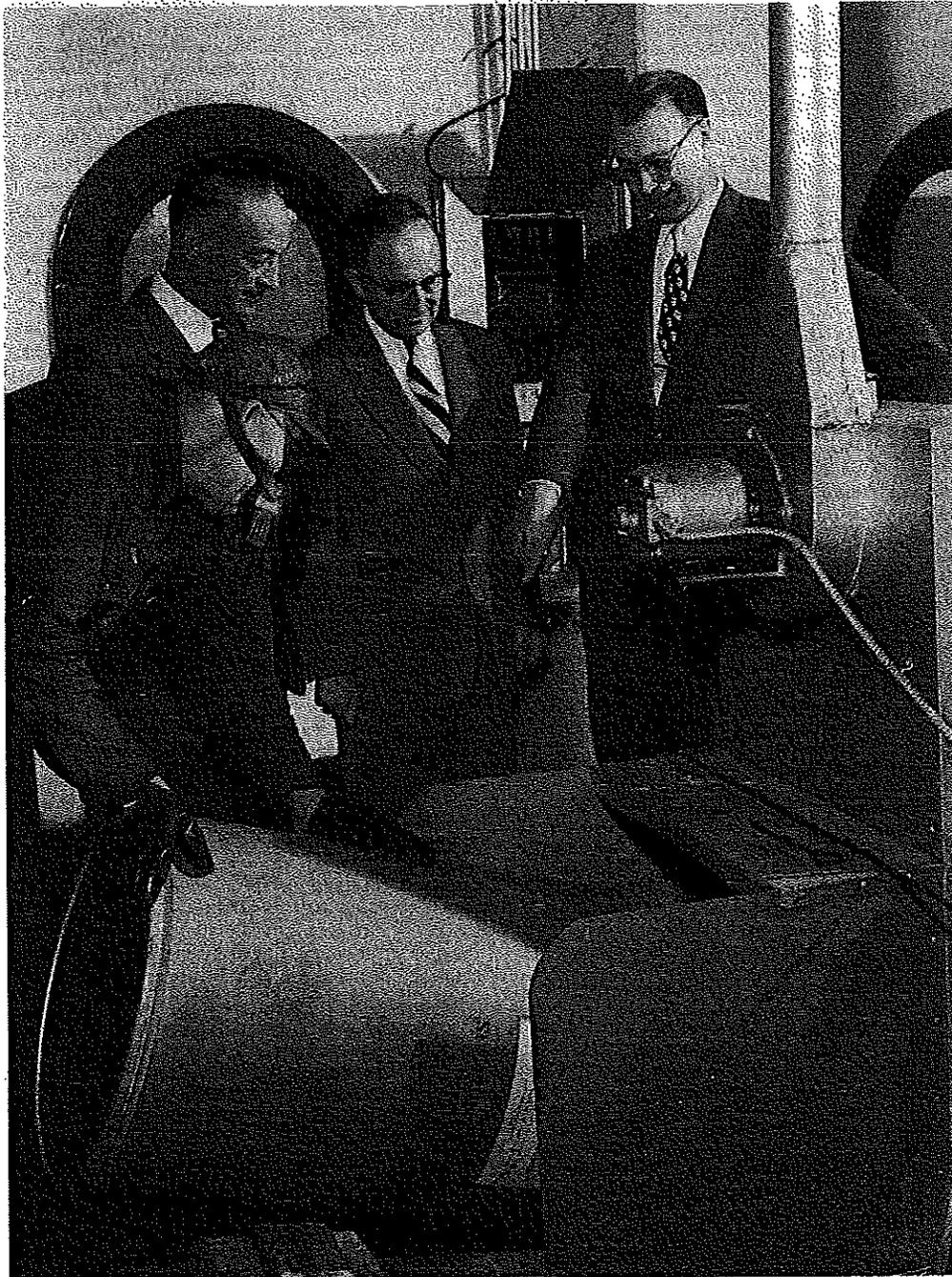
Dean designed the community water fluoridation experiment in a logical manner. He focused on children because they were quite susceptible to developing cavities, were easily monitored by being centrally located in school most of the year, and would benefit the most if the clinical study were successful. As in any good experiment, he designated a paired equivalent control group that would not receive the fluoridated water during the course of the study. The nearby city of Muskegon was chosen to be the control group, because its residents consumed water with the

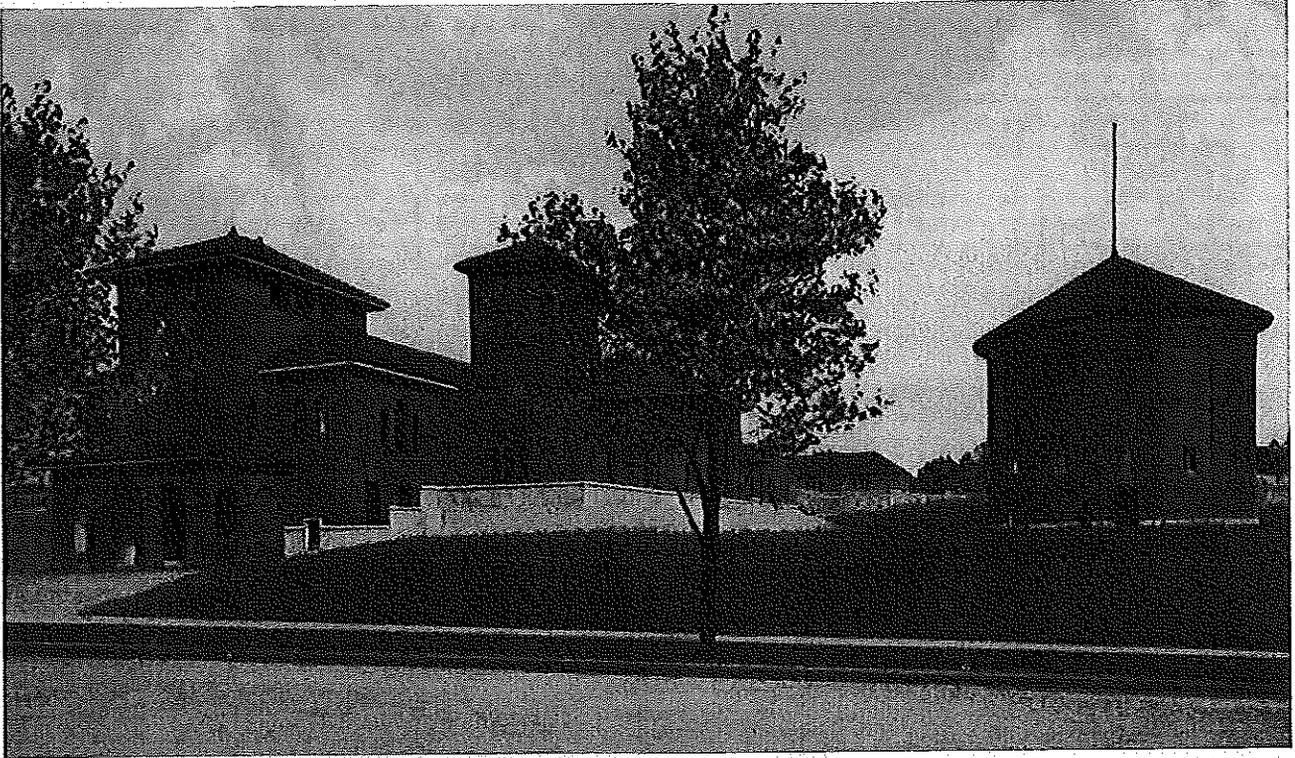
same naturally low levels of fluoride as Grand Rapids, and its schoolchildren had similarly high cavity rates. In 1944, a baseline study that involved detailed dental exams was conducted on nearly all schoolchildren ages 4-17 years in both cities. In addition, baseline data was collected in Aurora, Illinois, where the public water supply had a natural fluoride level of 1.2 ppm and there was a much lower frequency of cavities.

On January 25, 1945, Grand Rapids became the first city in the world to implement water fluoridation by adjusting the fluoride content of its water supply to the PHS-proposed

optimum of 1.0 ppm. During the planned 10- to 15-year study to evaluate the effects of fluoridation, researchers performed annual dental exams to determine the tooth decay rate among Grand Rapids' almost 29,000 schoolchildren and those in Muskegon and Aurora. After just five years, news of the surprising initial findings had begun to leak, forcing Dean to make a premature public announcement. Researchers had determined that, among Grand Rapids children born after water fluoridation began, the cavity rate had declined by more than 60 percent and was now similar to the low level observed in Aurora. In October 1950, they published the initial results of the Grand Rapids clinical study, which unequivocally

Plant supervisor W.I. Harris (pointing) joins others in observing the addition of fluoride to Grand Rapids' water supply. Courtesy of the City of Grand Rapids Archives.





Grand Rapids' Monroe Avenue Water Filtration Plant graced a 1940s postcard. Courtesy of the Grand Rapids Public Library.

concluded that the benefits of water fluoridation strongly outweighed any negative effects.

This proved to be a significant scientific milestone that revolutionized dental care. For the first time in history, tooth decay would become a preventable disease for most people.

After the Grand Rapids study began, three additional paired city studies were initiated by the PHS to greatly expand the collected data and permit researchers to arrive at even more relevant conclusions. Each of these public health studies—conducted in Newburgh and Kingston, New York; Evanston and Oak Park, Illinois; and Brantford and Sarnia, Ontario—showed dramatic declines in cavity rates, like those previously observed in Grand Rapids. Studies on other continents soon followed and also confirmed the merits of municipal water fluoridation. Due to the overwhelming success of the pilot study, Muskegon successfully petitioned to be released early from its status as a control group and began fluoridating its water supply in July 1951.

### How Fluoride Works

In the 1950s, the mechanism behind fluoride's ability to prevent tooth decay was not understood, but researchers now believe it acts in three ways. Tooth decay is typically the result of erosion of the hard protective enamel due to an acidic environment in the mouth. This is commonly caused by oral bacteria that convert sugar from our food to potentially

destructive organic acids. Fluoride directly inhibits this bacterial process and thus maintains higher pH levels in the mouth.

Fluoride also strengthens teeth as they form in children by chemically bonding with calcium and being incorporated into the structure of tooth enamel. This calcium-fluoride complex is more resistant to tooth decay than natural enamel. Lastly, fluoride has the ability to remineralize tooth enamel that has been lost in formed teeth. In effect, fluoride limits the severity of tooth decay by stopping the process and, to some degree, even reversing the decay process.

Fluoride is just as important to older adults as children because it impedes the decay of exposed tooth roots from receding gums. Beyond its impact on teeth, ingested fluoride also binds with calcium, forming denser bones. For this reason, it has occasionally been prescribed to treat osteoporosis.

### Cost of Treatment

Fluoridation is one of many public health interventions from which Americans benefit daily. (Other interventions currently employed to lower the prevalence of diseases include the addition of iodine to table salt, vitamin D to milk, and folic acid to breads and cereals.) The general scientific consensus is that water fluoridation is the fairest and most efficient means for everyone in a community



to benefit, regardless of the financial ability to acquire dental care. The average cost for a community to fluoridate its water is estimated to be about one

dollar per person per year. In other terms, a person can consume a lifetime of fluoridated water for about the price of one dental filling. It is worth noting that fillings are not as strong as natural teeth, and have an average life of only about a decade.

### Changing the PPM

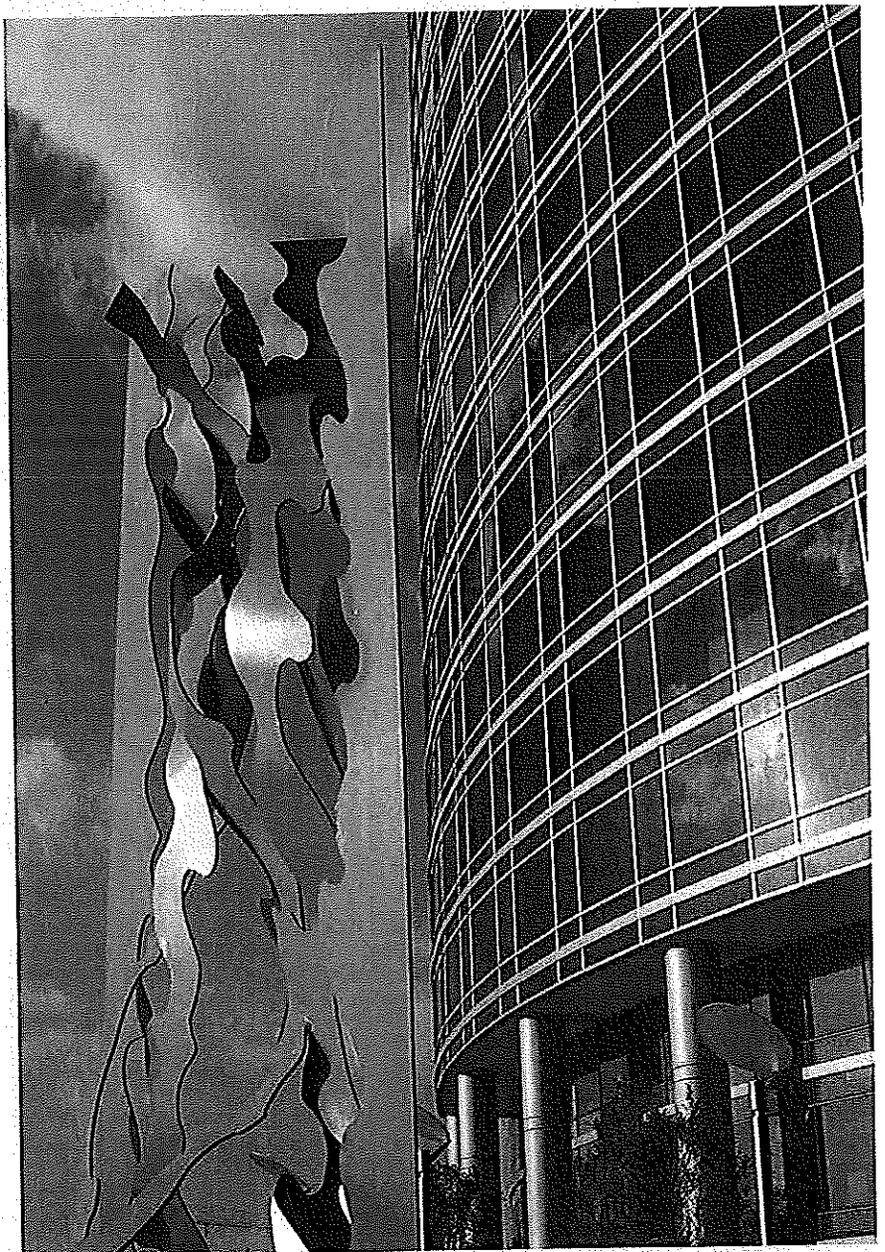
In January 2011, the U.S. Department of Health and Human Services reduced the recommended level of fluoride to prevent tooth decay to 0.7 ppm—the first such change since the Grand Rapids/Muskegon studies were performed 60 years earlier. The reduction was prompted by recent research from the Centers for Disease Control (CDC) that showed a rise in the occurrence of dental fluorosis over the last two decades as well as a less significant reduction in childhood cavities.

The reason for these findings can be attributed to one thing: Simply put, too much fluoride can be too much of a good thing. In addition to fluoridated water, Americans now ingest fluoride through toothpastes, gels, varnishes, and mouthwashes. Because treated water and fluoride-enhanced products provide different yet complementary benefits, the CDC recommends that consumers continue to use both—in moderation.

Top: The city's schoolchildren received periodic dental exams during the experiment. Courtesy of the National Library of Medicine. Right: A sculpture titled "Steel Water" honors Grand Rapids' role in the effort to prevent tooth decay. Courtesy of Chase Klinesteker.

Since its adoption in the 1950s, water fluoridation has resulted in a significant improvement in the oral health of millions of Americans. Tooth loss is no longer considered inevitable, and adults are retaining most of their teeth for a lifetime. These results have saved them billions of dollars in avoidable medical expenses. Based upon this impact, the Centers for Disease Control have proclaimed fluoridation one of the 10 great public health achievements of the 20th century. And it all began in Michigan.

*Michigan native Peter L. Platteborze is an active-duty U.S. Army lieutenant colonel and biochemist at the San Antonio (TX) Military Medical Center, where he serves as a laboratory medical director.*



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**From:** Sean - Fluoride Free Lethbridge [mailto:sean@fluoridefreelethbridge.com]  
**Sent:** Wednesday, April 23, 2014 4:51 PM  
**To:** Dan Meads; info; Michael Cain  
**Cc:** bgohs@boynegazette.com; Cindy Grice  
**Subject:** An Exhortation to Follow the Example of Forward Thinking Communities

Good day Mr. Cain and Mr. Meads,

I was recently forwarded an article in the *Boyne City Gazette* stating that your community is soon to revisit the issue of artificial water fluoridation (AWF). Many other communities across North America have been in a similar position of late. To fluoridate or not to fluoridate? It's a highly charged issue to be sure.

I understand you and the water treatment plant staff are not health experts and you are following guidelines set up by your public health authority. I also understand you are using fluoridation chemical certified by the NSF and you are only adding the amount necessary to meet "optimal levels."

These points aside, I would ask you to seriously consider all the facts on this important issue. Why is there such strong promotion of water fluoridation from government organizations (CDC, ADA, FDA, EPA, etc.) and medical professionals? Do they *really* know the science? I assure you they do not. In fact, 1500 scientists, lawyers, engineers and other professional employees of the EPA Headquarters Union in Washington, D.C. have opposed fluoridation since 1985.

We have clearly shown how **the science is overwhelmingly *against* AWF** in the attached rebuttal of *our* fluoridation-promoting health authority. The scientific evidence is indisputable.

We here in Lethbridge, Alberta, Canada are one of the few remaining communities in southern Alberta that still fluoridates its drinking water. However, we are confident this is about to change. As a catalyst to change, we have issued a rigorous scientific rebuttal that proves the incompetence and deception of Alberta Health Services in their promotion of artificial water fluoridation. The same arguments and tactics are used by **ALL** fluoride-promoting health authorities, so this information is of utmost importance and relevance to you as well.

The trend in Canada and the USA is *away* from the misguided, harmful practice of fluoridating drinking water. As an example, just last month the city of Saint John, New Brunswick voted to cease fluoridating their drinking water, **joining 30 other Canadian communities ending the practice in the last three years.**

Mayor Mel Norton said in an interview with CBC, "We are trying to be exceptional stewards of the taxpayers' dollars in this city with a view to also being sensitive of providing an exceptional quality of life," said Norton. "As so on that basis, I'll cast my vote with the nays." (The full article is at: <http://www.cbc.ca/news/canada/new-brunswick/saint-john-council-votes-to-stop-putting-fluoride-in-water-1.2567770>). This decision leaves just one

community in all of New Brunswick that still adds hydrofluorosilicic acid (aka fluoride) to its drinking water.

Here is a list of communities throughout the world who have ended artificial water fluoridation in the last 3 years: [http://fluoridealert.org/content/communities\\_2010/](http://fluoridealert.org/content/communities_2010/)

With the hope that the citizens of Boyne City will follow the trend of cities across the USA, Canada and the world and say goodbye to artificial water fluoridation for good.

To the health of your citizens,

Sean Fife

[sean@fluoridefreelethbridge.com](mailto:sean@fluoridefreelethbridge.com)

[www.fluoridefreelethbridge.com](http://www.fluoridefreelethbridge.com)

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**The Fallacies of  
Alberta Health Services Position on  
Artificial Water Fluoridation  
Exposed**

By Fluoride Free Lethbridge

March 2014

[FluorideFreeLethbridge.com](http://FluorideFreeLethbridge.com)

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## Leaked Memo Exposes Incompetence of Alberta Health Services

An anonymous source leaked to Fluoride Free Lethbridge an internal Alberta Health Services memo (in blue), which was distributed to front-line staff of AHS South Zone, instructing them on how to answer questions in defense of fluoridation. The following document is a comprehensive rebuttal (in black) exposing the gross incompetence of AHS on artificial water fluoridation.

How is it possible Alberta Health Services and Health Canada are so fundamentally wrong on such an important issue?

At the expense of their professional careers, many former proponents<sup>1</sup> of fluoridation are now its fiercest opponents. Why? Because they have *thoroughly examined* the evidence and found it preponderantly against artificial water fluoridation.

This is in stark contrast to AHS Medical Officers James Talbot,<sup>2</sup> Richard Musto,<sup>3</sup> Vivien Suttorp,<sup>4</sup> Ada Bennett,<sup>5</sup> Gerry Predy,<sup>6</sup> Luke Shwart,<sup>7</sup> Digby Horne<sup>8</sup> and others who lack even a basic understanding of the issue. They continue to publicly disseminate misinformation, giving false assurances to an unsuspecting public that looks to them for authoritative guidance on these matters. (*Clicking on an endnote number will take you to the endnotes at the bottom of this document.*)

Western European nations investigated fluoridation 40 years ago and rejected it. 97% of Western Europe does NOT artificially fluoridate its water, nor do several other prominent nations such as Russia, Japan and China. In the last 3 years alone, 30 Canadian communities have rejected fluoridation.

The question to be asked is, “How is it that Alberta and Canada continue to fluoridate when 95% of the world has chosen not to?”

“I am aware that many object to the severity of my language; but is there not cause for severity? I will be as harsh as truth, and as uncompromising as justice. On this subject, I do not wish to think, or to speak, or write, with moderation. No! No! Tell a man whose house is on fire to give a moderate alarm; tell him to moderately rescue his wife from the hands of the ravisher; tell the mother to gradually extricate her babe from the fire into which it has fallen; — but urge me not to use moderation in a cause like the present. I am in earnest — I will not equivocate — I will not excuse — I will not retreat a single inch — AND I WILL BE HEARD.”

- William Lloyd Garrison (1805 - 1879)

### Fluoridation FAQ for AHS Staff

*When a public health measure causes confusion or concern, the responsible action is to review research and learn the facts. Alberta Health Services (AHS) is committed to reviewing the evidence about water fluoridation and making appropriate recommendations for public health and safety. It is our duty.*

In alignment with Health Canada's recent detailed review of the research endorsing safety and effectiveness, AHS and Alberta Health strongly support water fluoridation as a public health measure. This FAQ adds depth to the *Fluoridation in Alberta* public information page.

AHS and Health Canada are *not* reviewing the facts responsibly or fulfilling their duty as they claim. They cite only **industry-funded** pro-fluoride literature and ignore the hundreds of peer-reviewed, **INDEPENDENT** studies that unequivocally indict water fluoridation as the cause of many grave health problems.<sup>9</sup>

#### 1. Is water fluoridation safe?

Safety is established by toxicological studies and human trials. No study has ever shown fluoridation to be safe,<sup>10</sup> but many have shown harm. Is it any wonder AHS and HC have never provided evidence of safety?

#### 2. Is water fluoridation effective?

Effectiveness is established by double-blind randomized controlled trials. No such studies exist. On the contrary, **numerous studies indicate cavity rates have declined** after water fluoridation was halted.<sup>11</sup>

Even fluoridation promoters, such as the Centers for Disease Control (CDC) and American Dental Association (ADA) admit fluoride is beneficial in **topical application only**. It makes no sense whatsoever to ingest what is only effective topically.<sup>12</sup>

#### 3. So why did Health Canada's recent review endorse the "safety and effectiveness" of fluoridation?

In the review endorsing fluoridation, of the six panellists, four were dentists, well-known promoters of fluoridation. The other two were involved in compiling a pro-fluoride report at the time of their selection. Health Canada chose not one dissenting voice, though highly qualified candidates existed.<sup>13</sup>

In contrast to Health Canada's self-fulfilling review, the twelve-member panel selected for the National Research Council Report (2006) was composed of scientists actively promoting fluoridation, those opposed to it, and still others who had no stated position. This most comprehensive and balanced review ever done on fluoridation found many serious health effects.<sup>14</sup>

**4. If water fluoridation is safe and effective, why have health departments in many other countries thoroughly examined and decided against the practice?**

In Western Europe, 97% of the population drinks non-fluoridated water. This is what European health officials have to say about fluoridation.<sup>15</sup>

To date, 14 Nobel Laureates in medicine and chemistry have unequivocally opposed fluoridation;<sup>16</sup> over 4,600 professionals have signed the *Professionals Statement to End Water Fluoridation*;<sup>17</sup> and 1500 scientists, lawyers, engineers and other professional employees of the EPA Headquarters Union in Washington, D.C. have opposed fluoridation since 1985.<sup>18</sup>

The vast majority of the international community rejects water fluoridation as neither safe nor effective.

Evidence screams for the precautionary principle, "When in doubt, don't."

**What type of fluoride is used to fluoridate water?**

The most commonly used compound to fluoridate water is fluorosilicic acid, a co-product of the phosphate fertilizer industry. Apatite rock is ground up and treated to produce several products including a gas which is recovered and condensed into a solution called hydrofluosilicic acid or fluorosilicic acid. In concentrated form almost all of the water treatment chemicals used at a water plant, such as chlorine gas and the fluoride compounds, are toxic to humans. Added to the drinking water in very small amounts, the fluoride chemicals break apart virtually 100 percent into their various components (ions) and are very stable, safe and non-toxic.

**This statement is incredibly misleading on several points:**

1. Fluorosilicic acid (FSA) is not an intentional "co-product"; it is **toxic hazardous waste**, scrubbed from the smokestacks of fertilizer plants by law because it is a **lethal pollutant**. In fact, it's been called "the most damaging environmental pollutant of the Cold War."<sup>19</sup>
2. Even though chlorine is toxic, municipal water disinfection is necessary to prevent life-threatening illness and infection. On the other hand, water fluoridation

contributes nothing to public safety. Indeed, science has proven fluoridation detrimental to public health and cannot be remotely justified.

3. Suggesting that diluting toxic substances renders them “non-toxic” or even beneficial is absurd. Dilution of **bio-accumulative toxins**<sup>20</sup> such as fluoride only delays the onset of toxicity symptoms. Dilution does not magically render fluoride non-toxic.
4. The fact that FSA breaks apart into ions is **NOT** at all a point of safety assurance as AHS states. Dissociation is precisely the principal reason it causes so much harm.<sup>21</sup> Furthermore, it is what results in the acidic environment of the stomach that matters. There, fluoride ions largely become a component of hydrofluoric acid, which crosses the stomach lining, entering the bloodstream and circulating throughout the body.

*“If the stuff [FSA] gets out into the air, it’s a pollutant; if it gets into the river, it’s a pollutant, if it gets into a lake, it’s a pollutant; but if it goes right straight into your drinking water system, it’s not a pollutant. That’s amazing!”*

*- Dr. J. William Hirzy, Senior EPA Chemist and VP of the US EPA Headquarters Union*

#### **Is fluorosilicic acid contaminated with toxins?**

Fluorosilicic acid may contain traces of metal compounds and other impurities. However, it cannot be added to water unless it meets the strict quality standards of NSF International, a non-profit, non-governmental agency.

#### **This is a dangerous false assurance.**

1. The National Sanitation Foundation (NSF) was forced to admit in a court deposition the necessary toxicological studies required for Standard 60 certification of FSA were never performed.<sup>22</sup>
2. Due to this lack of toxicological analysis, in April 2013, Utah passed a law requiring suppliers to provide certificates of analysis detailing all contaminants in fluoridation chemicals. This law followed several FSA spills where contaminants were discovered to be significantly in excess of allowable limits for safe drinking water.<sup>23</sup>

3. Although it is incredible and outrageous, **no requirement for disclosure of analysis** exists in Canada. Those responsible for fluoridation don't know what is being added to our water, though they are **morally and legally obligated** to know and to provide "safe, clean and reliable drinking water."<sup>24 25</sup>

Arsenic is a common concern. NSF quality testing has revealed that most fluoride additive samples do *not* have detectable levels of arsenic<sup>2</sup>. For fluoride samples that do test positive for arsenic, the average consumer would ingest approximately 1% of the allowable amount over an entire year. The 2012 November Consumer Reports magazine reviewed supermarket products and found that many common foodstuffs contain much more arsenic than would ever be found in fluoridated water.

**Arsenic is a toxic and bio-accumulative carcinogen.** Adding it to the water in any amount is totally unacceptable.

1. The American Water Works Association's goal for arsenic levels in drinking water is 0 parts per billion.<sup>26</sup>
2. **No regular testing is done** on FSA deliveries to Canadian water treatment plants. However, when "NSF Certified" analyses of FSA were taken, they showed arsenic levels to be highly variable - in some instances at harmful levels.<sup>27</sup>
3. The same *Consumer Reports* article that AHS quotes also states arsenic is a "potent human carcinogen" and can "set up children for other health problems in later life."<sup>28</sup>

How can AHS justify adding arsenic to our water using the excuse that our food is already contaminated with arsenic? **This is absurd logic.**

#### **How much does it cost to fluoridate?**

On average, water fluoridation costs Canadian communities between \$0.77 and \$4 per household per year. It is estimated that every \$1 invested in water fluoridation saves \$16 - \$38 in dental treatment costs.

The method of cost analysis used in the Griffin study (above) is manipulative and deceptive, making unjustifiable assumptions.

1. It **excludes** the major costs of water fluoridation while including factors like loss of pay for the time parents spend taking their children to the dentist.<sup>29</sup> Isn't this an obvious attempt to skew the data in favour of fluoridation?

2. The study says, "We assumed that the costs of dental fluorosis attributable to water fluoridation are negligible." An unwise and deceptive assumption given that millions of North Americans have some form of dental fluorosis (mottling, staining or pitting of tooth enamel), with rates in fluoridated cities as high as 75%!<sup>30</sup>

*"The cost of repairing teeth damaged by fluorosis is not trivial; moderate to severe effects can require \$15,000 or more in dental fees."*

*- From the Canadian Association of Physicians for the Environment (CAPE) Position on the Fluoridation of Drinking Water*

3. Fluoridation is anything but cost effective. A mere 1% of municipal water is consumed while the rest is used for showering, flushing toilets and watering lawns. Who in their right mind would dump 99% of a purchased commodity down the drain?

The study referred to by AHS is pure spin. Public water fluoridation is costly in all respects. **Why not just dump 99% of this toxin straight into the river? Isn't this exactly what is happening?**

**If I live in a fluoridated area *and* use fluoride toothpaste, am I getting too much fluoride?**

Health Canada recommends fluoride at only 0.7 mg/L<sup>1</sup> or 0.7 ppm (parts per million). This takes into account fluoride from other sources such as toothpaste, food, and mouthrinses. The 0.7 ppm concentration provides optimal dental health benefits with minimal risk of dental fluorosis.

This is a reckless assurance of safety by Health Canada.<sup>31</sup>

1. Health Canada fails to differentiate between concentration and dosage. If two people were to drink different amounts of fluoridated water, they both receive the same concentration, but they receive a different dose and dosage.
2. Health Canada fails to account for vulnerable sub-groups adversely affected by water artificially fluoridated at 0.7 ppm. **Concentration does not equal dosage!**
  - a. **Babies fed formula mixed with fluoridated water receive 200% of the U.S. EPA's safe dosage.**<sup>32</sup> By their own admission, Health Canada deliberately OMITTS data on what they call the "worst case scenario" for infants: "the exclusive consumption of powdered infant formula reconstituted with fluoridated drinking water."<sup>33</sup>

The Canadian Paediatric Society recommends infants under six months should not be exposed to any supplemental fluoride.<sup>34</sup>

- b. **Children** receive a greater dose of fluoride per body weight, incorporate more into their tissues, have lower kidney excretion and their developing brain is much more susceptible to fluoride toxicity.<sup>35</sup>

A 2-3 year-old child brushing with fluoridated toothpaste can **far exceed the recommended daily intake for fluoride from toothpaste alone.**<sup>36</sup>

Particularly vulnerable youngsters such as blacks,<sup>37</sup> diabetics,<sup>38</sup> and nutrient-deficient children<sup>39</sup> are more susceptible to fluoride toxicity.

Why doesn't Health Canada understand there are children affected by several of these factors at once, receiving many times its ill-advised recommendation?

### c. **Vulnerable Groups**

In her radio interview, Medical Officer for Alberta South Zone, Dr. Ada Bennett, made the outrageous statement that Lethbridge water would need 10 to 15 times more fluoride in the water before it became an issue. This concentration of fluoride (7 - 13.5 ppm) would cause crippling skeletal fluorosis<sup>40</sup> in healthy adults, acute fluoride toxicity in the elderly, children, diabetics and those suffering thyroid disorders, and would be **deadly** for people with kidney disease.<sup>41</sup>

3. Health Canada **does not account for several additional fluoride sources:** fluoride-leaching Teflon cookware,<sup>42</sup> anaesthetics,<sup>43</sup> pesticides, food fumigants, fluorinated drugs,<sup>44</sup> mechanically-deboned meat,<sup>45</sup> chemically-treated furniture and fabrics,<sup>46</sup> and industrial workplace exposure - all significant sources of fluoride contamination. **Fluoride is ubiquitous.**

If AHS officers are so ignorant on the facts of fluoridation toxicity, **how can they be trusted as the authority** by municipal councils? And how can city councillors be trusted while being complicit with irresponsible authorities?

Evidence screams for the precautionary principle, "When in doubt, don't."

### **What health concerns did Health Canada review?**

Health Canada reviewed the available science, conducted a total diet study to understand exposure to fluoride from food, and consulted with international experts. The review included fluoride absorption, distribution/metabolism, excretion, musculoskeletal effects, fractures, bone mineral density, cancer, mutagenicity/genotoxicity, reproductive/developmental effects, neurotoxicity/neurobehavioural effects, gastrointestinal symptoms, otosclerosis, urolithiasis and parathyroid hormone levels.

Health Canada did *not* responsibly review the “available science.”

Instead, they ignored studies with the evidence proving the systemic harm of FSA. Peer-reviewed scientific journals have hundreds of studies<sup>47</sup> showing the link between water fluoridation and many serious health conditions including, but not limited to:

- Arthritis (which is often a misdiagnosis of stage II skeletal fluorosis)<sup>48</sup>
- Cancer (bone,<sup>49</sup> bladder<sup>50</sup> and lung<sup>51</sup>)
- Dental<sup>52</sup> and skeletal<sup>53</sup> fluorosis
- Diabetes<sup>54</sup>
- Endocrine disruption<sup>55</sup> (pancreas, thyroid<sup>56</sup> and pineal gland<sup>57</sup>)
- Increased rates of bone fracture<sup>58</sup> (especially hip fracture in the elderly)
- Higher levels of lead<sup>59</sup> and lowered IQ<sup>60</sup> in children
- Kidney disease<sup>61</sup>

If Health Canada has a study proving the safety and efficacy of FSA, we **challenge** them to provide it.

#### **What are the adverse effects from fluoride?**

Like many things, fluoride can be toxic in very high concentrations. At the level recommended for optimal dental health (0.7 ppm) the reviews find no adverse health effects from fluoride<sup>1</sup>. However, children in areas with high natural levels of fluoride in the water (>1.5 ppm) have an elevated risk for developing dental fluorosis (occurs only before teeth erupt). Most dental fluorosis is very mild-to-moderate whitish patches on enamel, considered a cosmetic concern and is often not noticed by the individual. Severe dental fluorosis is very rare in Canada<sup>7</sup>. Ingesting extremely high fluoride concentrations over extended periods of time, (i.e. > 10ppm for 10 years) increases risk for skeletal fluorosis, a disease rarely if ever seen in Canada.

This is a **gross misrepresentation** of the toxic impact of FSA.

1. Fluoride is toxic even at *current* concentrations because it **accumulates in the body**. This is why it is officially classified by Environment Canada as “persistent,” “bio-accumulative” and “toxic.”<sup>62</sup>
2. Severe dental fluorosis may be rare, but mild and moderate fluorosis is tragically common, particularly in fluoridated communities.<sup>63</sup>
3. Dental fluorosis is not merely a “cosmetic concern,” but a whole body health issue.<sup>64</sup> The Canadian Association of Physicians for the Environment says: “[Dental] fluorosis is simply a visible representation of an effect on the entire bony skeleton.”<sup>65</sup>

In other words, if fluorosis is evident on the teeth, then the structure of the entire skeleton has already been compromised.

4. The threshold for crippling skeletal fluorosis is much lower than the 10 ppm cited by AHS. It has been observed at water levels of 1.35 -1.5 ppm.<sup>66</sup>

Evidence screams for the precautionary principle, “When in doubt, don’t.”

#### **Does water fluoridation increase the risk of hip fractures and osteoporosis in the elderly?**

The research does not support a link between water fluoridation and hip fractures or osteoporosis. In fact, exposure to fluoride at concentrations between 1-1.5 mg/L have shown to have a positive effect on bone density and in some cases, high doses of fluoride have been used in the treatment of osteoporosis.

Where’s the research? This is more false and misleading information.

1. Several studies on hip fracture and fluoride exposure clearly show a dose-related increase in fracture rates.<sup>67</sup>
2. Fluoride used in treatment of osteoporosis increases fractures of all kinds.<sup>68</sup>
3. Fluoride does not have a “positive effect on bone density.” While fluoride exposure does increase bone density, this denser bone is proven to be weaker, more brittle, and structurally inferior to normal bone.<sup>69</sup>

#### **Is water fluoridation the same as administering medication without consent?**

No. In its analysis of the Charter of Rights and Freedoms Section 7 (re: *security of the person*), Canada’s Supreme Court ruled (2004) that adding fluoride, which is a naturally occurring substance in water, is different from adding a drug or medication that does not naturally occur in water. Fluoride is considered a beneficial nutrient for optimal growth and development of dental health, not a medication.

This is blatantly deceptive bait-and-switch.

1. Fluorosilicic acid and calcium fluoride (the natural form of fluoride found in source water) are completely different compounds: FSA is **25 times more toxic** than naturally occurring calcium fluoride.<sup>70</sup> While FSA is classified as “extremely toxic,” calcium fluoride is “almost insoluble” and “moderately toxic.”<sup>71</sup>
2. Studies alluded to by AHS defending the safety of fluoridation are based on sodium or calcium fluoride. These compounds are **significantly less toxic than FSA**. No studies show sodium or calcium fluoride to be safe or effective, much less FSA.

3. The deliberately deceptive claim that fluoride is a nutrient has **no scientific basis**. It is not required for any biological function, including the formation of tooth enamel.<sup>72 73</sup>
4. Any substance used to treat a disease is a **medication**.<sup>74</sup> FSA is used as a medication in that it is purported to prevent cavities.

Water fluoridation is medication without prescription, without control over dosage and without informed consent.

### **What about freedom of choice?**

Adequate and appropriate oral health care remains inaccessible for many children and families – they have little personal choice when it comes to their dental health. Both adding fluoride, and not adding it, might disadvantage some groups of people – either by limiting personal choice or by preventing individuals from receiving health benefits. The most appropriate way of deciding whether fluoride should be added to water supplies is to rely on democratic decision-making procedures (e.g. elected officials, plebiscites). These should be implemented at the local and regional, rather than national level, because the need for, and perception of, water fluoridation varies in different areas.

The preceding paragraph is utterly contradictory to the point of being bizarre. Every sentence is ridiculous.

1. Water fluoridation tramples on the rights of those who **DON'T** want to be fluoridated, and denies the freedom to choose the source and dosage for those who **DO** want fluoride. Fluoridation is **unnecessary, undemocratic, unethical, even immoral**.
2. **Decision by plebiscite is a manipulative strategy**. It is audacious for AHS to suggest this decision should be made democratically while applying heavy pressure to city councils to maintain water fluoridation:
  - During Calgary's battle to end fluoridation, **AHS spent \$250,000** of taxpayer money on one color ad campaign alone, aiming to influence this "democratic decision-making" process. How can private citizens compete with their tax-funded "caregivers" and why should they be forced to do so?
  - When water fluoridation was brought before Lethbridge City Council for a vote in 2011, Health Canada's Chief Dental Officer, Dr. Peter Cooney, was flown in from Ottawa to champion fluoridation. His appearance **unfairly influenced** the council's vote. And this **heavy-handed interference** is called "democracy"?

- In the October 2013 Lethbridge municipal elections, Dr. James Talbot, Alberta's Chief Medical Officer of Health, sent a letter to each of the council candidates "strongly urging" them to support water fluoridation.

Are these actions "democratic decision-making," respecting the common citizen? Or is it political tyranny?

Universally-administered medication is NEVER appropriate. No municipal government or percentage of voters has the right to force-medicate even one person.

Oral health is central to an individual's overall health. By improving the oral health of community residents, fluoridation improves the overall health of the community.

Oral health IS critical to overall health; however, **artificial water fluoridation has NEVER been scientifically proven** to have any benefit.

In fact, many communities suffering from oral health crises have been fluoridated for decades.<sup>75</sup> The real problem stems from lack of oral hygiene and poor diet, both of which make people more vulnerable to cavities.<sup>76</sup>

While AHS blindly promotes fluoridation's *alleged* dental benefits, it irresponsibly ignores the serious, adverse whole-body effects. If AHS was concerned about the "overall health of the community," it would **promptly condemn water fluoridation**, as have 30 other Canadian communities<sup>77</sup> and 134 worldwide<sup>78</sup> since 2010.

When 95% of the world has chosen not to fluoridate water, why do Health Canada and Alberta Health Services insist on poisoning us? Are they *really* interested in our health?

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#### SOURCES

<sup>1</sup> Dr. John Colquhoun, Former Principal Dental Officer, Auckland, New Zealand - Colquhoun J. (1997). Why I changed my mind about fluoridation. *Perspectives in Biology & Medicine* 41(1): 29-44. <http://fluoridealert.org/articles/colquhoun/>, <http://fluoridealert.org/fan-tv/colquhoun/>

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Dr. William Marcus, Former Senior Science Advisor in US EPA's Office of Drinking Water - <http://fluoridealert.org/content/marcus-interview/>

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**Dr. Phyllis Mullinex**, Former Toxicologist at Forsythe Dental Center - Mullinex, P.  
<http://fluoridealert.org/content/mullinex-interview/>, Christopher Bryson, *The Fluoride Deception*, New York: (Seven Stories Press, 2004) xxiv.

**Dr. J. William Hirzy**, Senior EPA Chemist and VP of the US EPA Headquarters Union -  
<http://fluoridealert.org/fan-tv/hirzy/>

**Dr. Paul Connett**, PhD. Chemistry - The Absurdities of Water Fluoridation  
<http://fluoridealert.org/articles/absurdity/>

**Dr. James Beck**, MD, PhD. Biophysics - Connett P, Beck J, Micklem, HS. *The Case Against Fluoride*, White River Junction, VT: (Chelsea Green Publishing, 2010): 357.

<sup>2</sup> On October 2, 2013, **Dr. James Talbot**, Alberta's Chief Medical Officer of Health wrote a letter to all the candidates of the municipal election in Lethbridge in which he "strongly urge(d) the mayoral and council candidates to support water fluoridation." The letter, which can only be described as political interference, was full of misinformation and falsehoods that have been rebutted point by point at the following link:  
[http://www.fluoridefreelethbridge.com/news/press\\_release.html#October11\\_2013](http://www.fluoridefreelethbridge.com/news/press_release.html#October11_2013).

<sup>3</sup> In a June 2013 radio interview with Jim Brown of the CBC's 180, **Dr. Richard Musto**, Lead Medical Officer of Health for Calgary, stated that Europe was largely fluoridated. This is contrary to easily accessed information showing that 97% of Western Europe drinks *unfluoridated* water. He made several more erroneous and ill-informed statements, which have been rebutted at the following link:  
[http://www.fluoridefreelethbridge.com/news/180\\_Rebuttal.pdf](http://www.fluoridefreelethbridge.com/news/180_Rebuttal.pdf)

<sup>4</sup> In her March 5, 2013 guest column in the Lethbridge Herald, **Dr. Vivien Suttorp**, Lead Medical Officer of Health South Zone, made several ignorant or deliberately misleading statements: 1) comparing the highly toxic hydrofluorosilicic acid used to fluoridate Lethbridge water to naturally occurring calcium fluoride, 2) claiming that for every dollar spent on fluoridation, \$38 in dental costs are saved, 3) claiming that Health Canada, the World Health Organization and the CDC "monitor all scientific evidence." Nothing could be further from the truth as we have proven in this rebuttal.

<sup>5</sup> On February 12, 2013, **Dr. Ada Bennett**, Medical Officer of Health South Zone, was interviewed by Lethbridge radio station Country 95. Amongst other falsehoods, she claimed that "Lethbridge water would need another 10 to 15-times more fluoride in it before it would start to become an issue." This and her other dangerous false assurances are addressed in the following document:  
[http://www.fluoridefreelethbridge.com/news/Rebuttal\\_to\\_Dr\\_Ada\\_Bennett.pdf](http://www.fluoridefreelethbridge.com/news/Rebuttal_to_Dr_Ada_Bennett.pdf)

<sup>6</sup> In 2010, Dr. James Beck asked **Dr. Gerry Predy**, Senior Medical Officer of Health, to stop the promotion of "nursery water" occurred in Alberta hospitals. A private company selling this fluoridated water for infants was giving advertising to mothers leaving hospital after giving birth. Dr. Predy said he would stop it. Dr. Beck hoped that meant in all hospitals, not just the one he was complaining about. Dr. Predy then added that there is no evidence of harm from fluoride in water.

An exchange of messages ensued between Dr. Predy and Dr. Beck. Dr. Predy continued to deny risk from fluoridation and failed to respond to questions on the basis of his statements claiming benefits and safety of fluoridation. In the end Dr. Beck sent him two hundred citations of papers on just one risk - a risk more important than that of dental fluorosis - to the development of the nervous system. Dr. Predy had no response.

<sup>7</sup> On more than one occasion, **Dr. Luke Shwart** has stated before town and city councils that the York Review (2000) concluded fluoridation of public water supplies is safe for human consumption and effective in preventing cavities. Dr. James Beck informed Dr. Shwart after the first such incident that his statement was not true: the York review panel stated in their report that evidence was not sufficient to conclude fluoridation was safe or effective. Dr. Beck sent Dr. Shwart a published statement by the

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supervisor of the York Review, Professor Trevor Sheldon, where he asked fluoridation promoters to stop misrepresenting the report. Yet Dr. Shwart continued to give this misinformation.

<sup>8</sup> **Dr. Digby Horne**, Medical Officer of Health Central Zone, represented Alberta Health Services in two public meetings on the same day in Red Deer. The first was at midday, open to the public. The second was in the evening with all members of city council present.

In comments on the paper *Developmental Fluoride Neurotoxicity: A Systematic Review and Meta-Analysis* from the Harvard School of Public Health, Dr. Horne stated that the result showed, in the aggregate, a difference of -0.45 IQ points between the high exposure group and the low-exposure group. It is possible Dr. Horne was relying on a brief news item on the website of the Harvard School of Public Health in which such a statement was made erroneously. The error was corrected in an "update" on the website. Dr. Horne did not mention this correction.

If this were all there was to the story, then perhaps Dr. Horne was only guilty of irresponsibly reading and improperly evaluating the full paper, which was easily obtainable. Or possibly he didn't know the difference between an IQ point and a fraction of the standard error. That -0.45 is the difference in the means of high and low exposed groups expressed as fraction of the standard error. **It corresponds to a difference of -6.9 IQ points.**

If a population has an IQ distribution approximating a normal curve, then such a change would be accompanied by far more than a doubling of the number of persons with IQs less than 70 (below which psychologists consider a person mentally retarded) and by far more than a 50% reduction in the number of persons with IQs over 130 (above which psychologists consider a person a genius).

Dr. Robert Dickson, who was present at this presentation, informed Dr. Horne of his misinforming the council and public in attendance and suggested he correct it. Dr. Horne said that he would consider doing so, but he did not. What was possibly a mistake, ignorance or a failure to properly evaluate the scientific result became a lie.

<sup>9</sup> <http://fluoridealert.org/researchers/fan-bibliography/>

<sup>10</sup> "No randomised controlled trials of the effects of water fluoridation were found. . . . None of the included studies were of evidence level A. The reason for this among the studies evaluating dental caries was that none addressed three or more confounding factors."

The York Review: Fluoridation of Drinking Water: a Systematic Review of its Efficacy and Safety, 2000  
<http://www.york.ac.uk/inst/crd/fluores.htm>

<sup>11</sup> Caries trends 1992-1998 in two low-fluoride Finnish towns formerly with and without fluoridation," Caries Research, Nov-Dec 2000

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<sup>12</sup> "The concentration of fluoride in ductal saliva, as it is secreted from salivary glands, is low --- approximately 0.016 parts per million (ppm) in areas where drinking water is fluoridated and 0.006 ppm in nonfluoridated areas (27). **This concentration of fluoride is not likely to affect cariogenic activity.**" <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5014a1.htm>

Note: This concentration is over **90,000 times lower than fluoridated toothpaste** at 1,500 ppm.

<sup>13</sup> Connett P, Beck J, Micklem, HS. *The Case Against Fluoride*, White River Junction, VT: (Chelsea Green Publishing, 2010) 242 - 243.

<sup>14</sup> National Research Council. (2006). Fluoride in Drinking Water: A Scientific Review of EPA's Standards. National Academies Press, Washington D.C., p. 2,3,170-1

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<sup>15</sup> <http://fluoridealert.org/content/europe-statements/>

<sup>16</sup> <http://www.nofluoride.com/presentations/Nobel%20Prize%20Winners.pdf>

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<sup>18</sup> <http://www.nteu280.org/Issues/Fluoride/NTEU280-Fluoride.htm>

<sup>19</sup> Christopher Bryson, *The Fluoride Deception*, New York: (Seven Stories Press, 2004) xxiv.

<sup>20</sup> Sauerheber R. (2013) Physiologic Conditions Affect Toxicity of Ingested Industrial Fluoride. Journal of Environmental and Public Health <http://dx.doi.org/10.1155/2013/439490>

<sup>21</sup> "Most of the long-term health effects resulting from exposure to various forms of inorganic fluorides may be attributed to the actions **of the fluoride ion per se.**" [http://www.hc-sc.gc.ca/ewh-sem/pubs/contaminants/psl1-lsp1/fluorides\\_inorg\\_fluorures/index-eng.php](http://www.hc-sc.gc.ca/ewh-sem/pubs/contaminants/psl1-lsp1/fluorides_inorg_fluorures/index-eng.php) Under 1.0 Introduction

<sup>22</sup> The deposition of Stan Hazan was taken in a San Diego County Superior Court case titled *Macy v. City of Escondido*, case no. GIN015280, on March 9, 2004. The lawsuit sought to have the addition of hexafluorosilicic acid (HFSA) to the water declared unconstitutional under California law.

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<sup>23</sup> <http://le.utah.gov/~2013/bills/hbillenr/hb0072.pdf> Safe Drinking Water Disclosure Act, 2013 General Session, State of Utah, H.B. 72, Section 1, Subsection 9.

<sup>24</sup> <http://environment.gov.ab.ca/info/library/8553.pdf>

<sup>25</sup> <http://www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/index-eng.php>

<sup>26</sup> <http://water.epa.gov/lawsregs/rulesregs/sdwa/arsenic/>

<sup>27</sup> Letter from Stan Hazan, general manager, National Sanitation Foundation international's Drinking Water Additives Certification Program, to Ken Calvert, chairman, Subcommittee on Energy and the Environment, Committee on Science, U.S. House of Representatives, July 7, 2000, [http://www.keepers-of-the-well.org/gov\\_resp\\_pdfs/NSF\\_response.pdf](http://www.keepers-of-the-well.org/gov_resp_pdfs/NSF_response.pdf) See Table 1.

<sup>28</sup> <http://www.consumerreports.org/cro/magazine/2012/11/arsenic-in-your-food/index.htm>

<sup>29</sup> Griffin SO, Jones K, Tomar SL. An economic evaluation of community water fluoridation. *J Public Health Dent* 2001; 61(2):78-86

<sup>30</sup> "Current studies support the view that dental fluorosis has increased in both fluoridated and non-fluoridated communities. **North American studies suggest rates of 20 to 75% in the former and 12 to 45% in the latter.**"

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<sup>32</sup> The EPA RfD (reference dose) is 0.08 mg/kg/day. An infant weighing 5 kg, receiving 1 L of formula mixed with Lethbridge tap water at a concentration of 0.7 – 0.9 mg/L would receive 0.14 – 0.18 mg/kg/day). Connett P, Beck J, Micklem, HS. *The Case Against Fluoride*, White River Junction, VT: (Chelsea Green Publishing, 2010) 9-10.

<sup>33</sup> [http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2011-fluoride-fluorure/index-eng.php#fn\\_t1bd](http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2011-fluoride-fluorure/index-eng.php#fn_t1bd) (See

<sup>34</sup> Canadian Paediatric Society Position Statement on the Use of Fluoride in Infants and Children: [www.cps.ca/documents/position/fluoride-use](http://www.cps.ca/documents/position/fluoride-use)

<sup>35</sup> <http://fluoridealert.org/fan-tv/dr-whyte/>

<sup>36</sup> Levy SM, Guha-Chowdhury N. (1999). Total fluoride intake and implications for dietary fluoride supplementation. *Journal of Public Health Dentistry* 59: 211-23.

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<http://www.fluoridealert.org/wp-content/pesticides/pfoa.pfos.intro.html>

<sup>47</sup> <http://fluoridealert.org/researchers/fan-bibliography/>

<sup>48</sup> Bao W, et al. (2003). Report of investigations on adult hand osteoarthritis in Fengjiabao Village, Asuo Village, and Qiancheng Village. *Chinese Journal of Endemiology* 22(6):517-18.

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Grandjean P, Olsen J. (2004). Extended Follow-up of Cancer Incidence in Fluoride-Exposed Workers. *Journal of the National Cancer Institute* 96: 802-803.

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Grandjean P, et al. (1985). Mortality and cancer morbidity after occupational fluoride exposure. *American Journal of Epidemiology* 121: 57-64.

"Most of the removal of fluoride that occurs from the body (approximately 50% of daily intake) is done by renal excretion. The kidney cells are therefore a possible target of fluoride toxicity because they can be exposed to high concentrations of fluoride."

Collins TFX, Sprando RL. (2005). Fluoride-toxic and pathologic effects: Review of current literature on some aspects of fluoride toxicity. *Reviews in Food and Nutrition Toxicity*. 105-41.

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<sup>55</sup> "In summary, **evidence of several types indicates that fluoride affects normal endocrine function or response...**"  
National Research Council. (2006). *Fluoride in Drinking Water: A Scientific Review of EPA's Standards*. National Academies Press, Washington D.C., p. 266.

<sup>56</sup> As recently as the 1950s, sodium fluoride was used medicinally to treat hyperthyroidism. *The Merck Index: An Encyclopedia of Chemicals and Drugs*, 8<sup>th</sup> Ed., (1968). "Sodium Fluoride," Merck & Co. Rahway, N.J., p. 959.

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<sup>57</sup> "**fluoride is likely to cause decreased melatonin production and to have other effects on normal pineal function, which in turn could contribute to a variety of effects in humans**" (NRC, 2006, p. 256).

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<sup>59</sup> Sawan RM, Leite GA, Saraiva MC, Barbosa F Jr, Tanus-Santos JE, Gerlach RF. Fluoride increases lead concentrations in whole blood and in calcified tissues from lead-exposed rats. *Toxicology*. 2010 Apr 30;271(1-2):21-6. doi: 10.1016/j.tox.2010.02.002. Epub 2010 Feb 25.

<sup>60</sup> <http://ehp.niehs.nih.gov/wp-content/uploads/2012/09/ehp.1104912.pdf>

<sup>61</sup> "[A] fairly substantial body of research indicates that patients with chronic renal insufficiency are at an increased risk of chronic fluoride toxicity. Patients with reduced glomerular filtration rates have a decreased ability to excrete fluoride in the urine. **These patients may develop skeletal fluorosis even at 1 ppm fluoride in the drinking water.**" Schiff H. (2008). Fluoridation of drinking water and chronic kidney disease: **absence of evidence is not evidence of absence.** *Nephrology Dialysis Transplantation* 23:411.

"It seems probable that some people with severe or long-term renal disease, which might not be advanced enough to require hemodialysis, can still experience reduced fluoride excretion to an extent that can lead to fluorosis, or aggravate skeletal complications associated with kidney disease." Groth, E. (1973), Two Issues of Science and Public Policy: Air Pollution Control in the San Francisco Bay Area, and Fluoridation of Community Water Supplies. Ph.D. Dissertation, Department of Biological Sciences, Stanford University, May 1973.

Waldbott GL, et al. (1978). Fluoridation: The Great Dilemma. Coronado Press, Inc., Lawrence, Kansas. pp. 155-156.

<sup>62</sup> Environment Canada Toxic Substances List - Schedule 1 (Scroll down to, and click on, item #40.) [www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=0DA2924D-1&wsdoc=4ABEFFC8-5BEC-B57A-F4BF-11069545E434](http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=0DA2924D-1&wsdoc=4ABEFFC8-5BEC-B57A-F4BF-11069545E434)

<sup>63</sup> "Current studies support the view that dental fluorosis has increased in both fluoridated and non-fluoridated communities. North American studies suggest rates of 20 to 75% in the former and 12 to 45% in the latter."

Locker, D. (1999). Benefits and Risks of Water Fluoridation. An Update of the 1996 Federal-Provincial Sub-committee Report. Prepared for Ontario Ministry of Health and Long Term Care.

"The **prevalence of fluorosis** in permanent teeth in areas with fluoridated water has increased from about 10-15% in the 1940s to **as high as 70% in recent studies...**"

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Marshall TA, et al. (2004). Associations between Intakes of Fluoride from Beverages during Infancy and Dental Fluorosis of Primary Teeth. *Journal of the American College of Nutrition* 23:108-16.

"The prevalence of fluorosis at a water fluoride level of 1.0 ppm was estimated to be 48% and for fluorosis of aesthetic concern it was predicted to be 12.5%."

McDonagh, M. et al. (2000). A Systematic Review of Public Water Fluoridation. NHS Center for Reviews and Dissemination, University of York.

<sup>64</sup> "Though **dental mottling and pigmentation is one of the earliest signs of chronic fluoride intoxication**, its absence does not exclude the affection of the skeletal system." Teotia M, Teotia SPS, Kunwar KB. Endemic skeletal fluorosis. *Archives of Disease in Childhood*. 1971 October; 46(249): 686-691. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1647839/>

<sup>65</sup> [http://www.cape.ca/res\\_cardfile.shtml?cmd\[227\]=i-227-e29cb89dc0610f57e31e5f550b936ed4&cmd\[252\]=i-252-e29cb89dc0610f57e31e5f550b936ed4](http://www.cape.ca/res_cardfile.shtml?cmd[227]=i-227-e29cb89dc0610f57e31e5f550b936ed4&cmd[252]=i-252-e29cb89dc0610f57e31e5f550b936ed4)

<sup>66</sup> "It was initially claimed that crippling fluorosis required water levels of more than 10 ppm before it occurred. More studies, however, have demonstrated that in many populations, crippling occurs above 3 ppm, and can occur at water levels of 1.35 -1.5 ppm, given the presence of predisposing factors."

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Wang L, Huang J. (1995). Outline of control practice of endemic fluorosis in China. *Soc Sci Med* 41:1191-1195

<sup>67</sup> Sogaard CH, et al. (1994). Marked decrease in trabecular bone quality after five years of sodium fluoride therapy—assessed by biomechanical testing of iliac crest bone biopsies in osteoporotic patients. *Bone* 15: 393-99.

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Inkovaara J, et al. (1975). Phophylactic fluoride treatment and aged bones. *British Medical Journal* 3: 73-74.

Bayley TA, et al. (1990). Fluoride-induced fractures: relation to osteogenic effect. *Journal of Bone and Mineral Research* 5(Suppl 1):S217-22.

<sup>68</sup> "**The peripheral fracture rate during treatment was three times that in untreated osteoporosis.**" Schnitzler CM, et al. (1990). Bone fragility of the peripheral skeleton during fluoride therapy for osteoporosis. *Clinical Orthopedics* (261):268-75.

"Fluoride treatment was "associated with a **significant three-fold increase in the incidence of nonvertebral fractures**, both incomplete and complete...This increased rate of fracturing suggests that bone formed during fluoride therapy has increased fragility."

Riggs BL, et al. (1990). Effect of Fluoride treatment on the Fracture Rates in Postmenopausal Women with Osteoporosis. *New England Journal of Medicine* 322:802-809.

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Gutteridge DH, et al. (2002). A randomized trial of sodium fluoride (60 mg) +/- estrogen in postmenopausal osteoporotic vertebral fractures: increased vertebral fractures and peripheral bone loss with sodium fluoride; concurrent estrogen prevents peripheral loss, but not vertebral fractures. *Osteoporosis International* 13:158-70.

Haguenauer D, et al. (2000). Fluoride for the treatment of postmenopausal osteoporotic fractures: a meta-analysis. *Osteoporosis International* 11:727-38.

<sup>69</sup> D. Chachra, H. Limeback, T.L. Willett, and M.D. Grynopas (2010). The Long-term Effects of Water Fluoridation on the Human Skeleton. *J Dent Res* 89(11):1219-1223.

<sup>70</sup> Simonin, P and Pierron A. Toxicite brute des derives fluores. *C.R. Seances Soc. Biol. Fil.*, 124:133-134, 1937.

<sup>71</sup> Roholm, K. Fluorine Intoxication: A Clinical Hygienic Study. 1937, p.264.

<sup>72</sup> Letters to and from Dr. Bruce Alberts, National Academy of Science published in *Fluoride* 1998; 31,(3): 153-157 and *Fluoride* 1999;32(3):187-198.  
<http://www.fluoridation.com/fraud.htm#NASIOM.%20November%2020,%201998%20letter>

<sup>73</sup> Although Health Canada has classified fluoride as an essential element in the past, it now recommends that fluoride requirements should "only be based on the beneficial effect on dental caries" and notes that **"attempts to demonstrate its essentiality for growth and reproduction in experimental animals have not been successful."** Similarly, the U.S. National Research Council considers fluoride to be a "beneficial element for humans." <http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/fluoride-fluorure/index-eng.php#a51>

<sup>74</sup> "A therapeutic agent: any substance, other than food, used in the prevention, diagnosis, alleviation, treatment, or cure of disease in man and animal." *Stedman's Medical Dictionary*, 24<sup>th</sup> Edition

<sup>75</sup> Hawaii and California, the **least fluoridated US states** (13.0% and 15.7%, respectively) have **residents who are the least likely to be toothless**, according to the Morbidity and Mortality Weekly Report. Yet Kentucky and West Virginia, 100% and 82.1% fluoridated, have the most toothless residents.

[http://www.cdc.gov/aging/pdf/State\\_of\\_Aging\\_and\\_Health\\_in\\_America\\_2004.pdf](http://www.cdc.gov/aging/pdf/State_of_Aging_and_Health_in_America_2004.pdf) p. 26

<sup>76</sup> Burt, et al. Dietary Patterns Related to Caries in a Low-Income Adult Population, *Caries Research* 2006;40:473-480 <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1626651/>

<sup>77</sup> <http://cof-cof.ca/2013/01/canadas-growing-list-of-communities-rejecting-fluoridation-of-their-drinking-water/>

<sup>78</sup> Worldwide, over 130 communities, representing nearly 6,000,000 people, have rejected artificial water fluoridation since 2010: [http://fluoridealert.org/content/communities\\_2010/](http://fluoridealert.org/content/communities_2010/)

**Michael Cain**

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**From:** Michael Fleming [mikefleming99@hotmail.com]  
**Sent:** Wednesday, May 07, 2014 5:54 PM  
**To:** Michael Cain  
**Subject:** RE: An Exhortation to Follow the Example of Forward Thinking Communities

Hi Mike,

I would not any stock in this article....it is politically motivated, period....there are thousands of documents like this on the internet. Basically, people have their own agendas/views etc., which they are entitled to.

The article refers to areas like Europe, Russia, Japan, where dental care is very poor or non-existent, so why would they fluoridate the water? The need for healthy teeth in these areas is not as important as it is the here in the US, which is why **WE DO fluoridate the water**. And Canada's health care system is completely different then the US, which has it's own challenges.

The Real fact is..... water fluoridation helps fight decay, period.

What the real problem is the public's dietary choices and their ability, or lack there of, to perform good oral hygiene. Many people do not perform good hygiene or have a good diet at home, and have decay as a result. Water fluoridation will help the % of the public that don't perform good hygiene and have poor health habits/choices, but in a limited capacity, because it is the responsibility of the individual to take care of their own teeth.

If someone drinks 3 two liters of Mountain Dew everyday and doesn't brush their teeth, they will have decay. Water fluoridation will not help them, but that is not the % of the public it is intended to help. That is life.....you can't win all the battles.

If water is not fluoridated, then the people who live in the city of Boyne will develop more decay and need additional dental treatment. It will only be a matter of time.

Sincerely,  
Michael A. Fleming DDS

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**From:** mcain@boynecity.com  
**To:** mikefleming99@hotmail.com  
**Date:** Wed, 7 May 2014 11:32:35 -0400  
**Subject:** FW: An Exhortation to Follow the Example of Forward Thinking Communities

Good Morning Michael, Attached and below please find one of the emails we have received about removing fluoride from Boyne City's water. This will be on the agenda for the Tuesday, May 13<sup>th</sup> City Commission meeting which begins at 7pm here at the north end of City Hall. Hope you can attend. If you have any thoughts or comments, please let me know. Mike

60

5/9/2014

# Water fluoridation controversy

From Wikipedia, the free encyclopedia

The **water fluoridation controversy** arises from political, moral, ethical,<sup>[1]</sup> and safety concerns regarding the fluoridation of public water supplies. The controversy occurs mainly in English-speaking countries, as Continental Europe has ceased water fluoridation.<sup>[2]</sup> Those opposed argue that water fluoridation may cause serious health problems, is not effective enough to justify the costs, and has a dosage that cannot be precisely controlled.<sup>[3][4][5]</sup> In some countries, fluoride is added to table salt.<sup>[6]</sup>

At the dosage recommended for water fluoridation, the only known adverse effect is dental fluorosis, which can alter the appearance of children's teeth during tooth development.<sup>[7]</sup> Dental fluorosis is cosmetic and unlikely to represent any other effect on public health.<sup>[8]</sup> Despite opponents' concerns, water fluoridation has been effective at reducing cavities in both children and adults.<sup>[7]</sup>

Opposition to fluoridation has existed since its initiation in the 1940s.<sup>[2]</sup> During the 1950s and 1960s, some opponents of water fluoridation suggested that fluoridation was a communist plot to undermine public health.<sup>[9]</sup>

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## Ethics

Many who oppose water fluoridation consider it to be a form of compulsory mass medication.<sup>[10]</sup> They argue that consent by all water consumers cannot be achieved, nor can water suppliers accurately control the exact levels of fluoride that individuals receive, nor monitor their response.

Water fluoridation was characterized in at least one journal publication as a violation of the Nuremberg Code and the Council of Europe's Biomedical Convention of 1999.<sup>[11]</sup> A dentistry professor and a philosopher argued in a dentistry journal that the moral status for advocating water fluoridation is "at best indeterminate" and could even be considered immoral. They asserted that it infringes upon autonomy based on uncertain evidence, with possible negative effects.<sup>[11]</sup> Another journal article suggested applying the precautionary principle to this controversy, which calls for public policy to reflect a conservative approach to minimize risk in the setting where harm is possible (but not necessarily confirmed) and where the science is not settled.<sup>[12]</sup>

In the United Kingdom, the Green Party refers to fluoride as a poison, claims that water fluoridation violates Article 35 of the European Charter of Fundamental Rights, is banned by the UK poisons act of 1972, violates Articles 3 and 8 of the Human Rights Act 1998 and raises issues under the United Nations Convention on the Rights of the Child.<sup>[10]</sup>

## Safety

Fluoridation has little effect on risk of bone fracture (broken bones); it may result in slightly lower fracture risk than either excessively high levels of fluoridation or no fluoridation.<sup>[8]</sup> There is no clear association between fluoridation and cancer or deaths due to cancer, both for cancer in general and also specifically for bone cancer and osteosarcoma.<sup>[8][13]</sup> Other adverse effects lack sufficient evidence to reach a confident conclusion.<sup>[13]</sup> A Finnish study published in 1997 showed that fear that water is fluoridated may have a psychological effect with a large variety of symptoms, regardless of whether the water is actually fluoridated.<sup>[14]</sup>

Fluoride can occur naturally in water in concentrations well above recommended levels, which can have several long-term adverse effects, including severe dental fluorosis, skeletal fluorosis, and weakened bones.<sup>[15]</sup> The World Health Organization recommends a guideline maximum fluoride value of 1.5 mg/L as a level at which fluorosis should be minimal.<sup>[16]</sup>

In rare cases improper implementation of water fluoridation can result in overfluoridation that causes outbreaks of acute fluoride poisoning, with symptoms that include nausea, vomiting, and diarrhea. Three such outbreaks were reported in the U.S. between 1991 and 1998, caused by fluoride concentrations as high as 220 mg/L; in the 1992 Alaska outbreak, 262 people became ill and one person died.<sup>[17]</sup> In 2010, approximately 60 gallons of fluoride were released into the water supply in Asheboro, North Carolina in 90 minutes—an amount that was intended to be released in a 24-hour period.<sup>[18]</sup>

Like other common water additives such as chlorine, hydrofluosilicic acid and sodium silicofluoride decrease pH and cause a small increase of corrosivity, but this problem is easily addressed by increasing the pH.<sup>[19]</sup> Although it has been hypothesized that hydrofluosilicic acid and sodium silicofluoride might increase human lead uptake from water, a 2006 statistical analysis did not support concerns that these chemicals cause higher blood lead concentrations in children.<sup>[20]</sup> Trace levels of arsenic and lead may be present in fluoride compounds added to water, but no credible evidence exists that their presence is of concern: concentrations are below measurement limits.<sup>[19]</sup>

The effect of water fluoridation on the natural environment has been investigated, and no adverse effects have been established. Issues studied have included fluoride concentrations in groundwater and downstream rivers; lawns, gardens, and plants; consumption of plants grown in fluoridated water; air emissions; and equipment noise.<sup>[19]</sup>

## Efficacy

Water fluoridation is effective at reducing cavities in both children and adults.<sup>[7]</sup> Earlier studies showed that water fluoridation led to reductions of 50–60% in childhood cavities; more recent studies show lower reductions (18–40%), likely due to increasing use of fluoride from other sources, notably toothpaste, and also to the halo effect of food and drink made in fluoridated areas and consumed in unfluoridated ones.<sup>[21]</sup>

A 2000 systematic review found that water fluoridation was statistically associated with a decreased proportion of children with cavities (the median of mean decreases was 14.6%, the range –5 to 64%), and with a decrease in decayed, missing, and filled primary teeth (the median of mean decreases was 2.25 teeth, the range 0.5–4.4 teeth),<sup>[13]</sup> which is roughly equivalent to preventing 40% of cavities.<sup>[22]</sup> The review found that the evidence was of moderate quality: many studies did not attempt to reduce observer bias, control for confounding factors, report variance measures, or use appropriate analysis. Although no major differences between natural and artificial fluoridation were apparent, the evidence was inadequate to reach a conclusion about any differences.<sup>[13]</sup> Fluoride also prevents cavities in adults of all ages. There are fewer studies in adults however, and the design of water fluoridation studies in adults is inferior to that of studies of self- or clinically applied fluoride. A 2007 meta-analysis found that water fluoridation prevented an estimated 27% of cavities in adults (95% confidence interval [CI] 19–34%), about the same fraction as prevented by exposure to any delivery method of fluoride (29% average, 95% CI: 16–42%).<sup>[23]</sup> A 2002 systematic review found strong evidence that water fluoridation is effective at reducing overall tooth decay in communities.<sup>[24]</sup>

Most countries in Europe have experienced substantial declines in cavities without the use of water fluoridation.<sup>[25]</sup> For example, in Finland and Germany, tooth decay rates remained stable or continued to decline after water fluoridation stopped. Fluoridation may be useful in the U.S. because unlike most European countries, the U.S. does not have school-based dental care, many children do not visit a dentist regularly, and for many U.S. children water fluoridation is the prime source of exposure to fluoride.<sup>[26]</sup> The effectiveness of water fluoridation can vary according to circumstances such as whether preventive dental care is free to all children.<sup>[27]</sup>

Some studies suggest that fluoridation reduces oral health inequalities between the rich and poor, but the evidence is limited.<sup>[25]</sup> There is anecdotal but not scientific evidence that fluoride allows more time for dental treatment by slowing the progression of tooth decay, and that it simplifies treatment by causing most cavities to occur in pits and fissures of teeth.<sup>[28]</sup>

## Statements against water fluoridation

American biochemist Dean Burk, after his retirement, devoted himself to his opposition to water fluoridation.<sup>[29][30]</sup> According to Burk "fluoridation is a form of public mass murder."<sup>[31][32]</sup>

The International Chiropractor's Association opposes mass water fluoridation, considering it "possibly harmful and deprivation of the rights of citizens to be free from unwelcome mass medication."<sup>[33]</sup>

In the United States, the Sierra Club opposes mandatory water fluoridation. Some reasons cited include possible adverse health effects, harm to the environment, and risks involving sensitive populations.<sup>[34]</sup>

Citing impacts on the environment, the economy and on health, the Green Party of Canada seeks a ban on artificial fluoridation products. The Canadian Green Party adopted in 2010 a platform position which considers water fluoridation to be unsustainable.<sup>[35]</sup>

Arvid Carlsson, winner of the 2000 Nobel Prize for Medicine for his work on Parkinson's disease, opposes water fluoridation.<sup>[36][37]</sup> He took part in the debate in Sweden, where he helped to convince Parliament that it should be illegal due to ethics. He believes that it violates modern pharmacological principles, which indicate that medications should be tailored to individuals.<sup>[38]</sup>

## Neutral statement

On 15 April 2008, the United States National Kidney Foundation (NKF) updated their position on fluoridation for the first time since 1981.<sup>[39]</sup> Formerly an endorser of water fluoridation, the group is now neutral on the practice. The report states, "*Individuals with CKD [Chronic kidney disease] should be notified of the potential risk of fluoride exposure by providing information on the NKF website including a link to the report in brief of the NRC and the Kidney Health Australia position paper.*"<sup>[40][41][42]</sup> Calling for additional research, the foundation's 2008 position paper states, however, that there is insufficient evidence to recommend fluoride-free drinking water for patients with renal disease.<sup>[43]</sup>

## Statements for water fluoridation

The fluoridation of public water has been hailed by the U.S. Centers for Disease Control as one of the top medical achievements of the 20th century.<sup>[44]</sup> It is ranked No. 9 on this list ahead of "Recognition of tobacco use as a health hazard."<sup>[45]</sup>

The American Dental Association calls water fluoridation "one of the safest and most beneficial, cost-effective public health measures for preventing, controlling, and in some cases reversing, tooth decay."<sup>[46]</sup>

Health Canada supports fluoridation, citing a number of international scientific reviews that indicate "there is no link between any adverse health effects and exposure to fluoride in drinking water at levels that are below the maximum acceptable concentration of 1.5 mg/L."<sup>[47]</sup>

The World Health Organization says fluoridation is an effective way to prevent tooth decay in poor communities. "In some developed countries, the health and economic benefits of fluoridation may be small, but particularly important in deprived areas, where water fluoridation may be a key factor in reducing inequalities in dental health."<sup>[48]</sup>

A 2008 meta-analysis of published research into fluoride's effect on osteoporosis found that daily doses of up to 20 mg fluoride significantly increased bone mineral density and reduced fracture risk.<sup>[49]</sup>

Sociologist Brian Martin states that sociologists have typically viewed opposition to water fluoridation as irrational, although critics of this position have argued that this rests on an uncritical attitude toward scientific knowledge.<sup>[2]</sup>

## Use throughout the world

Water fluoridation is used in the United States, United Kingdom, Ireland, Canada, and Australia, and a handful of other countries. The following nations previously fluoridated their water, but stopped the practice, with the years when water fluoridation started and stopped in parentheses:

- Federal Republic of Germany (1952–1971)
- Sweden (1952–1971)
- Netherlands (1953–1976)
- Czechoslovakia (1955–1990)
- German Democratic Republic (1959–1990)
- Soviet Union (1960–1990)

- Finland (1959–1993)
- Japan (1952–1972)<sup>[50]</sup>

In the United Kingdom a Strategic Health Authority can direct a water company to fluoridate the water supply in an area if it is technically possible. The strategic health authority must consult with the local community and businesses in the affected area. The water company will act as a contractor in any new schemes and cannot refuse to fluoridate the supply.<sup>[51]</sup>

In areas with complex water sources, water fluoridation is more difficult and more costly. Alternative fluoridation methods have been proposed, and implemented in some parts of the world. The World Health Organization (WHO) is currently assessing the effects of fluoridated toothpaste, milk fluoridation and salt fluoridation in Africa, Asia, and Europe. The WHO supports fluoridation of water in some areas.<sup>[52]</sup>

## History

The first large fluoridation controversy occurred in Wisconsin in 1950. Fluoridation opponents questioned the ethics, safety, and efficacy of fluoridation.<sup>[53]</sup> New Zealand was the second country to fluoridate, and similar controversies arose there.<sup>[54]</sup> Fears about fluoride were likely exacerbated by the reputation of fluoride compounds as insect poisons and by early literature which tended to use terms such as "toxic" and "low grade chronic fluoride poisoning" to describe mottling from consumption of 6 mg/L of fluoride prior to tooth eruption, a level of consumption not expected to occur under controlled fluoridation.<sup>[55]</sup> When voted upon, the outcomes tend to be negative, and thus fluoridation has had a history of gaining through administrative orders in North America.<sup>[53]</sup> Theories for why the public tends to reject fluoridation include "alienation from mainstream" society, but evidence for that is weak. Another interpretation is confusion introduced during the referendum.<sup>[53]</sup> Some studies of the sociology of opposition to water fluoridation have been criticized for having an uncritical attitude toward scientific knowledge.<sup>[2]</sup>

Outside North America, water fluoridation was adopted in some European countries, but in the late 1970s and early 1980s, Denmark and Sweden banned fluoridation when government panels found insufficient evidence of safety, and the Netherlands banned water fluoridation when "a group of medical practitioners presented evidence" that it caused negative effects in a percentage of the population.

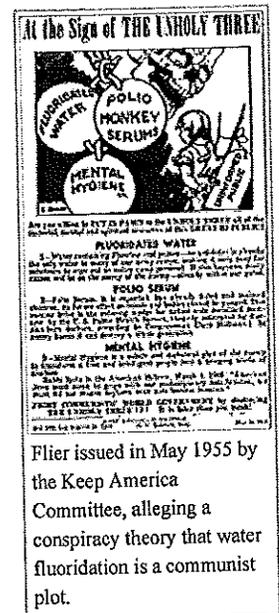
## Conspiracy theories

Water fluoridation has frequently been the subject of conspiracy theories. During the "Red Scare" in the United States during the late 1940s and 1950s, and to a lesser extent in the 1960s, activists on the far right of American politics routinely asserted that fluoridation was part of a far-reaching plot to impose a socialist or communist regime. They also opposed other public health programs, notably mass vaccination and mental health services.<sup>[56]</sup> Their views were influenced by opposition to a number of major social and political changes that had happened in recent years: the growth of internationalism, particularly the UN and its programs; the introduction of social welfare provisions, particularly the various programs established by the New Deal; and government efforts to reduce perceived inequalities in the social structure of the United States.<sup>[57]</sup>

Some took the view that fluoridation was only the first stage of a plan to control the American people. Fluoridation, it was claimed, was merely a stepping-stone on the way to implementing more ambitious programs. Others asserted the existence of a plot by communists and the United Nations to "deplete the brainpower and sap the strength of a generation of American children". Dr. Charles Bett, a prominent anti-fluoridationist, charged that fluoridation was "better THAN USING THE ATOM BOMB because the atom bomb has to be made, has to be transported to the place it is to be set off while POISONOUS FLUORINE has been placed right beside the water supplies by the Americans themselves ready to be dumped into the water mains whenever a Communist desires!" Similarly, a right-wing newsletter, the *American Capsule News*, claimed that "the Soviet General Staff is very happy about it. Anytime they get ready to strike, and their 5th column takes over, there are tons and tons of this poison "standing by" municipal and military water systems ready to be poured in within 15 minutes."<sup>[9]</sup>

This viewpoint led to major controversies over public health programs in the US, most notably in the case of the Alaska Mental Health Enabling Act controversy of 1956.<sup>[58]</sup> In the case of fluoridation, the controversy had a direct impact on local programs. During the 1950s and 1960s, referendums on introducing fluoridation were defeated in over a thousand Florida communities. Although the opposition was overcome in time, it was not until as late as the 1990s that fluoridated water was drunk by the majority of the population of the United States.<sup>[56]</sup>

The communist conspiracy argument declined in influence by the mid-1960s, becoming associated in the public mind with irrational fear and paranoia. It was portrayed in Stanley Kubrick's 1964 film *Dr. Strangelove*, in which the character General Jack D. Ripper initiates a nuclear war in the hope of thwarting a communist plot to "sap and impurify" the "precious bodily fluids" of the American people with fluoridated water. Another satire appeared in the 1967 movie *In Like Flint*, in which a character's fear of fluoridation is used to indicate that he is insane.



Flier issued in May 1955 by the Keep America Committee, alleging a conspiracy theory that water fluoridation is a communist plot.

Some anti-fluoridationists claimed that the conspiracy theories were damaging their goals; Dr. Frederick Exner, an anti-fluoridation campaigner in the early 1960s, told a conference: "most people are not prepared to believe that fluoridation is a communist plot, and if you say it is, you are successfully ridiculed by the promoters. It is being done, effectively, every day ... some of the people on our side are the fluoridators' 'fifth column'."<sup>[9]</sup>

In 1987, Jan E. Stephens authored a self-published booklet, an extract of which was published in the Australian new age publication *Nexus Magazine* in 1995. In it he claimed he was told by an individual named "Charles Elliot Perkins" that: "Repeated doses of infinitesimal amounts of fluoride will in time reduce an individual's power to resist domination by slowly poisoning and narcotising a certain area of the brain and will thus make him submissive to the will of those who wish to govern him ... Both the Germans and the Russians added sodium fluoride to the drinking water of prisoners of war to make them stupid and docile."

These statements have been dismissed by reputable Holocaust historians as untrue, but they are regularly repeated to the present day in conspiracy publications and websites.<sup>[59]</sup>

In 2004, on the U.S. television program *Democracy Now*, investigative journalist and author of the book *The Fluoride Deception*, Christopher Bryson claimed that, "the post-war campaign to fluoridate drinking water was less a public health innovation than a public relations ploy sponsored by industrial users of fluoride—including the government's nuclear weapons program."<sup>[60]</sup>

## Court cases

### Europe

Water was fluoridated in large parts of the Netherlands from 1960 to 1973, at which point the Supreme Court of the Netherlands declared fluoridation of drinking water unauthorized.<sup>[61]</sup> The Dutch Court decided that authorities had no legal basis for adding chemicals to drinking water if they did not also improve safety. It was also stated as support that consumers cannot choose a different tap water provider.<sup>[62]</sup> Drinking water has not been fluoridated in any part of the Netherlands since 1973.

In *Ryan v. Attorney General* (1965), the Supreme Court of Ireland held that water fluoridation did not infringe the plaintiff's right to bodily integrity.<sup>[63]</sup> The court found that such a right to bodily integrity did exist, despite the fact that it was not explicitly mentioned in the Constitution of Ireland, thus establishing the doctrine of unenumerated rights in Irish constitutional law.

### United States

Fluoridation has been the subject of many court cases wherein activists have sued municipalities, asserting that their rights to consent to medical treatment and due process are infringed by mandatory water fluoridation.<sup>[1]</sup> Individuals have sued municipalities for a number of illnesses that they believe were caused by fluoridation of the city's water supply. In most of these cases, the courts have held in favor of cities, finding no or only a tenuous connection between health problems and widespread water fluoridation.<sup>[64]</sup> To date, no federal appellate court or state court of last resort (i.e., state supreme court) has found water fluoridation to be unlawful.<sup>[65]</sup>

## See also

- Fluoride therapy
- Hexafluorosilicic acid
- Sodium monofluorophosphate

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58. ^ Marmor, Judd (1974). "Psychodynamics of Group Opposition to Mental Health Programs". *Psychiatry in Transition*. Brunner/Mazel. ISBN 0-87630-070-0.
59. ^ Politifact Florida "Say water fluoridation started in Nazi Germany ghettos and death camps to pacify the Jews." (<http://www.politifact.com/florida/statements/2011/oct/06/critics-water-fluoridation/truth-about-fluoride-doesnt-include-nazi-myth/>) Politifact Florida accessed on 27 March 2014
60. ^ Bryson, Christopher. "The Fluoride Deception: How a Nuclear Waste Made its Way Into the Nation's Drinking Water" ([http://www.democracynow.org/2004/6/17/the\\_fluoride\\_decepti](http://www.democracynow.org/2004/6/17/the_fluoride_decepti) *Democracy Now*, 17 June 2004
61. ^ Bram van der Lek (1976). "De strijd tegen fluoridering" (<http://books.google.com/books?id=3UoZAAAIAAJ&pg=PA487&lpg=PA487&dq=fluoridering+nede> *De Gids* **139** (2).
62. ^ Leonardus Johannes Antonius Damen, Peter Nicolaï, J.L. Boxum, K.J. de Graaf, J.H. Jans, A.P. Klap, A.T. Marseille, A.R. Neerhof, B.K. Olivier, B.J. Schueler, F.R. Vermeer, R.L. Vuicsán (2005). "Deel 1: systeem, bevoegdheid, bevoegdheidsuitoefening, handhaving". *Bestuursrecht [Control rights (legal)]*. Boom juridische studieboeken (in Dutch). Boom Juridische uitgevers. pp. 54–55. ISBN 978-90-5454-537-8.
63. ^ "Ryan v. A.G. IESC 1; IR 294 (3 July, 1965)" (<http://www.bailii.org/ie/cases/IESC/1965/1.html>). Irish Supreme Court.
64. ^ Beck v. City Council of Beverly Hills, 30 Cal. App. 3d 112, 115 (Cal. App. 2d Dist. 1973) ("Courts through the United States have uniformly held that fluoridation of water is a reasonable and proper exercise of the police power in the interest of public health. The matter is no longer an open question." (citations omitted)).
65. ^ Pratt, Edwin, Raymond D. Rawson & Mark Rubin, *Fluoridation at Fifty: What Have We Learned*, 30 J.L. Med. & Ethics 117, 119 (Fall 2002)

## Further reading

- Connett, Paul; Beck, James; Micklem, H. Spedding (2010). *The case against fluoride; how hazardous waste ended up in our drinking water and the bad science and powerful politics that keep it there*. White River Junction, Vermont: Chelsea Green Publishing. p. 384. ISBN 978-1-60358-287-2.
- Fawell, John Wesley (2006). *Fluoride in drinking-water*. Geneva: World Health Organization. ISBN 92-4-156319-2.
- Freeze RA, Lehr JH (2009). *The fluoride wars: how a modest public health measure became America's longest-running political melodrama*. Hoboken: Wiley. ISBN 0-470-44833-4.
- Martin, Brian (1991). *Scientific knowledge in controversy: the social dynamics of the fluoridation debate* (<http://www.bmartin.cc/pubs/91skic.html>). Albany: State University of New York Press. ISBN 0-7914-0538-9.

## External links

- Water fluoridation ([http://www.dmoz.org/Society/Issues/Health/Water\\_Treatment/Fluoridation/](http://www.dmoz.org/Society/Issues/Health/Water_Treatment/Fluoridation/)) at DMOZ

Retrieved from "[http://en.wikipedia.org/w/index.php?title=Water\\_fluoridation\\_controversy&oldid=602741357](http://en.wikipedia.org/w/index.php?title=Water_fluoridation_controversy&oldid=602741357)"

Categories: Environmental controversies | Medical controversies | Water fluoridation | Conspiracy theories by subject

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## Top Ten Facts

- Fluoride is a community health measure that benefits people of all ages, income levels, and ethnicity.
- Fluoride protects over 300 million people in more than 40 countries worldwide, with over 10,000 communities and 145 million people in the United States alone.
- Fluoride is a naturally occurring mineral in all water supplies and when adjusted to optimal levels, is effective in reducing tooth decay.
- Fluoride is not a medicine. Fluoride is a naturally occurring element and a nutrient. (Reference: Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride, 2004. National Academy Press, Washington DC)
- Multiple studies over the years done in several countries and the United States show that fluoridation can reduce tooth decay by 60% in baby teeth and up to 35% in adult teeth. When fluoride was discontinued, there were large increases in the incident of tooth decay, especially in children. (Reference: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5014a1.htm>)
- Poor children suffer disproportionately more cavities than middle or upper income children. Children from families earning less than \$20,000 annually have 10 times more unmet dental care needs than children from families earning \$50,000 annually.
- Water fluoridation is the best way to get fluoride. Topical application is better than nothing but not nearly as effective as water fluoridation. Pills are expensive and all too often not administered correctly.
- Water fluoridation is SAFE! Multiple studies show that

“Fluoridation is the single most important commitment a community can make to the oral health of its citizens.”  
 Dr. C. Everett Koop, Former U.S. Surgeon General



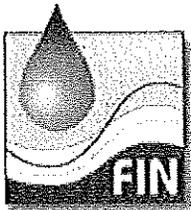
adjustment to appropriate levels does not pose a health risk for the public. Fluoride at recommended levels has been used for more than 50 years with no side effects. Visit [www.fluorideinfo.org](http://www.fluorideinfo.org) for more information.



- Water fluoridation saves money! Do the math- it costs approximately 50 cents per person per year to receive fluoridated water in Arcata. One single filling for a cavity can be well over \$100!
- Oral health is a critical component of overall health and well-being. Good oral health is critical for quality of life and psychosocial health.

If you have any questions about our Top Ten Fluoride Facts page - [please contact us](#).

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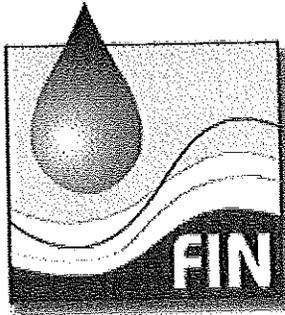
***"He that sleeps feels not the tooth-ache."***

*Shakespeare*

**Fluoride Information Supporters:** [Who Supports Fluoride](#) and other [Links](#) - Please [contact](#) The Fluoride Information Network to help support the truth based on research about fluoride. Thank You.

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site design by [Precision Intermedia](#)



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~~Anti-Fluoride distortions exposed!~~

## **FLUORIDE INFORMATION: IS FLUORIDE GOOD TO HAVE IN YOUR DRINKING WATER?**

### **Straight Talk about Fluoride**

There is a lot of information available about fluoride but the information is also sometimes conflicting. Some leads us to believe fluoride in drinking water is a good thing; and some says just the opposite! Even information in clear opposition claims to have solid scientific backing – how can this be? This situation led us to ask: How can a person make an informed decision about whether fluoride is good or bad when everything they hear is so conflicting?

This web site presents the best known, best substantiated and most truthful information about fluoride.

We are educators, medical and public health practitioners, dentists, parents and concerned citizens who have thoroughly researched the issues of fluoride in community water sources. We deeply care about dental health, safe drinking water, health equity across socio-economic groups and fiscal responsibility in homes and whole communities.

“Community water fluoridation is an effective, safe, and ideal public health measure that benefits individuals of all ages and economic strata”.  
Dr. David Satcher, former U.S. Surgeon General

**IN THE NEWS:**

**Read the latest headlines and quotes**

[read more...](#)



**IN THE NEWS:**

**Forum weighs Pros, Cons of Water Fluoridation**

[read more...](#)



## Many American Communities Want To Retain Fluoride in Their Drinking Water

There are many American communities that have had fluoridated drinking water for 50 years or more but recently some oppose having fluoride in community water, and in some cases have even tried to stop fluoridation! We believe the public needs current and reliable information to assist them in making an informed choice regarding this important public health decision, which could especially affect the health of those in our community who are most vulnerable to severe dental disease, and who have the least access to professional preventative and treatment services and who, along with taxpayers, would wind up paying for costly treatment instead of inexpensive prevention. Fluoride provides safe dental prevention in a cost effective way to our most vulnerable citizens. Read on for the truth on Fluoride in drinking water.

### We Support Fluoride in our Community Water based on these Values

- It Promotes health for all community members even the disadvantaged and most vulnerable.
- Taking a community-wide and long-term approach to solving problems.
- Using our local and state tax dollars equitably and in a cost effective manner.
- Preventing disease.
- Making informed choices based on available evidence and its relevance to our community's situation.
- Recognizing that public health measures have been of great benefit to the community, but that they need to meet a high standard of safety and efficacy and should not constitute an insurmountable burden to those who object to them for personal reasons.
- Understanding that any policy involves a balance between risk, cost, and benefit.
- Understanding that there can be no absolute certainty in public health matters, but that there are reasonable standards of evidence that most of our community can accept to use in making policy decisions.



[Read here about the Escondido Fluoridation case.](#)

The evidence supporting the safety, efficacy, and cost-effectiveness of fluoridation of community water supplies comes from multiple sources covering 50 years of legitimate research published in peer reviewed journals, including both long term studies on large populations, recent confirmatory studies, and comprehensive literature reviews. Adding fluoride to drinking water is an important element in promotion of dental health along with education and access to dental care. Our group supports the actions of the dental Advisory Group in promoting dental health by all practical means.

We have met with the group opposing fluoride in our community water, and read materials they claim support their cause. Most if not all the material is not scientifically valid and draws conclusions not supported by evidence or not statistically significant. Their claims are inflammatory and largely unfounded. See "The Claims Versus the Facts"

### **Does Fluoride in your Drinking Water Expose you to Dangerous Chemicals or Health Risks?**

The Environmental Protection Agency and California Department of Health Services Division of Drinking Water and Environmental Management are responsible for setting and enforcing safety standards for community water systems. The proposed referendum calls for approval of additives to Arcata water by the Food and Drug Administration. The Food and Drug Administration does not oversee drinking water; it would take an act of Congress to change regulations to allow FDA to regulate water additives. A small group of people in Arcata (and some other communities across America) are calling for FDA approval to add fluoride to drinking water. This is a thinly veiled attempt to tie the issue up in a bureaucratic process that will cause years of no fluoride in water (which is consistent with their main goal of keeping fluoride out of community water systems)..



## Who Deserves Fluoride in their Drinking Water?

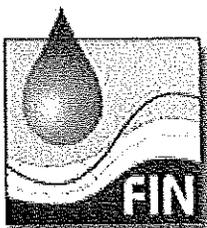
All the citizens of our community – particularly children -- deserve the benefits of fluoride in their drinking water. People who do not wish to drink fluoridated water can obtain other water satisfactory to them or can treat city water to their own personal standards. People who feel they need to severely limit fluoride intake will need to take further measures to limit their fluoride intake if they wish.

## Fluoride in Drinking Water is a Fiscally Responsible Action

To provide fluoride in drops or pills is much more expensive and requires each parent to administer thousands of doses, thus providing much less widespread protection to high-risk children.

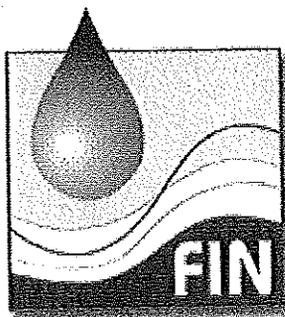
High-risk children are also less able to access professional preventative services like sealants or fluoride office applications. The scientific evidence shows a benefit of fluoridation to adults and the elderly, not only children. It is our goal to get accurate information about the safety and effectiveness of water fluoridation out to the voters of Arcata and encourage fluoride supporters to speak up and vote for social justice!

## Is Fluoride Good To Have In Your Toothpaste? [click here](#)



***Fluoride's properties were discovered in the American Southwest due to the markedly better teeth health of the local population than in other regions of the country.***

Fluoride Information Supporters: [Who Supports Fluoride](#) and other [Links](#) - Please [contact](#) The Fluoride Information Network to help support the truth



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## "Safe Water" Proponents Twist Fluoride Facts to Scare You

### Weapons of Mass Deception?

#### Spreading Misinformation (or bad information = bad decisions)

Can you trust what you read in the newspaper? Can you trust what you read on the Internet? Sometimes yes, sometimes no. Read how to tell the difference below:

#### What is Quackwatch?

Quackwatch.org is a nonprofit corporation whose purpose is to combat health-related frauds, myths, fads, and fallacies. They characterize the "information" provided by fluoride opponents as propaganda which makes heavy use of "the big lie" and half-truths to deceive the unwary. Read more about the deceptive tactics used by the anti-fluoridationists [below](#).

#### Local Misinformation

The "Arcata Citizens for Safe Water" make a number of provocative claims from the established anti-fluoride community in their public statements and on their website. Let's see how some of them stand up to scrutiny:

#### The FDA has the authority to regulate municipal drinking water?

Fluoride opponents would like you to believe that the Food and Drug Administration (FDA) can regulate what is put into municipal drinking water. They provide a snippet of congressional testimony which says that when fluoride is used to treat or prevent disease, it is considered to be a drug and thus is regulated by the FDA. As with many other assertions made by the anti-fluoride camp, the snippet is a

"In the interest of public health, the American Dental Association unreservedly endorses fluoridation of community water supplies as safe, effective, and necessary in the preventing of tooth decay—and this has been the policy of ADA since 1950."

American Dental Association Statement



half-truth taken completely out of context. It refers to the FDA's mandate to regulate fluoride-containing toothpastes, supplements, mouthrinses and other products (such as the paste used to polish your teeth at the dentist's office). And, in accordance with that authority, the FDA has approved a large variety and number of such products.

However, the FDA does not have jurisdiction over municipal drinking water. The Safe Drinking Water Act gave that responsibility to the Environmental Protection Agency (EPA). The FDA's own website says as much: *"The regulation of water is divided between the Environmental Protection Agency and FDA. EPA has the responsibility for developing national standards for drinking water from municipal water supplies. FDA regulates the labeling and safety of bottled water."* Click on the link, scroll to the bottom of the page and see for yourself.

So the fluoride opponent's ballot initiative requiring FDA approval of "additives" to municipal drinking water is simply a cynical ploy to eliminate fluoridation because they know (or should know) that it is impossible for the FDA to regulate fluoride in municipal drinking water.

Can you trust anything the fluoride opponents tell you?

#### **Fluoride is toxic?**

Fluoride opponents are fond of stating that the bags containing the sodium fluoride used to fluoridate Arcata's water are labelled "TOXIC." The bags contain pure sodium fluoride and this substance, if ingested in large quantities (such as dipping your spoon into the bag and eating it), is indeed toxic. However, simply because something is toxic under certain circumstances (e.g. high dose) does not make it toxic under all circumstances, and certain "toxic substances" are actually necessary for life. Iodine (which is in the same periodic table group as fluorine) is also toxic when ingested in large quantities. However if iodine were not added to table salt, the incidence of thyroid disease (goiter) would increase because this element is necessary for health. Oxygen administered at 100% under pressure is also toxic, which is why divers do not use pure oxygen. Even pure water can be toxic if one ingests too much of it.

Should we ban oxygen and water?

#### **AMA does not endorse fluoridation?**

Two quotes are given on the "Safe Water" website, along with something which could be construed as the American Medical Association logo. These quotes suggest that the American Medical Association does not support community water fluoridation. However, here's what the AMA itself has to say on the topic: "The AMA urges state health departments to consider the value of requiring statewide fluoridation (preferably a comprehensive program of fluoridation of all public water supplies, where these are fluoride deficient), and to initiate such action as deemed appropriate."



Don't just take our word - check it out for yourself on the AMA website: [AMA Statement on Fluoridation](#)

### The EPA is against fluoridation?

A quote is given on the "Safe Water" website along with something which could be construed as the Environmental Protection Agency logo. The quote suggests that the EPA does not support community water fluoridation. And again, this is highly deceptive! In the first place, the EPA is barred, by law, from either opposing or endorsing fluoridation of municipal water supplies. But they are not barred from making statements about fluoride's effectiveness in fighting cavities or in its safety. Let's see what the EPA really says about the cavity-fighting effectiveness of fluoridation: "Fluoride in drinking water at levels of about 1 ppm reduces the number of dental cavities." (Reference: 51 Fed Reg 1140, 1986.) With regard to safety, the EPA says "There exists no directly applicable scientific documentation of adverse medical effects at levels of fluoride below 8mg/liter." (Reference: 62 Fed Reg 64297, 1997.)



Later on, the anti's site states explicitly that the EPA is against fluoride, and it cites a vote opposing water fluoridation by one local union of the National Treasury Employees Union (Chapter 280) at the Environmental Protection Agency (EPA). This vote was taken at a meeting attended by less than 20 members of the union which is over 1000 strong. In fact, the "ringleader" of the 20 members who voted to oppose fluoride, Bill Hirzy, is the first to admit that he does not represent the position of the EPA. However, the antifluoridationists tend to see that distinction as unimportant and instead try to mislead the public into believing that the EPA is against water fluoridation.

### Fluoride is of no value in diminishing cavities?

Their website says "Fluoride compounds in water and in supplements do not provide any significant cavity-protecting effects." ***This is an out-and-out fiction with absolutely no basis in fact!***

The United States Public Health Service states that "Fluoride has substantial benefits in the prevention of tooth decay. Numerous studies, taken together, clearly establish a causal relationship between water fluoridation and the prevention of dental caries. While dental decay is reduced by fluoridated toothpaste and mouth rinses, professional fluoride treatments and fluoride dietary supplements, fluoridation of water is the most cost-effective method. It provides the greatest benefit to those who can least afford preventive and restorative dentistry and reduces dental disease, loss of teeth, time away from work or school, and anesthesia-related risks associated with dental treatment." In fact, fluoride's cavity-fighting effectiveness is so great that community water fluoridation was hailed as one of the Ten

Great Public Health Achievements of the 20th century by the Centers for Disease Control and Prevention.

If you want to find out the truth about the effectiveness of fluoride in preventing cavities, look at this recommendation from the United States Centers for Disease Control which has numerous references from the scientific literature.

You can also learn a lot by going to this webpage at the Centers for Disease Control.

### **Fluoride banned in Europe?**

Antifluoridationists are fond of stating that fluoride has been banned in Europe. What's the truth?

Because their public water systems are both older and of smaller scale than those in the U.S., many European countries (e.g. Germany, France, Spain and Switzerland) find it more cost-effective to provide the cavity-fighting benefits of fluoridation by adding it to table salt (much the way iodine is added to salt in the U.S. to prevent goiter).

Fluoride opponents point to the relatively recent decision of the Swiss Canton of Basle to eliminate fluoridation of drinking water as proof that fluoride has been recognized as harmful, but as usual they don't tell the whole story. What are the facts behind the decision?

In Switzerland both water and salt fluoridation was in use in different regions, with water fluoridation being used in Basle. Fluoridated salt was marked "Not to be delivered to Basle" but in 1995 Swiss Federal law was changed so that the cantons could no longer regulate the salt trade. As a result, in 2000 fluoridated salt began to be sold in Basle. This caused many people to ingest both fluoridated water and fluoridated salt, so the Canton voted to cease water fluoridation in 2003. Since its introduction in 1962 the water fluoridation scheme in Basle had been challenged on the political scene by antifluoridationists. However, the allegations of harm were all regarded as unfounded by the Cantonal Parliament, and this opinion was upheld in the official document leading to the cessation of water fluoridation. The document also restated that the Swiss Federal Court had decided that water fluoridation was constitutional (Reference: J. MEYER and P. Wiehl, Schweiz Monatsschr. Zahnmed 2003). Of course the antifluoridationists conveniently leave out these facts when they tell the story of Basle.

A wide spectrum of health-related organizations, including the health advisory committee of the European Union, and numerous national health authorities in Europe have supported fluoridation for caries prevention. In fact, a recent controversial Belgian attempt to ban food supplements and chewing gum containing fluoride fell afoul of European law after the European commission said that any such ban would be illegal. (Ref: The Guardian 7/31/02).

Does that sound like fluoride has been banned in

Europe??? Can you trust people who say that it has been?

**Conclusion:**

We did not research every claim made by the antifuoridationists, and neither can you, particularly since they do not provide references which can be researched - which is probably no accident. However, except for the list of communities which have "taken action" against fluoride, every claim that we have checked into has been either highly misleading or a complete fiction. Even their list of communities where "action" has been taken is itself misleading - they've lost many of these battles. Watsonville, for example, was bullied into resisting California state law which requires fluoridation of communities with at least 10,000 hookups. When this case went to court, they lost! In PaloAlto, a referendum to remove fluoridation was defeated 80%-20%. Having lost in Palo Alto (the home of Stanford University), the antifuoridationists are hoping that they can put one over on the citizens of Arcata and the HSU faculty and students.

**Quackwatch exposes deceptive tactics used by fluoride opponents:**

"The antifuoridationists' ("antis") basic technique is the big lie... it is simple to use, yet surprisingly effective. It consists of claiming that fluoridation causes cancer, heart and kidney disease, and other serious ailments that people fear. The fact that there is no supporting evidence for such claims does not matter. The trick is to keep repeating them -- because if something is said often enough, people tend to think there must be some truth to it.

"A variation of the big lie is the laundry list. List enough "evils," and even if proponents can reply to some of them, they will never be able to cover the entire list. This technique is most effective in debates, letters to the editor, and television news reports. Another variation is the simple statement that fluoridation doesn't work. Although recent studies show less difference than there used to be in decay rates between fluoridated and nonfluoridated communities, the benefit is still substantial. In fact, the Public Health Service estimates that every dollar spent for community fluoridation saves about fifty dollars in dental bills.

"A key factor in any anti campaign is the use of printed matter. Because of this, antis are very eager to have their views printed. Scientific journals will rarely publish them, but most local newspapers are willing to express minority viewpoints regardless of whether facts support them. A few editors even welcome the controversy the antis generate -- expecting that it will increase readership.

"The aim of anti "documents" is to create the illusion of scientific controversy. Often they quote statements that are out of date or out of context. Quotes from obscure or hard-to-locate journals are often used. Another favored tactic is to misquote a profluoridation scientist, knowing that even if the scientist protests, the reply will not reach all those who read the original misquote.

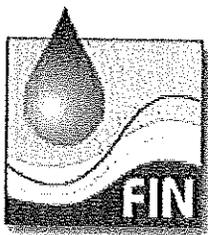
"Half-truths are commonly used. For example, saying that fluoride is a rat poison ignores the fact that poison is a matter of dose. Large amounts of many substances -- even pure water -- can poison people. But the trace amount of fluoride contained in fluoridated water will not harm anyone.

"Experts" are commonly quoted. It is possible to find someone with scientific credentials who is against just about anything. Most "experts" who speak out against fluoridation, however, are not experts on the subject. There are, of course, a few dentists and physicians who oppose fluoridation. Some of them object to fluoridation as a form of government intrusion, even though they know it is safe and effective."

[Click here for the complete Quackwatch article.](#)

*Quackwatch* articles quoted with permission — thank you.

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***Fluoride's properties were discovered in the American Southwest due to the markedly better teeth health of the local population than in other regions of the country.***

**Fluoride Information Supporters:** [Who Supports Fluoride](#) and other [Links](#) - Please [contact](#) The **Fluoride Information Network** to help support the truth based on research about fluoride. Thank You.

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site design by [Precision Intermedia](#)

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**From:** jimbaumann1@gmail.com [mailto:jimbaumann1@gmail.com] **On Behalf Of** Jim Baumann  
**Sent:** Thursday, April 17, 2014 8:06 AM  
**To:** Michael Cain; Mainstreet  
**Subject:** Harvard scientists: Data on fluoride, IQ not applicable in U.S.

## Harvard scientists: Data on fluoride, IQ not applicable in U.S.

Read more here: <http://www.kansas.com/2012/09/11/2485561/harvard-scientists-data-on-fluoride.html#storylink=cpy>  
Harvard University scientists say that Wichita voters shouldn't depend on a research study they compiled to decide whether to put fluoride in the city's drinking water to fight tooth decay.

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.

Read more here: <http://www.kansas.com/2012/09/11/2485561/harvard-scientists-data-on-fluoride.html#storylink=cpy>  
<http://www.kansas.com/2012/09/11/2485561/harvard-scientists-data-on-fluoride.html>

### **Pulitzer Prize goes to editorials on removing fluoride**

The Tampa Bay Times won its ninth Pulitzer Prize on Monday for a series of editorials last year by Tim Nickens and Daniel Ruth after the Pinellas County Commission moved to stop putting fluoride in the drinking water, affecting the dental health of 700,000 people in the county. As Nickens and Ruth wrote in the last of the 10 editorials submitted for the Pulitzer Prize in Editorial Writing, "It took nearly 14 months, an election and the clarion voice of Pinellas County voters to persuade county commissioners to correct a serious error in judgment." And the newly reconstituted commission quickly moved to vote to restore fluoride to the water system. Here is the Pulitzer nominating letter from Times Editor Neil Brown, with links to the 10 editorials.  
<http://www.tampabay.com/specials/2013/links/pulitzer/>

### **Crazy pro-life Kansas conservative is afraid of fluoride in water**

Read more at: <http://jasongooljar.com/2014/02/24/crazy-pro-life-kansas-conservative-afraid-fluoride-water/>  
<http://jasongooljar.com/2014/02/24/crazy-pro-life-kansas-conservative-afraid-fluoride-water/#.U0-Uk7tcY>

## Dan Meads

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**From:** Deming, Susan (DCH) <DemingS@michigan.gov>  
**Sent:** Thursday, April 17, 2014 10:45 AM  
**To:** Thurston, Brian (DEQ)  
**Cc:** 'Dan Meads'; Bloemker, Jon (DEQ); 'Michael Cain'; Cook, Pat (DEQ)  
**Subject:** RE: City of Boyne City - Fluoride discontinuation on 5/13/2014 agenda  
**Attachments:** 2013 Haveman.pdf; 4-2014 National\_Orgs\_-\_CWF\_Letters.docx; Pew-FluoridationSavings.pdf; 2012 STATISTICS SHOW INCREASE IN U.docx; 2013-14 MDCH Fact Sheet.pdf; April 2013 Surgeon General Statement.pdf; 07\_Statements\_from\_leading\_organizations1.pdf

Dan and Michael,

Here are some links and attachments that will help explain the benefits of fluoridation. Let me know if want something more specific.

The best internet sites to acquire accurate and up to date information are:

- The Centers for Disease Control and Prevention: <http://www.cdc.gov/fluoridation/index.htm>
- The National Institute for Dental and Cranial Research: <http://www.nidcr.nih.gov/>
- The PEW Center for the States: [http://www.pewcenteronthestates.org/initiatives\\_detail.aspx?initiativeID=327831](http://www.pewcenteronthestates.org/initiatives_detail.aspx?initiativeID=327831)
- The American Dental Association: [http://www.ada.org/sections/professionalResources/pdfs/fluoridation\\_facts.pdf](http://www.ada.org/sections/professionalResources/pdfs/fluoridation_facts.pdf)
- Campaign for Dental Health: [www.likemyteeth.org](http://www.likemyteeth.org)
- Fluoride Science: <http://www.fluoridescience.org/>

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Regular FX: 517 335-8697

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*Association of State Drinking Water Administrators*

**New Information Released about Fluoride**

January 7, 2011

**Overview of Today's Action:** Today, both the Environmental Protection Agency (EPA) and the Centers for Disease Control and Prevention (CDC) (under the Department of Health and Human Services) have released new information related to fluoride, covering both the beneficial levels needed to protect against tooth decay, and the possible risks of fluoride at higher concentrations. EPA has released a new quantitative dose response assessment and an environmental exposure assessment for fluoride. At the same time, CDC has proposed an adjustment to the recommendation for the optimal fluoride level in drinking water for good dental health.

***Background:***

- **NAS Study Findings:** The new EPA assessments of fluoride were undertaken in response to findings of the National Academies of Science (NAS). At EPA's request, as a part of the Agency's six year review of existing regulations, NAS in 2006 reviewed new data on fluoride and issued a report. The report recommended that EPA update its health and exposure assessments to take into account bone and dental effects and to consider all sources of fluoride – both drinking water and dietary.
- **Current Drinking Water Regulations and Optimal Dosage Recommendations:** EPA established regulations for fluoride ion in drinking water in 1986. A non-enforceable Maximum Contaminant Level Goal (MCLG) and enforceable Maximum Contaminant Level (MCL), both set at 4 mg/L, were established to protect against crippling skeletal fluorosis. EPA also established a non-enforceable Secondary Maximum Contaminant Level (SMCL) of 2 mg/L to protect against moderate dental fluorosis (discoloration of the tooth enamel), a cosmetic effect. CDC's recommendation for the optimum fluoride level to protect dental health has been in a range from 0.7 to 1.2 mg/l. CDC set the range by taking into account different levels of children's fluid intake according to average annual temperatures in different regions of the U.S. – less fluoride was recommended in warmer, southern climates where it was believed that people drank more water and more fluoride was recommended in cooler climates where people drank less water.

***Detailed Summary of Today's Actions:***

- **EPA's Dose-Response Assessment:** EPA has completed and peer-reviewed a quantitative dose-response assessment based on available data for severe dental fluorosis, as recommended by NAS. Additional research will be necessary to obtain dose-response data amenable to a quantitative risk assessment for Stage II skeletal fluorosis and/or skeletal fractures. (However, the recommendations relative to severe dental fluorosis are thought to likely be protective against other adverse health effects.) The dose-response assessment provides a reference dose based on the critical health effect of pitting of the enamel in severe dental fluorosis. The new oral Reference Dose (RfD) is **0.08 mg/kg/day**. The dietary portion is estimated to be 0/01 mg/kg/day and the drinking water contribution is estimated at 0.07 mg/kg/day; confidence in the

RfD is said to be “medium.” (Note: The drinking water contribution of 0.07 mg/kg/day would equate to a concentration of about 2.4 mg/L, for a 70 kg adult drinking 2 liters/day.)

- **EPA’s Relative Source Contribution Analysis:** EPA has also completed and peer-reviewed a document on environmental exposure of children and adults to fluoride and the relative source contribution (RSC) for water. The RSC is needed in order to derive the MCLG from the dose-response assessment.
- **CDC’s Revised Dosage Recommendations:** CDC considered current levels of tooth decay and dental fluorosis and fluid consumption across the U.S. Based on those analyses, CDC is proposing that community water systems adjust their fluoride content to a single, maximum level of **0.7 mg/L** (versus the current range of 0.7 to 1.2 mg/L). This updated recommendation is based on recent EPA and HHS scientific assessments to balance the benefits of preventing tooth decay while limiting any unwanted health effects. CDC also believes that geographical differences that were drivers for the previous range are not as significant as they once were, due to factors such as the advent of air conditioning. This 0.7 mg/l level is a proposal and CDC will be taking comments on the change for 30 days, once it is officially published in the Federal Register. When a new optimum fluoride level is adopted as final, we expect new guidance on how states and drinking water systems can implement the new recommendations. Updated questions and answers are already available at [http://www.cdc.gov/fluoridation/fact\\_sheets/cwf\\_qa.htm](http://www.cdc.gov/fluoridation/fact_sheets/cwf_qa.htm).

*Editorial Note: On today’s press call, a CDC representative referred to the 1995 Engineering & Administrative Recommendations for Water Fluoridation which specify a fluoride control concentration range for PWSs based on water temperature. In a follow-up discussion with officials on the call, they indicated that these recommendations will likely need to be reevaluated in light of today’s action.*

#### **Next Steps:**

- **The Fluoride MCL:** Today’s action sends a strong signal about the likelihood of a downward revision of the MCL, but a decision has not yet been made to do so. EPA will review the new risk assessment of fluoride along with other information (e.g., availability of analytical methods, feasibility of treatment, data on occurrence and exposure) to determine whether it is appropriate to revise the drinking water goal and/or standard. If a decision is made to revise the standard, the Agency will need to go through all of the applicable SDWA-prescribed rule-making steps.
- **CDC’s Recommended Optimum Dosage:** As CDC’s questions and answers document points out, the new dosage recommendation is *voluntary* – no one is required to comply with this value. The only national requirement is the drinking water standard.
- **An Additional Consideration:** Under the most recent set of revisions to the Lead and Copper Rule, water systems are required to notify states in the event of substantive change that would impact corrosion control. Since fluoride is added as an acid, significant changes to fluoridation practices could trigger this part of the LCR. We will be consulting with EPA and our water utility partners to further evaluate this possible issue.

**Where to Get Additional Information:** EPA's main web site contains a link to an overview document which contains all of the pertinent links. However, several of those links are reproduced here:

- All the risk analysis documents, including information on the results of the peer review process, are posted on EPA's website at: [http://water.epa.gov/action/advisories/drinking/fluoride\\_index.cfm](http://water.epa.gov/action/advisories/drinking/fluoride_index.cfm).
- Specific information on the latest evaluation of fluoride used to determine the new dental health recommendation can be found in the prepublication version of the Federal Register notice at [http://www.hhs.gov/news/press/2011pres/01/pre\\_pub\\_frn\\_fluoride.html](http://www.hhs.gov/news/press/2011pres/01/pre_pub_frn_fluoride.html).
- More general information on fluoride for improving dental health can be found on the CDC website at <http://www.cdc.gov/fluoridation/index.htm>.

ADSWA will keep states informed about EPA's decision making process, CDC's proposal on optimum fluoride levels, and any other new fluoride information.

## **Fact Sheet for Community Water Systems On Release of New Recommended Fluoride Levels for Drinking Water**

**The Michigan Department of Natural Resources and Environment  
and the Michigan Department of Community Health  
January 21, 2011**

On January 7, 2011, the Environmental Protection Agency (EPA) and the Department of Health and Human Services (HHS) released new recommendations for fluoride levels in drinking water. Their recommendation reaffirms that community water fluoridation is one of the most cost effective and safe measures for controlling dental decay in public health.

The new recommendation was developed in response to a 2006 report from the National Academies of Science suggesting EPA update their health and exposure assessment of fluoride in drinking water and other sources. From this assessment, EPA acknowledges it is now possible that Americans receive more fluoride from other sources so that slightly lower levels in drinking water will be sufficient. As a result, the EPA and HHS have **proposed a level of 0.7 mg/L** of fluoride as the optimal level for drinking water, replacing the previous recommendation of 0.7-1.2 mg/L.

This revised recommendation is based on data showing increasing dental fluorosis across the United States as a result of increasing exposure to fluoride in a variety of sources such as toothpaste, mouth wash and the application of various dental products. Mild fluorosis is noticed as chalky white lines on the enamel of teeth, barely noticeable except to a dental professional. Severe fluorosis is rare, but can cause pitting of the enamel and darker brown staining of the enamel.

The new guidance will update and replace original recommendations provided in 1962 by the U.S. Public Health Service. The current EPA regulations on fluoride consisting of a Maximum Contaminant Level of 4 mg/L and a Secondary Maximum Contaminant Level of 2 mg/L are not changing at this time but they will be assessed. Any proposed changes will have to follow EPA protocols for standard setting.

Comments on the proposed change to the recommended optimal fluoride level will be accepted for 30 days after publication in the Federal Register. Comments can be sent to [CWFComments@cdc.gov](mailto:CWFComments@cdc.gov)

### **What does this mean for water systems?**

Presently maintain current fluoride levels until the official recommendation is released in the Spring of 2011. You can begin to assess what your system would need to change when this recommendation becomes official.

The Michigan Department of Natural Resources and Environment (DNRE) and the Michigan Department of Community Health (MDCH) are assessing the information and will comply with the HHS recommendation once it is official.

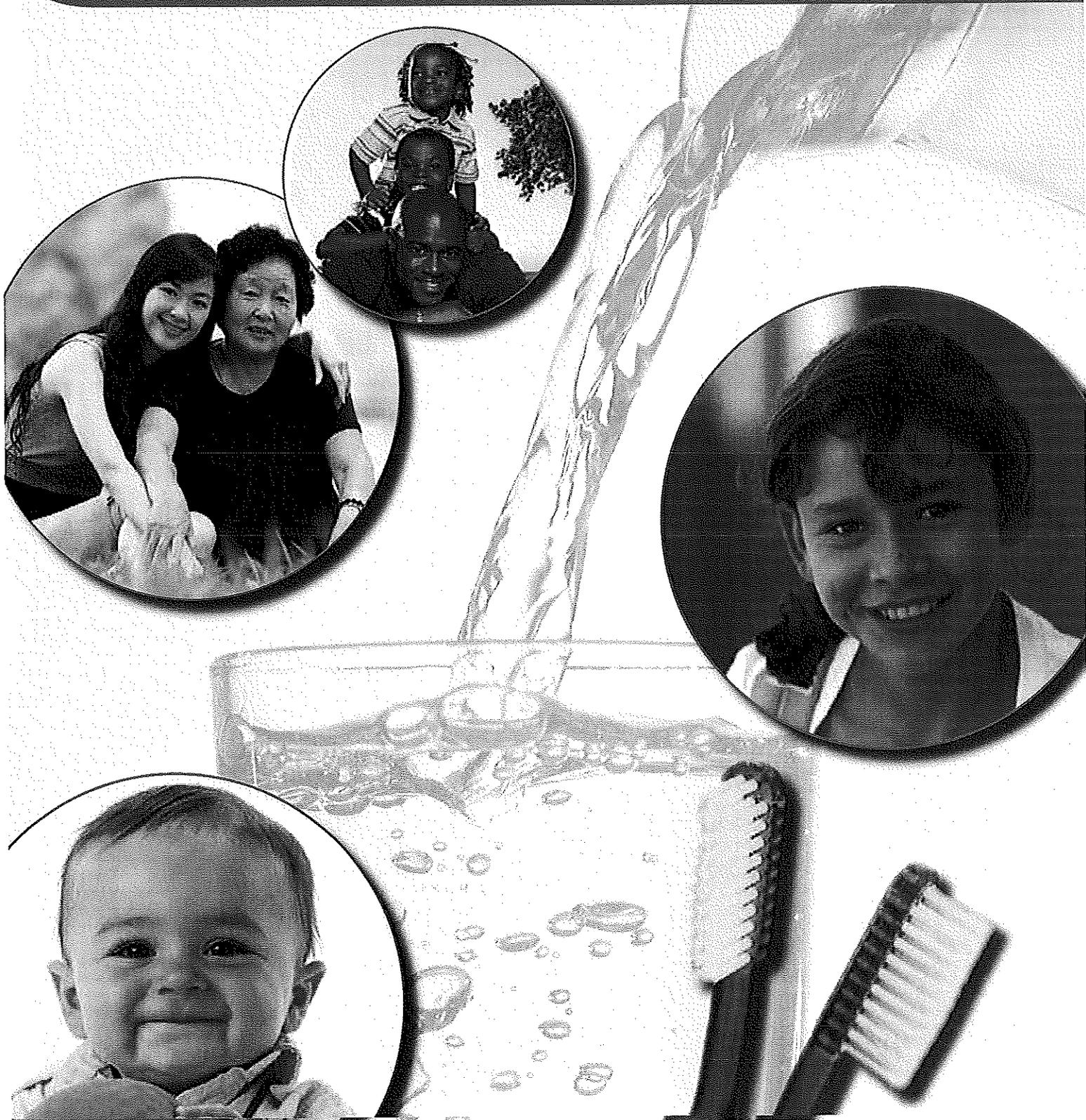
Some information to share with concerned citizens:

- ✓ The preliminary data from our 2010 Count Your Smiles Survey of 3rd graders across the state of Michigan indicates 71% had no signs of dental fluorosis and only 0.04% had perceived severe fluorosis.
- ✓ The changed recommendation is very close to what most water communities were already using. Any reductions needed will be made after the revised recommendation becomes final later this year.
- ✓ Community water fluoridation is still considered safe and effective with no other health effects at the current levels used.
- ✓ There's nothing extraordinary about these announcements. In fact, they are very encouraging because they show that EPA and HHS are exercising their responsibilities to review standards and offer guidance on public health issues.
- ✓ The HHS updated recommendation regarding the optimal level of fluoride for public water supplies that adjust fluoride levels to prevent tooth decay is based upon the latest science. This decision will continue to protect Americans' dental health while also minimizing the chance of dental fluorosis—discoloration of teeth.
- ✓ If more information is needed refer to Susan Deming, Fluoridation Coordinator, MDCH-Oral Health, [demings@michigan.gov](mailto:demings@michigan.gov)

More general information on fluoride for improving dental health including an updated questions and answers document can be found at:  
<http://www.cdc.gov/fluoridation/index.htm>.

All the risk analysis documents, including information on the results of the peer review process, are posted on EPA's website at:  
[http://water.epa.gov/action/advisories/drinking/fluoride\\_index.cfm](http://water.epa.gov/action/advisories/drinking/fluoride_index.cfm).

# Water Fluoridation: A Community Toolkit



## INTRODUCTION

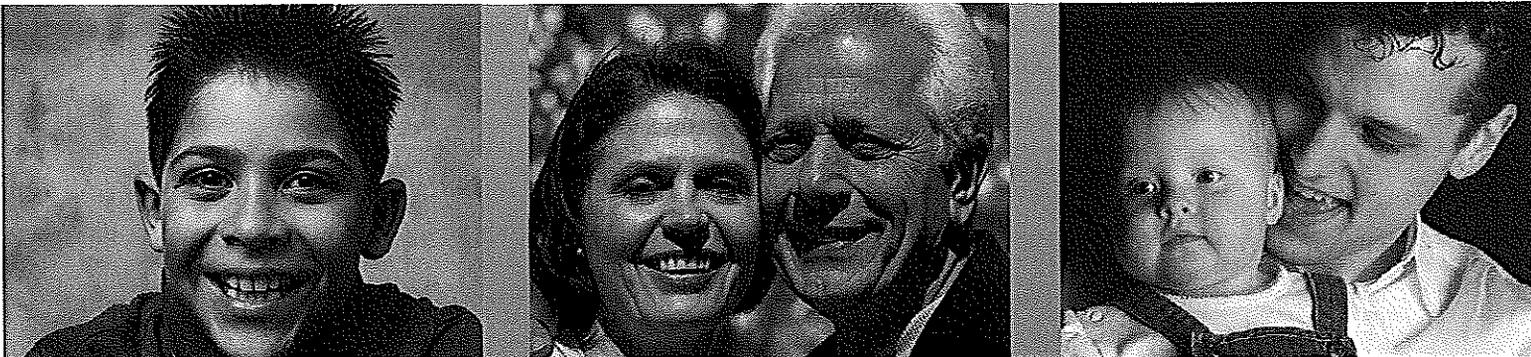


Oral health is important throughout a person's life. The Michigan Oral Health Coalition supports water fluoridation because it is one of the most cost-effective strategies for communities to improve the oral health of their residents.

Fluoride exists naturally in virtually all water supplies. "Fluoridation" is simply adjusting fluoride to the optimal level that protects teeth from decay. Studies show that fluoridation reduces tooth decay and benefits people of all ages and income groups. Two studies released in 2010 strengthened the already substantial evidence that fluoridated water prevents cavities.

As an oral health advocate, the Coalition's "Water Fluoridation: A Community Toolkit" is your resource on the health benefits, cost savings and media outreach on fluoridation. The Coalition encourages you to use the toolkit as you talk with friends, colleagues and opinion leaders within your community about community water fluoridation.

For more information, visit us at [www.mohc.org](http://www.mohc.org) or 517.827.0466.



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## WHAT IS FLUORIDE?

### 5 QUICK FACTS

- Fluoride comes from fluorine—one of the 15 most common elements found on earth.
- Fluoride exists naturally in virtually all water supplies.
- “Fluoridation” is simply adjusting fluoride to the optimal level that protects teeth from decay.
- 90 percent of Michiganders whose homes are connected to a public water system benefit from fluoridated water.
- It’s one of many health interventions (e.g. Vitamin D in milk, Iodine in table salt, Folic acid in breads and cereals and Chlorine in drinking water supplies and swimming pools) we benefit from each day.



### BACKGROUND

More than 65 years ago—in January 1945—Grand Rapids, Michigan, became the world’s first city to adjust the level of fluoride in its water supply. Since that time, fluoridation has dramatically improved the oral health of tens of millions Americans. Community water fluoridation is the single most effective public health measure to prevent tooth decay. The Centers for Disease Control and Prevention proclaimed community water fluoridation as “one of 10 great public health achievements of the 20th century.”

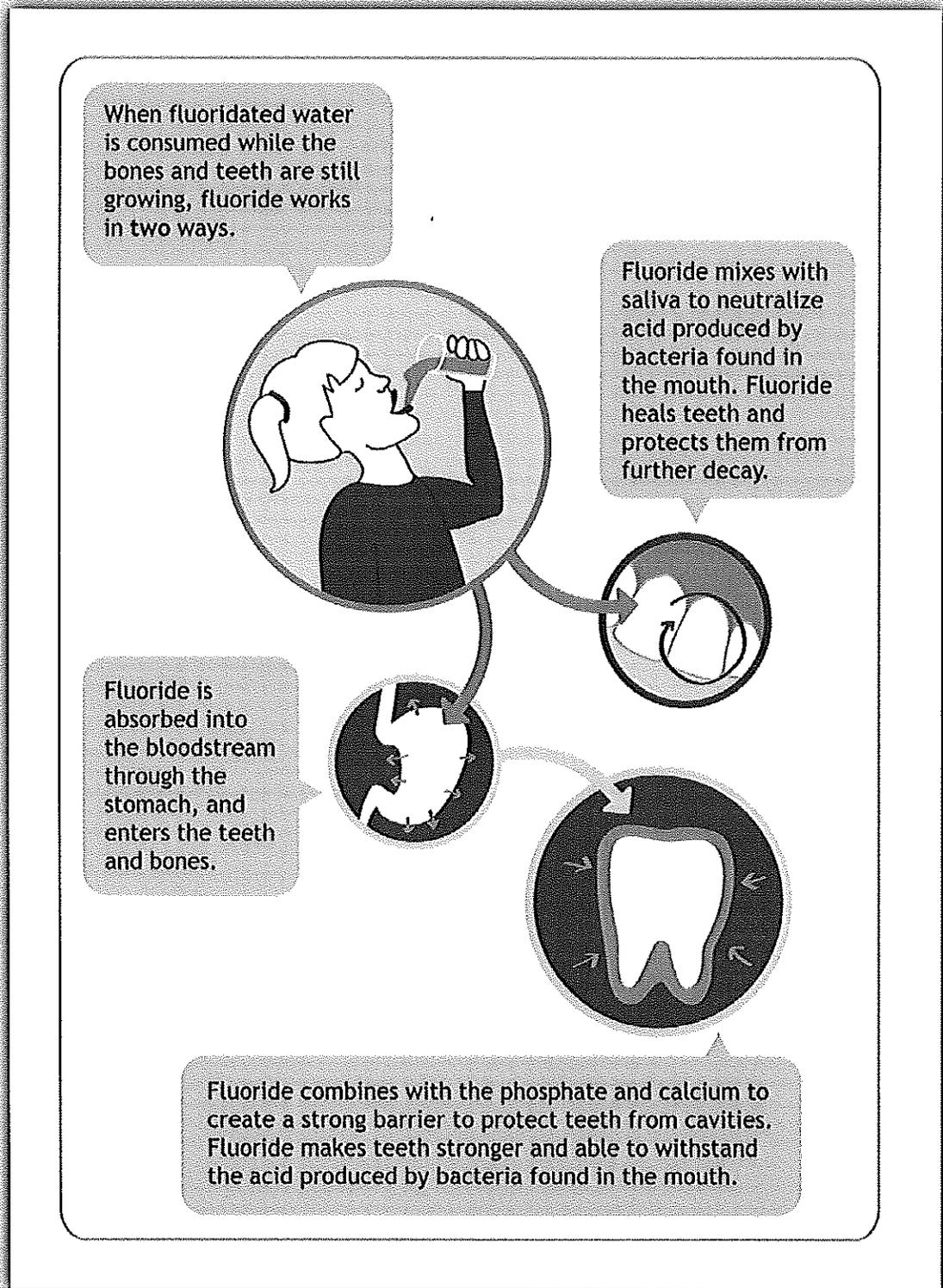
Fluoridation of community water supplies is simply the precise adjustment of the existing and naturally occurring fluoride levels in drinking water to a fluoride level recommended by the U.S. Public Health Service (0.7 parts per million) for the prevention of dental decay. Based on data from 2002, approximately 170 million people (over two-thirds of the population) in the U.S. are served by public water systems that are fluoridated.

Studies conducted throughout the past 60+ years have consistently shown that fluoridation of community water supplies is safe and effective in preventing dental decay in both children and adults. It is one of the most efficient ways to prevent one of the most common childhood diseases—tooth decay (five times as common as asthma and seven times as common as hay fever in 5- to 17-year-olds).

Early studies, such as those conducted in Grand Rapids, showed that water fluoridation reduced the amount of cavities children get in their baby teeth by as much as 60 percent and reduced tooth decay in permanent adult teeth by nearly 35 percent. Today, studies prove water fluoridation continues to be effective in reducing tooth decay by 20-40 percent, even in an era with widespread availability of fluoride from other sources, such as fluoride toothpaste.

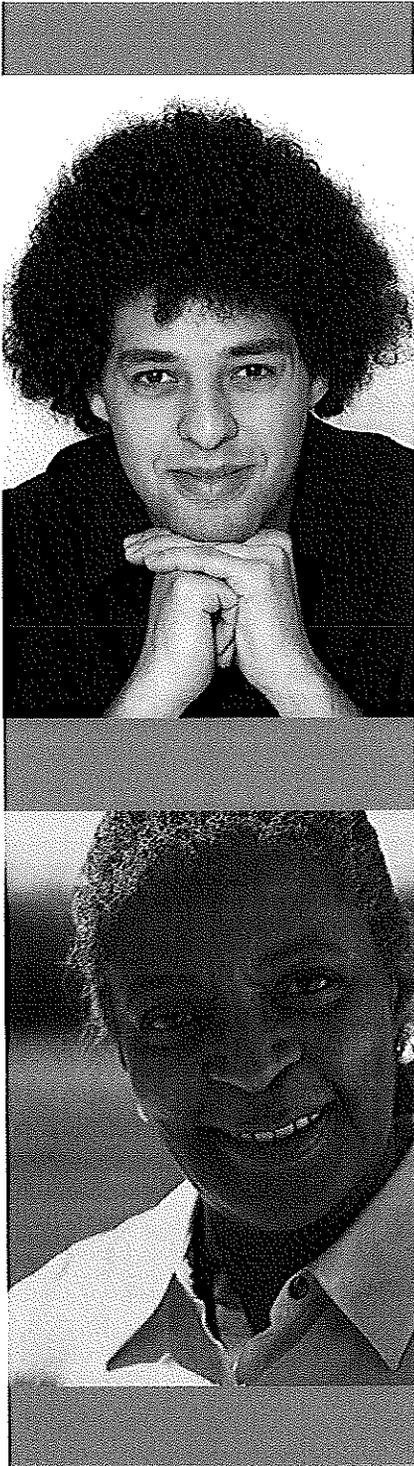
The average annual cost for a community to fluoridate its water is estimated to range from approximately \$0.50 per person in large communities to approximately \$3 per person in small communities. For most cities, every \$1 invested in water fluoridation saves \$38 in dental treatment costs.

## HOW FLUORIDE WORKS



Source: Pew Center on the State

## MYTHS AND FACTS ABOUT WATER FLUORIDATION



**MYTH:** *Adding fluoride to water is like forcing people to take medication.*

**FACT:** Fluoride occurs naturally in water. The term “fluoridated water” simply means that the fluoride level in a water system has been adjusted to a certain level—or optimal level—to prevent tooth decay. Most water systems in the U.S. are fluoride-deficient without this adjustment. Fluoride is not a medication. It is a mineral essential for human life based on its role in metabolism and other cell functions. Fluoride in drinking water has two beneficial effects: preventing tooth decay and contributing to healthy bones. U.S. court decisions have rejected the argument that fluoride is a “medication” that should not be allowed in water. The American Journal of Public Health summarized one of these rulings, noting that “fluoride is not a medication, but rather a nutrient found naturally in some areas but deficient in others.” Adding fluoride to water is like any other treatment to improve the quality of drinking water. It is based on public officials making a decision that is informed by sound research—not driven by fear. Those who prefer not to drink from a public water system can do so. Maintaining an optimal amount of fluoride in water is based on the principle that decisions about public health should be based on what is healthy for the entire community.

**MYTH:** *There is little difference in the dental health of people in communities with fluoridated water compared to those in communities without it.*

**FACT:** There is a clear difference between the health of communities that fluoridate their drinking water and those that do not. Fluoridation prevents tooth decay and improves dental health. Studies consistently show that water fluoridation reduces tooth decay by 18 to 40 percent. A study of two similar, adjacent communities in Arkansas showed that residents without access to fluoridated water had twice as many cavities as those with access to fluoridated water. Children on Medicaid in less fluoridated counties in New York State require 33 percent more treatments for tooth decay than those in counties where most water systems are optimally fluoridated. Texas saves \$24 per child, per year in Medicaid expenditures for children because of the cavities averted by drinking fluoridated water. The benefits of fluoridation are long-lasting. A recent study of U.S. adults found that those born in counties with fluoridation lose fewer teeth than those born in fluoride-deficient counties. International studies across the United States, Australia, Britain, Canada, Ireland, and New Zealand showed 15 to 40 percent less tooth decay in optimally fluoridated communities compared to fluoride-deficient communities. The Centers for Disease Control and Prevention named fluoridated water as one of “10 great public health achievements” of the 20th century.”



Source: Pew Center on the State

**MYTH: Fluoridation causes cancer and other serious health problems.**

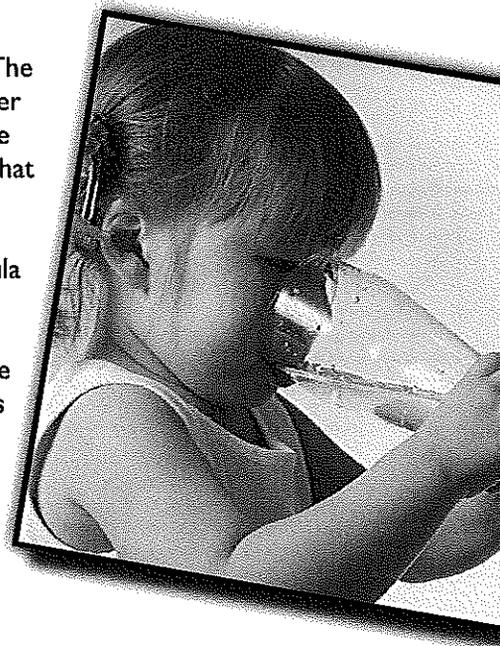
**FACT:** Fluoridated water is safe. Claims that it causes cancer or other life-threatening illnesses are unproven. The National Cancer Institute has stated, “Many studies, in both humans and animals, have shown no association between fluoridated water and risk for cancer.” In 2006, a panel of the National Research Council—an arm of the National Academies of Science—found no convincing evidence of a causal link between fluoridation and cancer. A leading spokesperson for the Centers for Disease Control and Prevention notes that “60 years of research has shown that there’s no persuasive evidence that points to any harm from community water fluoridation.” Fluoridation opponents cite an “exploratory” Harvard study in the mid-1990s associating fluoride with osteosarcoma, a rare bone cancer. The author herself described the study as having “limitations.” In addition, the principal investigator of the study has stated that further analysis does not support this association. The overwhelming evidence shows the benefits of water fluoridation far outweigh any perceived risk. A 2006 study by the Australian National Health and Medical Research Council examined 408 studies on fluoridation, and concluded that water fluoridation offers clear benefits without solid evidence of negative health effects. At least 100 million Americans have been drinking fluoridated water for many decades. Seventy-two percent of the U.S. population served by community systems has fluoridated water. Without fluoridated water, children face a much higher rate of tooth decay and the potential for related dental diseases can have lasting effects on their health, schooling and future. The risk we must avoid is that of allowing our children to grow up without water fluoridation.

**MYTH: There are better ways of delivering fluoride than adding it to water.**

**FACT:** Water fluoridation provides dental benefits to people of all age and income groups without requiring them to spend extra money or change their daily routine. The CDC notes that fluoride is most effective when provided in “the right amount in the right place at the right time,” and there’s no better way to ensure that than fluoridated water. A 2003 study of fluoridation in Colorado concluded that “even in the current situation of widespread use of fluoride toothpaste,” water fluoridation “remains effective and cost saving” at preventing cavities. Studies conducted in communities that fluoridated water in the years after fluoride toothpastes were widely used have shown a lower rate of tooth decay than communities without fluoridated water. For low-income individuals who are at higher risk of dental problems, fluoride rinses are a costly expense, which is why these products are not the “easy” answer that opponents of fluoridation claim they are. Water fluoridation is the least expensive and most effective solution.

**MYTH: Fluoridated water isn’t safe for babies.**

**FACT:** Water fluoridated at the optimal level is safe for babies and young children. The American Academy of Pediatrics and the American Medical Association support water fluoridation. Fluoridated water can be used to reconstitute infant formula. The issue for parents of infants to consider is enamel fluorosis—a minor, cosmetic condition that produces faint white markings on permanent teeth as they are forming (from birth through age 8). The risk of dental fluorosis is low. Even when it occurs, fluorosis is barely noticeable—if noticed at all. Mothers who rely on reconstituted infant formula should consult with their pediatricians about options other than using fluoridated water. Some pediatricians may recommend alternatives to fluoridated water, while others may tell parents to continue using fluoridated water. The CDC concludes the vast majority of fluorosis cases are mild, and fluorosis can also occur in communities without fluoridated water. Fluoridated water has stood the test of time, serving U.S. communities since 1945. Today, over 195 million people (72 percent of Americans on public water supplies) drink fluoridated water. Tens of millions, many of whom are now parents themselves, were given formula reconstituted with fluoridated water when they were infants.





# MICHIGAN DEPARTMENT OF COMMUNITY HEALTH STATEMENT



STATE OF MICHIGAN  
DEPARTMENT OF COMMUNITY HEALTH  
LANSING

NICK SNYDER  
GOVERNOR

OLGA DAZZO  
DEPUTY

## Michigan Community Water Fluoridation Position Statement November 2011

The Michigan Department of Community Health stands firm in its commitment for community water fluoridation. Fluoridation of public water supplies in the United States began over 60 years ago in our own Grand Rapids, Michigan. Currently almost seven million Michigan residents have access to community water fluoridation to reduce dental decay and improve oral health.

Community Water Fluoridation is given strong support and active promotion by over 100 prominent, credible health agencies including the World Health Organization, the Centers for Disease Control and Prevention, and the American Dental and Medical Associations.

Fluoridation is still the most cost effective and efficient way to prevent dental disease. It is an ideal public health measure that benefits all races, all ages, all socio economic status levels. The U.S. Centers for Disease Control and Prevention has recognized the "fluoridation of drinking water as one of ten great public health achievements of the twentieth century." Fluoridation is especially beneficial to the citizens of Michigan who find it difficult to access health care such as children, persons with disabilities, the aging population or those without health or dental insurance.

The safety of community water fluoridation has been researched extensively since its inception as a public health measure in 1945. Scientific study reviews continue to demonstrate the safety and efficacy of fluoridation. Both the Environmental Protection Act and the Michigan Safe Drinking Water Act set standards for the proper amount of fluoride added to our community water supplies.

The Michigan Department of Environmental Quality and the Michigan Department of Community Health Oral Health Program monitor monthly fluoride levels at each community water system in Michigan. At the recommended fluoride levels for optimal oral health, there are no adverse health effects.

The Michigan Department of Community Health supports community water fluoridation as a safe, cost effective, and efficient public health measure to reduce dental decay in its citizens.

  
Olga Dazzo, Director

1/28/11  
Date

DCH-1222

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## SAVINGS FROM WATER FLUORIDATION

Research shows that water fluoridation offers perhaps the greatest return-on-investment of any public health strategy. The reduction in just the costs of filling and extracting diseased teeth—not counting reductions in lost work time and dental pain—more than makes up for the cost of fluoridation. In recent decades, the evidence showing savings has grown:

For most cities, every \$1 invested in water fluoridation saves \$38 in dental treatment costs.

A **Texas** study confirmed that the state saved \$24 per child, per year in Medicaid expenditures for children because of the cavities that were prevented by drinking fluoridated water.

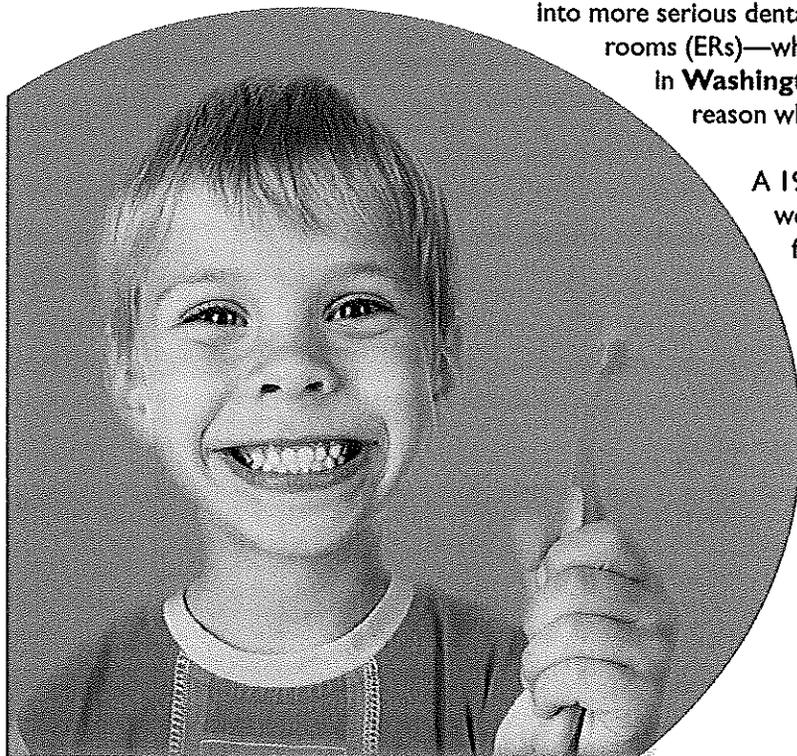
A 2010 study in **New York** State found that Medicaid enrollees in less fluoridated counties needed 33 percent more extractions and other corrective procedures than those in counties where optimal fluoridation was much more common. As a result, the treatment costs per Medicaid recipient were \$23.65 higher for those living in less fluoridated counties.

Researchers estimated that in 2003 **Colorado** saved nearly \$149 million in unnecessary treatment costs by fluoridating public water supplies—average savings of roughly \$61 per person.

By protecting the enamel of teeth, fluoridation makes it less likely that decay will develop into more serious dental problems that drive people to hospital emergency rooms (ERs)—where treatment costs are high. A 2010 survey of hospitals in **Washington State** found that dental disorders were the leading reason why uninsured patients visited ERs.

A 1999 study compared **Louisiana** parishes (counties) that were fluoridated with those that were not. The study found that low-income children in communities without fluoridated water were three times more likely than those in communities with fluoridated water to receive dental treatment in a hospital operating room.

Water fluoridation provides dental benefits to people of all ages and income groups without requiring them to spend extra money or change their daily routine.



Source: Pew Center on the State

## WHY WATER FLUORIDATION MAKES GOOD BUSINESS SENSE



**DENTAL HEALTH'S IMPACT ON THE WORKPLACE:** Tooth decay is the most prevalent chronic disease in childhood, roughly five times more common than asthma. Unlike a cold, decay doesn't go away with time or bed rest; it lingers and can lead to more serious conditions. The consequences of poor dental health not only punish children and families, but also hurt the business climate in several ways.

**REDUCING WORKER PRODUCTIVITY:** Working adults are affected in three ways:

1. Adults who had poor dental health as kids often miss work time dealing with the consequences. An estimated 164 million hours of work are missed each year because of dental issues.
2. Adults who had poor dental health as kids are likely to find it harder to find or keep a good job. Research confirms the hurdles faced by people who are missing front teeth—they are viewed as less intelligent, less trust-worthy and less desirable than people without a gap in their smile.
3. Parents miss work time taking their children to clinics or hospitals for costly, corrective treatments that, in many cases, could have been avoided with proper preventive tools like drinking fluoridated water.

**MISSING SCHOOL:** Missed school days mean missed opportunities to learn. One study found that California children missed 874,000 school days in 2007 due to toothaches or other dental problems. The goal of creating an educated workforce is undermined when health issues interfere with schooling.

**DRIVING UP HEALTH CARE COSTS:** Unmet dental needs burden our health care system. In a one-year study of seven Minnesota hospitals, patients made over 10,000 trips to the emergency room because of dental health issues, costing more than \$4.7 million. A survey of hospitals in Washington State found that dental problems were the leading reason why uninsured patients visited Emergency Rooms.



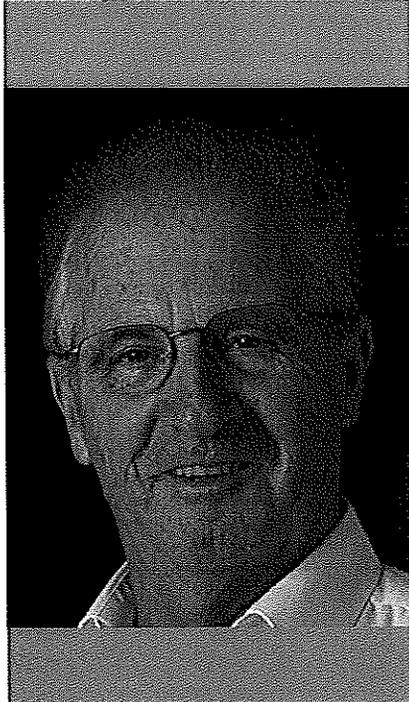
Source: Pew Center on the State

## WATER FLUORIDATION PREVENTS DECAY AND SAVES MONEY



Here's the good news. Research shows that community water fluoridation reduces decay by 18 to 40 percent. Fluoride occurs naturally in nearly all water supplies. "Fluoridation" is simply adjusting fluoride to the level found to prevent tooth decay. In tough fiscal times, fluoridation is a strategy that produces clear savings to communities. Many public health policies can be expensive, but fluoridation costs only about \$1 per person, per year in a medium-sized community, and it actually saves communities money by preventing decay and related treatment costs:

- For most cities, every \$1 spent on water fluoridation saves \$38 in dental costs.
- Fluoridated water saves state Medicaid dollars. A **Texas** study confirmed that the state saved \$24 per child, per year in Medicaid costs for children because of the cavities that were prevented by drinking fluoridated water. A 2010 study in **New York State** found that the dental treatment costs were \$23.65 per-person higher for those living in less fluoridated counties.
- Researchers estimated that in 2003 **Colorado** saved nearly \$149 million in unnecessary treatment costs by fluoridating public water supplies. The average savings were roughly \$61 per person.



It's unrealistic to expect people to get all of the fluoride they need from toothpaste or visiting a dentist. First, more than 16 million children go each year without seeing a dentist, and roughly 45 million Americans don't have dental insurance. In addition, millions of Americans live in areas where there is a shortage of dentists.

Second, the benefits from water fluoridation build on those from fluoride in toothpaste. Studies conducted in communities that fluoridated water in the years after fluoride toothpastes were widely used have shown a lower rate of tooth decay than communities without fluoridated water. The co-author of a 2010 study noted, "Studies have confirmed the most effective source of fluoride to be water fluoridation."

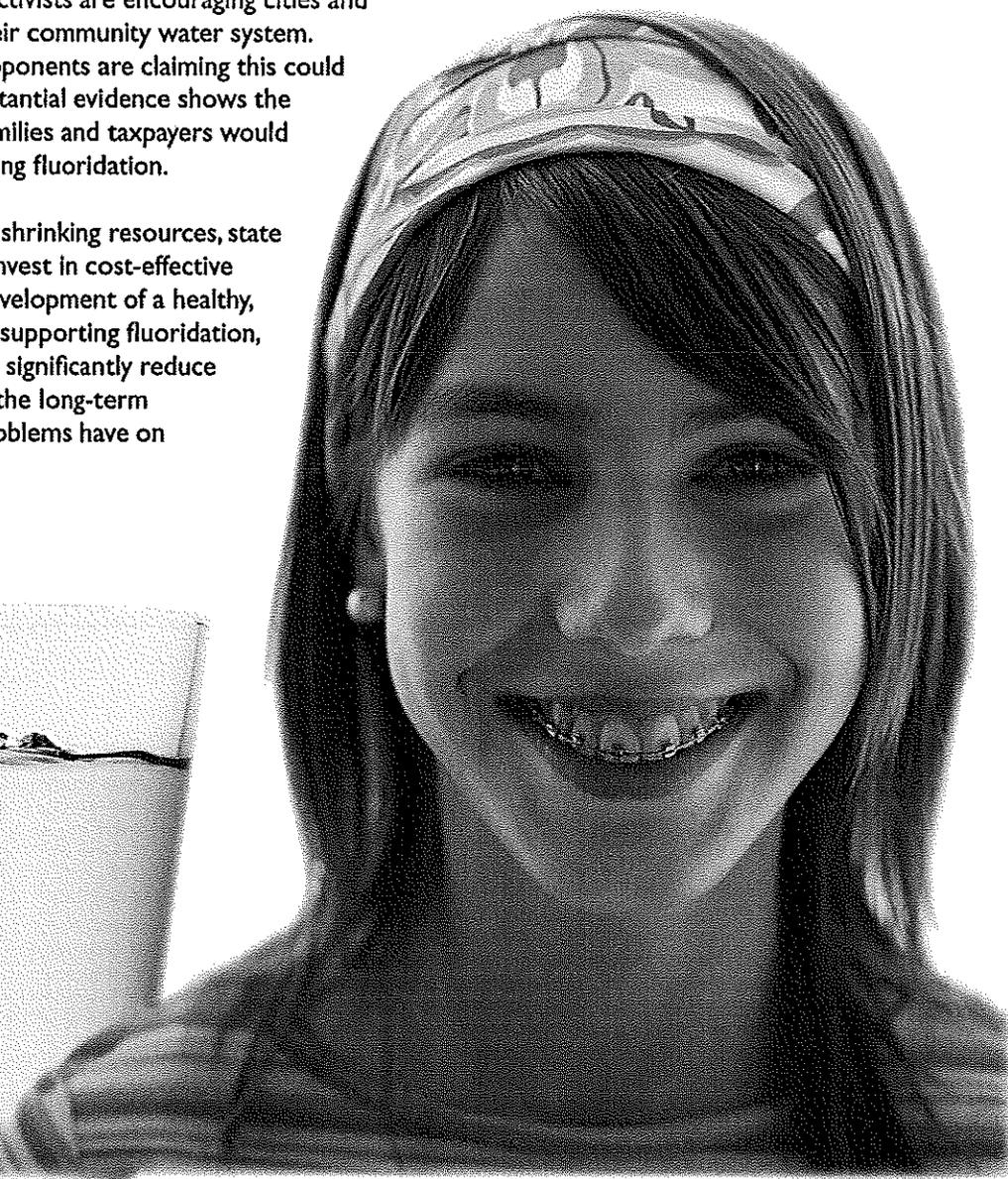


## FLUORIDATION: A SMART INVESTMENT WORTH MAKING AND PRESERVING

Fluoridation is a sound policy supported by the American Academy of Pediatrics, the American Dental Association, the Centers for Disease Control and Prevention, and many other respected health and medical experts. Yet, despite this broad consensus of support, more than 74 million people whose homes are connected to public water systems do not receive fluoride-adjusted water.

Even worse, small groups of activists are encouraging cities and towns to stop fluoridating their community water system. Some of these fluoridation opponents are claiming this could save money, even though substantial evidence shows the opposite is true—children, families and taxpayers would pay a long-term price for ending fluoridation.

In a time of tight budgets and shrinking resources, state and local governments must invest in cost-effective strategies that support the development of a healthy, well-educated workforce. By supporting fluoridation, you can help your community significantly reduce both its dental problems and the long-term economic costs that these problems have on businesses and taxpayers.



Source: Pew Center on the State

## WHAT RESPECTED ORGANIZATIONS SAY ABOUT WATER FLUORIDATION

### **ACADEMY OF GENERAL DENTISTRY:**

"Fluoride makes the entire tooth structure more resistant to decay and promotes remineralization, which aids in repairing early decay before damage is even visible. Studies have confirmed the most effective source of fluoride to be water fluoridation." "Instead of drilling holes to fix cavities, dentists would rather educate the public on how to avoid developing tooth decay in the first place. Drinking tap water to receive fluoride is safe, and it's easier on your wallet than going to the dentist for a filling."

### **AMERICAN ACADEMY OF PEDIATRICS:**

"Fluoride plays a very important role in the prevention of dental caries. Although the primary mechanism of action of fluoride in preventing dental caries is topical, systemic mechanisms are also important."

"Water fluoridation is a cost-effective means of preventing dental caries, with the lifetime cost per person equaling less than the cost of one dental restoration. In short, fluoridated water is the cheapest and most effective way to deliver anticaries benefits to communities."

### **AMERICAN ACADEMY OF FAMILY PHYSICIANS:**

"Fluoridation of public water supplies is a safe, economical, and effective measure to prevent dental caries."

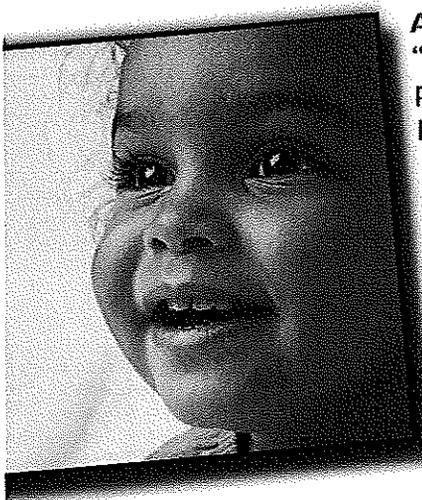
### **AMERICAN ACADEMY OF PHYSICIAN ASSISTANTS:**

"Primary prevention keeps disease from occurring at all by removing its causes. Examples of primary prevention include ... giving immunizations for many communicable diseases, and counseling patients to adopt healthy lifestyles ... Examples include chlorination and fluoridation of the water supply ..."

"Fluoride substantially decreases caries rates. ... All children should receive fluoride through systemic water fluoridation or dietary supplements."

### **AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE:**

"... fluoridation of community water supplies is repeatedly demonstrating that it is an effective public health measure for the mass partial control of dental cavities, and ... [AAAS is] on record as endorsing fluoridation of community water supplies as a method for advancing dental public health, as this 121st meeting of the AAAS."



### **AMERICAN ASSOCIATION OF ORAL AND MAXILLOFACIAL SURGEONS:**

"Community water fluoridation, which adjusts the fluoride in water to a level sufficient for preventing and controlling tooth decay, reduces tooth decay by 30–50%." "Although great progress has been made, nearly 28% of public water systems do not have the capacity to deliver—and approximately 100 million Americans do not have access to—optimally fluoridated water. Many communities need support to upgrade or purchase new water systems and fluoridation equipment."

### **AMERICAN ASSOCIATION OF PUBLIC HEALTH DENTISTRY:**

"... it has been shown that children with the greatest dental need and who are at highest risk for tooth decay benefit the most from water fluoridation." "The Association recommends that federal, state, and local agencies and organizations promote water fluoridation as the foundation for better oral health."

### **AMERICAN ASSOCIATION OF RETIRED PERSONS:**

"[Water fluoridation] is inexpensive and eminently safe. It benefits children and adults for a lifetime if consumption continues. Costs of dental treatment are reduced. It is socially equitable because everyone in a community benefits and no individual effort or direct action is required by those who will benefit."

"...Vocal opponents to fluoridation have attempted to link various adverse health effects with fluoridation. Claims that fluoride is harmful have been amply reviewed by international, national, state, and local authorities. Many committees or commissions of experts in medicine, epidemiology, pathology, pharmacology, and toxicology have reaffirmed the safety of community water fluoridation."

### **AMERICAN COUNCIL ON SCIENCE AND HEALTH:**

"Fluoride is harmless at the levels necessary for maximum (dental) benefits. Thousands of studies on fluorides and fluoridation have been completed in the last 50 years—more than 3,700 since 1970 alone. Over 50 peer-reviewed epidemiological studies have dealt with the claim that fluoridation increases cancer risk. None has substantiated the claim."

### **AMERICAN DENTAL ASSOCIATION:**

"Studies conducted throughout the past 65 years have consistently shown that fluoridation of community water supplies is safe and effective in preventing dental decay in both children and adults. Simply by drinking water, children and adults can benefit from fluoridation's cavity protection whether they are at home, work or school."

### **AMERICAN DENTAL EDUCATION ASSOCIATION:**

"ADEA supports and encourages fluoridation of community water supplies and the use of topical fluoride. Community water fluoridation is safe, practical, and the most cost-effective measure for the prevention of dental caries."

### **AMERICAN DENTAL HYGIENISTS' ASSOCIATION:**

"Good scientific evidence supports the use of community water fluoridation and the use of fluoride dental products for preventing tooth decay for both children and adults."

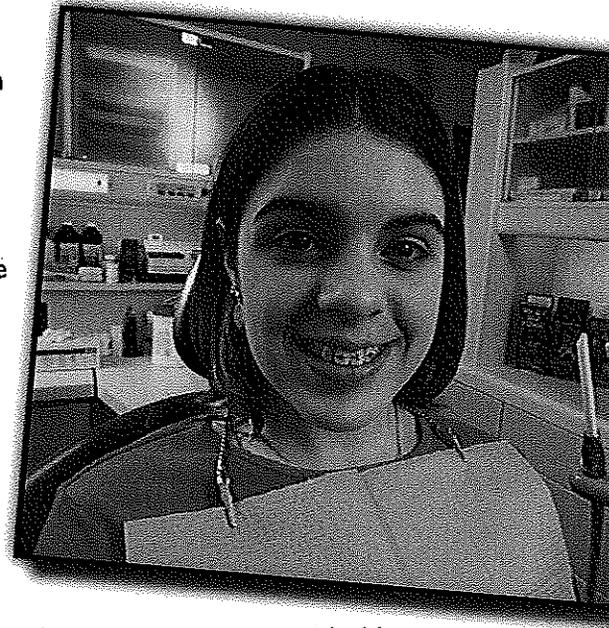
"Adjusting the level of fluoride in drinking water first used fluoride as a preventative for tooth decay in Grand Rapids, Michigan. Fluoridation of drinking water has been used successfully in the United States for more than 50 years."

### **AMERICAN DIETETIC ASSOCIATION:**

"The American Dietetic Association reaffirms that fluoride is an important element for all mineralized tissues in the body. Appropriate fluoride exposure and usage is beneficial to bone and tooth integrity and, as such, has an important, positive impact on health throughout life."

### **AMERICAN FEDERATION OF TEACHERS:**

"The good news is that tooth decay and other oral diseases are preventable. The combination of dental sealants and fluoride has the potential to nearly eliminate tooth decay in school-age children."



## WHAT RESPECTED ORGANIZATIONS SAY ABOUT WATER FLUORIDATION continued

### **AMERICAN MEDICAL ASSOCIATION:**

"The AMA urges state health departments to consider the value of required statewide fluoridation (preferably a comprehensive program of fluoridation of all public water supplies, where these are fluoride deficient), and to initiate such action as deemed appropriate."

AMA has also encouraged physicians to "become involved" in the fluoridation issue by determining "whether municipal water supplies are optimally fluoridated and ... working with public health agencies to take corrective action if suboptimal fluoridation is found."

### **AMERICAN OSTEOPATHIC ASSOCIATION:**

"The American Osteopathic Association supports the fluoridation of fluoride-deficient public water supply."

### **AMERICAN PUBLIC HEALTH ASSOCIATION:**

"[The U.S. Department of Health and Human Services] announced proposed recommendations to simplify the recommended optimal level for community water systems to 0.7 mg/L fluoride ... APHA continues to support community water fluoridation as a sound public health preventive measure."

"Much of the credit for the nation's better oral health can be attributed to the decision in the 1940s to begin adding fluoride to public drinking water systems."

### **AMERICAN WATER WORKS ASSOCIATION:**

"... community water fluoridation at optimal levels is beneficial for preventing tooth decay."

"The goal of community water fluoridation is to achieve the desired oral health benefit while minimizing potential health risks. That is why water providers undergo thorough and extensive training to safely apply fluoride in the amount recommended by the world's most respected public health authorities."

### **ASSOCIATION OF STATE & TERRITORIAL DENTAL DIRECTORS:**

"Community water fluoridation remains the cornerstone of dental caries prevention in the United States and has been demonstrated to be safe, cost-effective and beneficial through every stage of life and for all people, regardless of age, race, ethnicity or socio-economic status."

### **AUDREY F. MANLEY, M.D., M.P.H., SURGEON GENERAL UNDER PRESIDENT BILL CLINTON:**

"Water fluoridation continues to be the cornerstone of community oral disease prevention. The benefits of fluoridation are available, on average, for little more than \$0.50 per person per year; and even less, in large communities."

### **AUTISM SOCIETY OF MAINE:**

"The Autism Society of Maine has seen no direct research connection between fluoride and autism."

### **CANADIAN DENTAL ASSOCIATION:**

"Fluoride is added to public drinking water to protect all members of the community from tooth decay. Community water fluoridation is a safe and effective way of preventing tooth decay at a low cost."



## **CENTERS FOR DISEASE CONTROL AND PREVENTION:**

The CDC named the “fluoridation of drinking water” as one of “10 great public health achievements” of the 20th century.

## **CHILDREN'S DENTAL HEALTH PROJECT:**

“Water fluoridation is particularly beneficial during childhood and in adolescence when cavity experience first begins. Not only do children who drink fluoridated water have fewer cavities but their cavities are smaller and less deep when they do occur.”

## **CHILDREN'S HOSPITAL OF PITTSBURGH:**

“In general, fluoride consumption is safe. Health risks associated with fluoridation are usually limited to misuse and over concentration.”

## **COUNCIL OF STATE GOVERNMENTS:**

“... states need to reduce expenditures in Medicaid budgets and studies have proven that communities benefiting from fluoridated water use fewer Medicaid dollars to treat dental decay.

“... simply by drinking water, everyone, especially those without access to regular dental care, can benefit from fluoridation’s cavity protection whether they are at home, work or school.”

## **DEPARTMENT OF DEFENSE, U.S.A.:**

From a memorandum issued by the Assistant Secretary of Defense for Health Affairs:

“Dental decay continues to be a major problem for military personnel and is a significant reason for personnel to be classified as non-deployable. ... By far, the most effective preventive program for preventing dental decay is water fluoridation. I request that your office ensure that all DoD facilities operating a water treatment facility that services over 3,300 personnel provide optimally fluoridated water ...”

## **EARLY HEAD START NATIONAL RESOURCE CENTER:**

“Fluoride is the most effective agent to prevent tooth decay. It can be added to community water supplies, as needed, and occurs naturally in some areas.”

“... Early Head Start staff and parents should be aware that purchased bottled water usually does not contain enough fluoride to prevent tooth decay.”

## **INDIAN HEALTH SERVICE (U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES):**

“An effective community water fluoridation program should be the cornerstone of all public oral health programs.”

“Recent studies have found a smaller difference in the caries prevalence between optimally fluoridated and fluoride-deficient communities. In American Indian/Alaska Native populations the expected reductions in disease may be even greater, given the high caries rates.”



## WHAT RESPECTED ORGANIZATIONS SAY ABOUT WATER FLUORIDATION continued

### **INSTITUTE OF MEDICINE:**

A panel of the IOM examined the issue of oral health access and issued a 2011 report that included this finding:

“Evidence continues to reaffirm that community water fluoridation is effective, safe, inexpensive, and is associated with significant cost savings.”

### **INTERNATIONAL AGENCY FOR RESEARCH ON CANCER:**

“Fluoridation of drinking-water was introduced in the USA in 1950, and thus the studies in the USA encompass periods of observation of 20 years or more. ... The studies have shown no consistent tendency for people living in areas with high concentrations of fluoride in the water to have higher cancer rates than those living in areas with low concentrations or for cancer mortality rates to increase following fluoridation.”

“Since a large number of comparisons were made, some would be expected by chance alone to show differences. However, no consistent difference has been seen, and there have been as many significant negative associations between fluoridated water supplies and cancer incidence or mortality as there have been positive associations.”

“... Epidemiological studies have shown no association between the presence of fluorides in drinking-water and the incidence of Down’s syndrome.”

### **INTERNATIONAL ASSOCIATION OF DENTAL RESEARCH:**

“The International Association for Dental Research (IADR), considering that dental caries (tooth decay) ranks among the most prevalent chronic diseases worldwide ... 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.”

### **MICHIGAN DEPARTMENT OF COMMUNITY HEALTH:**

“Community water fluoridation has proven to be safe through both practical experience and research. During the past 40 years, over 4,000 studies have measured and confirmed the safety of fluoride. Community water fluoridation has been studied more thoroughly than any other public health measure.”

### **MICHIGAN STATE MEDICAL SOCIETY:**

“The Michigan State Medical Society, in cooperation with the Michigan Association of Public Health and Preventive Medicine Physicians, is urging citizens and public water facilities throughout the state not to misinterpret the new [federal] recommendations regarding the fluoridation of municipal water.”

“... the FDA believes that reducing the level of fluoride in municipal water will help reduce the occurrence of dental fluorosis, a harmless discoloration (mottling) that can occur with higher levels of exposure to fluoride. Fluoridation of water can decrease cavities by up to 40% if available to children during the first 7 years of their lives. The value of fluoridation has been thoroughly established as safe and effective.”

### **NATIONAL CONSUMERS LEAGUE:**

“Bottled water consumption has doubled over the past decade and as a result, the exposure to fluoride from tap water, which can not only prevent tooth decay, it can repair tooth decay, has been reduced as well.”

“Oral health is a critical component of overall health, and we need to spread the word about the importance of brushing with fluoridated toothpaste twice a day, drinking tap water wherever possible, and seeing the dentist twice a year. The benefits will pay off exponentially.”

### **NATIONAL COUNCIL AGAINST HEALTH FRAUD:**

“Antifluoridationists who point out that fluoride can produce adverse effects deliberately fail to mention that the concentrations that produce adverse effects [are] higher than the concentration produced by properly maintained fluoridation systems.”

“... NCAHF believes that the factions that keep alive the antifluoridation movement are a major detriment to the health and well-being of the public.”

### **NATIONAL DENTAL ASSOCIATION:**

“As a result of water fluoridation half of all children ages 5 to 17 have never had a cavity in their permanent teeth. Despite the overwhelming evidence of the value of water fluoridation 34% of the population still does not have access to fluoridated water. Water fluoridation would save over \$1.5 billion per year.”

### **NATIONAL PTA (PARENT-TEACHER ASSOCIATION):**

“PTA involvement laid the groundwork for cooperative partnerships with medical associations and health organizations in the decades to come. ... [PTA also worked] to educate members about other immunizations and treating water with fluoride to prevent rampant dental problems.”

### **PEW CENTER ON THE STATES:**

“Fluoride counteracts tooth decay and strengthens the teeth by fighting harmful acids and drawing calcium back into the teeth. Community water fluoridation can reduce tooth decay in children by up to 60 percent, and it costs as little as \$1 per person, per year.

“Research shows that community water fluoridation offers perhaps the greatest return-on-investment of any dental care strategy. The reduction in just the costs of filling and extracting diseased teeth (not counting reductions in lost work time and dental pain) more than makes up for the cost of fluoridation.”

### **PUBLIC HEALTH LAW RESEARCH (TEMPLE UNIVERSITY):**

“Fluoride is a mineral that has been proven effective at preventing tooth decay.”

“... In the judgment of a Community Guide expert panel, there is significant evidence to support water fluoridation as an effective public health intervention aimed at reducing tooth decay.”



## WHAT RESPECTED ORGANIZATIONS SAY ABOUT WATER FLUORIDATION continued

**RICHARD H. CARMONA, M.D., SURGEON GENERAL UNDER PRESIDENT GEORGE W. BUSH:**

"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."

**ROBERT WOOD JOHNSON UNIVERSITY HOSPITAL:**

"Fluoride, either applied topically to erupted teeth, or ingested orally (called systemic fluoride) during tooth development, helps to prevent tooth decay, strengthen tooth enamel, and reduce the harmful effects of plaque."

**STAND FOR CHILDREN:**

"Proven preventive measures, such as water fluoridation and dental sealants, can markedly reduce dental disease ... Although those people who oppose fluoridation often publicly cite health concerns as the reason for their opposition, a professional poll of anti-fluoridationists found that health concerns were actually number 8 on the list of 10 concerns. The primary reason people are opposed to fluoridation is for philosophical reasons."

**WEBMD.COM:**

"Fluoride helps prevent tooth decay by making the tooth more resistant to acid attacks from plaque bacteria and sugars in the mouth. It also reverses early decay. In children under six years of age, fluoride becomes incorporated into the development of permanent teeth, making it difficult for acids to demineralize the teeth. Fluoride also helps speed remineralization as well as disrupts acid production in already erupted teeth of both children and adults."

**WORLD HEALTH ORGANIZATION:**

"Fluoride is being widely used on a global scale, with much benefit. Millions of people worldwide use fluoridated toothpaste. They benefit from fluoridated water, salt fluoridation or other forms of fluoride applications ..."



## FREQUENTLY ASKED QUESTIONS

The Pew Children's Dental Campaign supports water fluoridation because it's one of the most cost-effective strategies for states and communities to improve the oral health of their residents. Although a number of communities in the U.S. have been fluoridating their public water systems for more than 60 years, this strategy re-entered the spotlight in the wake of recent announcements from federal health officials about fluoride.

This FAQ is meant to answer many key questions about the benefits of fluoridation and address the federal announcements.

**Q: What is fluoride and how does it benefit dental health?**

A: Fluoride is a mineral that exists naturally in nearly all water supplies. Research proves that at a certain level in drinking water, fluoride prevents tooth decay. This optimal level is reached when a public water system adjusts—either increasing or lowering—the level of fluoride.

**Q: I recently found the website of a group that opposes fluoridation. This group claims that the connection between fluoridation and cavity prevention isn't solid. Is that true?**

A: No, it is not true. There is solid, consistent evidence supporting fluoride's role in cavity prevention. Studies show that fluoridation reduces tooth decay by 18 to 40 percent. Two studies released in 2010 strengthened the already substantial evidence that fluoridated water prevents cavities.

**Q: Does fluoride in drinking water protect only the teeth of children or does it benefit everyone?**

A: People of all ages benefit from drinking water that is optimally fluoridated. Oral health is important throughout a person's life. In the 1950s, before water fluoridation was common, most people over the age of 65 had lost their teeth. Now, after decades of widespread fluoridation, more seniors are keeping most or all of their teeth. Between 1972 and 2001, the rate of edentulism—losing all of one's teeth—dropped 26 percent among lower-income seniors and fell 70 percent among upper-income seniors.

**Q: What do leading medical and health organizations say about drinking water that is optimally fluoridated?**

A: The American Academy of Pediatrics, the American Dental Association, the American Medical Association and many other respected medical or health organizations recognize the health benefits of fluoridation. The U.S. Centers for Disease Control and Prevention called water fluoridation "one of 10 great public health achievements of the 20th century."

**Q: Federal health officials recently recommended that public water systems reduce the level of fluoride in drinking water. Exactly what was the recommendation and why was this new level set?**

A: In January 2011, the U.S. Department of Health and Human Services (HHS) recommended that the optimal level of fluoride in public water systems should be 0.7 milligrams per liter (mg/L) of water. This is a change from the previous recommendation that the optimal level would vary by a region's climate (average temperatures) within the range of 0.7 to 1.2 mg/L. This new recommendation by HHS recognizes these scientific findings:

1) Americans today are getting fluoride from more sources than they were when the original level was set, and 2) the water intake of children does not vary by climate or region. This new fluoride level demonstrates that federal health officials are periodically reviewing research and relying on the best science to update—if and when appropriate—their recommendations on fluoridated water.

Source: Pew Center on the State

## FREQUENTLY ASKED QUESTIONS continued

**Q: Are many communities planning on completely removing fluoride from water because of the recent federal announcement on the fluoride level?**

A: Many communities are reviewing their fluoride levels and planning to adjust those levels to meet the new recommendation. There is no sign that many communities either want or plan to remove fluoride entirely. HHS and leading health experts do not support removing fluoride from water to a level below the recommended level because this would deprive people of cavity protection. In fact, the American Dental Association welcomed HHS' new fluoride level and said that water fluoridation remains "one of our most potent weapons in disease prevention." In Grand Rapids, Michigan—the first U.S. city that optimally fluoridated its water system—the city's daily newspaper wrote an editorial noting that the new HHS recommendation "should not feed the flawed notion . . . that fluoride must be removed entirely from drinking water."

**Q. What impact will the new fluoride level have on Americans who are served by a public water system that's fluoridated?**

A: The new optimal fluoride level that federal health officials have recommended will have a positive impact. First, it will continue to protect teeth by helping to reduce tooth decay. Second, the new level will minimize the chances of fluorosis, a condition that typically causes a minor discoloration of teeth that is usually visible only to a dentist. The new HHS recommendation reflects the fact that Americans today receive fluoride from more sources (toothpaste, mouth rinses and other products) than they were getting several decades ago.

**Q: How many Americans receive water that is optimally fluoridated?**

A: Roughly 72 percent of Americans whose homes are connected to a community water system receive fluoride-adjusted water. Some communities have been doing so for over 60 years.

**Q: Water fluoridation helps to prevent tooth decay, but is that really a concern in the U.S. anymore?**

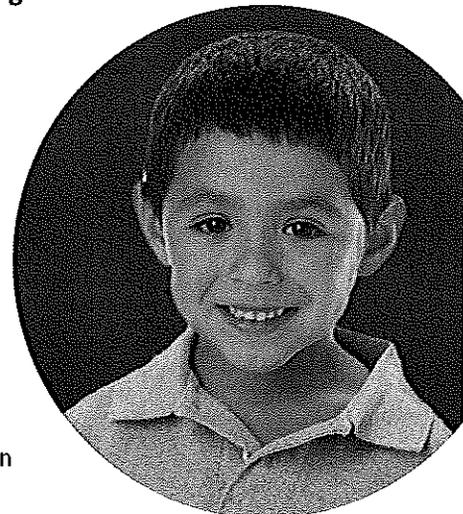
A: Yes, it remains a concern. Although dental health has improved for many Americans, tooth decay remains the most common chronic childhood disease—five times more prevalent than asthma. Tooth decay causes problems that often last long into adulthood, affecting kids' schooling and their ability to get jobs as adults.

**Q: If I use fluoridated toothpaste, am I getting enough fluoride to protect against decay?**

A: No. The benefits from water fluoridation build on those from fluoride in toothpaste. Studies conducted in communities that fluoridated water in the years after fluoride toothpastes were widely used have shown a lower rate of tooth decay than communities without fluoridated water. The author of a 2010 study noted that research has confirmed "the most effective source of fluoride to be water fluoridation." Water fluoridation provides dental benefits to people of all ages and income groups without requiring them to spend extra money or change their daily routine.

**Q: Do any states have laws guaranteeing residents' access to fluoridated water?**

A: Twelve states and the District of Columbia have laws designed to ensure access to fluoridated water. Forty-three of the 50 largest cities in the U.S. fluoridate their drinking water. Research shows that every \$1 invested in water fluoridation saves \$38 in unnecessary dental costs.



## FREQUENTLY ASKED QUESTIONS: INFANTS & FLUORIDATED WATER



**Q. Why do children need fluoride?**

A: Fluoride is an important mineral for young children. As a child's teeth begin to form, fluoride strengthens the enamel to make it resistant to tooth decay. Later, after teeth are in the mouth, fluoride helps to reverse early signs of decay. This is how children benefit from drinking fluoridated water. Fluoride exists naturally in water, and "fluoridation" is simply adjusting fluoride to the optimal level for preventing tooth decay.

**Q. I read something on the Internet suggesting that infants shouldn't be exposed to fluoride. What's this all about?**

A: In recent years, questions have been raised about the use of fluoridated water to prepare infant formula. Some of these questions have come from groups like the Fluoride Action Network, which has a much broader agenda—to prevent Americans of all ages from having access to fluoridated water through their public water systems. The Fluoride Action Network wrongly claimed that the American Dental Association (ADA) recommends "that children under 12 months of age should not consume fluoridated water." In fact, the ADA concludes that "it is safe to use fluoridated water to mix infant formula" and encourages parents to discuss any questions they may have with their dentists and pediatricians.

**Q. What options do parents have if they prefer not to use fluoridated water for infant formula?**

A: Parents or caregivers have three simple alternatives for feeding an infant. First, they can breast-feed their infants, which is what the American Academy of Pediatrics generally recommends. Second, they can use bottled or purified water that contains no fluoride. Third, they can use a ready-to-feed formula that does not require water to be added.

**Q. What is dental fluorosis and will fluoridated water increase the odds that an infant will later develop this condition?**

A: Although using fluoridated water to prepare infant formula might increase the chance that a child develops dental fluorosis, nearly all instances of fluorosis are mild, cosmetic condition. Fluorosis usually appears as very faint white streaks on teeth. For examples of what mild fluorosis looks like, go to this web page: <http://www.ada.org/5576.aspx?currentTab=1>. In fact, the ADA reports that often "the effect is so subtle that, usually only a dental expert would notice it during an examination."<sup>4</sup> It does not cause pain, nor does it affect the function or health of the teeth. And once a child reaches age 8, they cannot develop dental fluorosis.

**Q. Is fluoridated water the reason why the rate of dental fluorosis among children has increased?**

A: Experts point to a different reason. Officials at the Centers for Disease Control and Prevention believe the rise in fluorosis is due mainly to children who swallow fluoride-containing toothpaste when they brush their teeth. Researchers at Oregon State University also point to the swallowing of fluoride toothpaste as a key factor in excess fluoride intake by kids. This is why parents of children under the age of 6 are advised to supervise their kids' tooth-brushing and apply only a pea-sized amount of toothpaste to the toothbrush.

## SUBJECT MATTER EXPERTS

The Coalition convenes the Michigan State Community Water Fluoridation Advisory Committee. The committee promotes optimal water fluoridation for improved oral and overall health. The following individuals are available for questions related to overall health, public health, water safety and community organizing.

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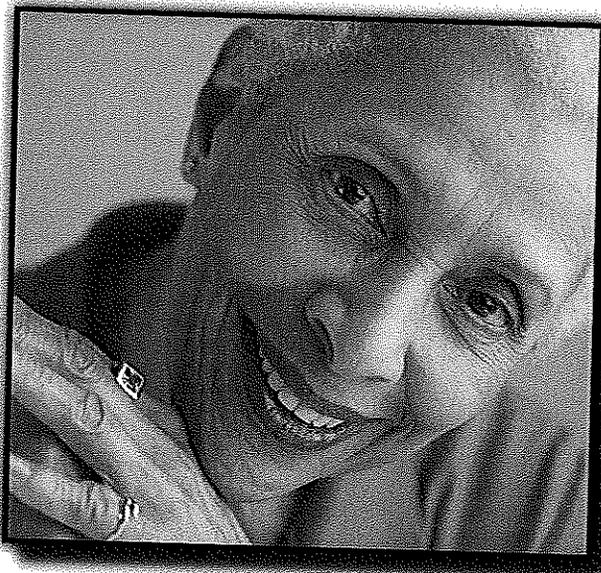
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Fluoridation  
Tap in to  
Your Health

## 10 Reasons to Fluoridate Public Water

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.

Natural. Fluoride is already present in all water sources, even the oceans. Water fluoridation is simply the adjustment of fluoride that occurs naturally to a recommended level for preventing tooth decay.

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.

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.

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.

Safe and effective. For more than 65 years, the best available scientific evidence consistently indicates that community water fluoridation is safe and effective.

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.

Recognized by more than 100 organizations. The American Dental Association (ADA) as well as the Centers for Disease Control and Prevention, the American Medical Association, the World Health Organization and more than 125 national and international organizations recognize the public health benefits of water fluoridation for preventing dental decay.

Availability of fluoridation continues to grow. In 2010, 73.9 percent of the U.S. population on public water systems (204.3 million people) received fluoridated water. This is an increase of almost nine percent 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.

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).