

**City Of Woodland  
Council Agenda Summary Sheet**

<b>Agenda Item:</b>  Approval of Resolution 637 – Maintain fluoridation of the municipal water system	<b>Agenda Item #:</b> <u>Action ( C )</u> <b>For Agenda of:</b> <u>August 19, 2013</u> <b>Department:</b> <u>Public Works</u> <b>Date Submitted:</b> <u>August 13, 2013</u>
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**Cost of Item:** NA  
**Amount Budgeted:** NA  
**Unexpended Balance:** NA

<b>BARS #:</b>  <b>Description:</b>
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**Department Supervisor Approval:** Public Works Department /s/ *Bart Stupp*

**Agenda Item Supporting Narrative (list attachments, supporting documents):**

- 1) Resolution #637 – Maintain Fluoridation
- 2) 31113 City Council Workshop report on fluoridation

**Summary Statement:**  
Background:  
In late 2012 several residents approached city staff about stopping fluoridation. The Public Works Committee at their January meeting forwarded to a full city council workshop. At the March workshop council asked that staff do a survey in the utility billing asking residents on what they thought about fluoridation. At the June 24<sup>th</sup> workshop staff presented the survey results to City Council which only had 155 responses. At the July 15<sup>th</sup> council meeting council directed staff to prepare two resolutions for the August 19<sup>th</sup> council meeting. One for eliminating fluoridation and one for maintaining fluoridation of the water system.

**RESOLUTION NO. 637**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WOODLAND TO MAINTAIN FLUORIDATION OF THE MUNICIPAL DRINKING WATER SYSTEM**

**WHEREAS**, local residents requested the City stop fluoridating the municipal water system; and

**WHEREAS**, the Public Works Committee on January 8, 2013 voted to workshop the issue of fluoridation with the entire City Council; and

**WHEREAS**, at the March 11, 2013 workshop City Council discussed the issue of fluoridation and requested that the City take a survey of residents in conjunction with a utility billing; and

**WHEREAS**, the City only received 155 survey responses in regards to fluoridation; and

**WHEREAS**, City Council directed staff at the July 15<sup>th</sup> council meeting to present a resolution for maintaining fluoridation for City Council review at the August 19<sup>th</sup> City Council Meeting following a public hearing.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF WOODLAND, WASHINGTON, HEREBY RESOLVES AS FOLLOWS:**

The City of Woodland City Council takes an official position that the City shall continue to add fluoride to its municipal water system according to Washington State Department of Health guidelines.

ADOPTED by the City of Woodland City Council this 19<sup>TH</sup> day of August, 2013.

APPROVED:

\_\_\_\_\_  
Grover B. Laseke, Mayor

ATTEST

\_\_\_\_\_  
Mari E. Ripp, Clerk-Treasurer

APPROVED AS TO FORM:

\_\_\_\_\_  
William Eling, City Attorney

**City Of Woodland  
Council Agenda Summary Sheet**

<b>Agenda Item:</b>  Approval of Resolution 637 – Eliminate fluoridation in the municipal water system	<b>Agenda Item #:</b>	<u>Action ( )</u>
	<b>For Agenda of:</b>	<u>August 19, 2013</u>
	<b>Department:</b>	<u>Public Works</u>
	<b>Date Submitted:</b>	<u>August 13, 2013</u>

<b>Cost of Item:</b>	<u>NA</u>
<b>Amount Budgeted:</b>	<u>NA</u>
<b>Unexpended Balance:</b>	<u>NA</u>

<b>BARS #:</b>
<b>Description:</b>

**Department Supervisor Approval:** Public Works Department /s/ *Bart Stupp*

**Agenda Item Supporting Narrative (list attachments, supporting documents):**

- 1) Resolution #637 – Fluoridation
- 2) 31113 City Council Workshop Fluoride Report

**Summary Statement:**

Background:

In late 2012 several residents approached city staff about stopping fluoridation. The Public Works Committee at their January meeting forwarded to a full city council workshop. At the March workshop council asked that staff do a survey in the utility billing asking residents on what they thought about fluoridation. At the June 24<sup>th</sup> workshop staff presented the results to City Council which indicated 56% of the survey respondents were against fluoridation in their water system while 36% supported fluoridation. At the July 15<sup>th</sup> council meeting council directed staff to prepare two resolutions for the August 19<sup>th</sup> council meeting. One for eliminating fluoridation and one for keeping fluoridation of the water system.

Eliminating fluoridation would result in a savings of about \$3,000 per year in the water fund.

**RESOLUTION NO. 637**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WOODLAND TO STOP FLUORIDATION OF THE MUNICIPAL DRINKING WATER SYSTEM**

**WHEREAS**, local residents requested the City stop fluoridating the municipal water system; and

**WHEREAS**, the Public Works Committee on January 8, 2013 voted to workshop the issue of fluoridation with the entire City Council; and

**WHEREAS**, at the March 11, 2013 workshop City Council discussed the issue of fluoridation and requested that the City take a survey of residents in conjunction with a utility billing; and

**WHEREAS**, 56% of the survey respondents wanted the City to stop fluoridation of the municipal water system; and

**WHEREAS**, City Council directed staff at the July 15<sup>th</sup> council meeting to present a resolution for eliminating fluoridation for City Council review at the August 19<sup>th</sup> City Council Meeting.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF WOODLAND, WASHINGTON, HEREBY RESOLVES AS FOLLOWS:**

The City of Woodland City Council takes an official position that the City shall no longer add fluoride to its municipal water system.

ADOPTED by the City of Woodland City Council this 19<sup>TH</sup> day of August, 2013.

APPROVED:

\_\_\_\_\_  
Grover B. Laseke, Mayor

ATTEST

\_\_\_\_\_  
Mari E. Ripp, Clerk-Treasurer

APPROVED AS TO FORM:

\_\_\_\_\_  
William Eling, City Attorney

**City Of Woodland  
City Council Workshop Summary Sheet**

<b>Agenda Item:</b> Fluoridation in Drinking Water	<b>Agenda Item #:</b> <u>Workshop Item</u>
	<b>For Agenda of:</b> <u>March 11, 2013</u>
	<b>Department:</b> <u>Public Works</u>
	<b>Date Submitted:</b> <u>March 5, 2013</u>

**Cost of Item:** NA  
**Amount Budgeted:** NA  
**Unexpended Balance:** NA

**BARS #:** NA  
**Description:** Fluoridation of Drinking Water

**Department Supervisor Approval:** Public Works Department /s/ *Bart Stepp*  
**Committee Recommendation:** Public Works Committee at 1/8/13 meeting voted 3-0 to discuss fluoridation at a City Council Workshop.

**Agenda Item Supporting Narrative (list attachments, supporting documents):**

- 1) EPA Fact Sheet on Fluoride
- 2) Information on Fluoride from Centers for Disease Control
- 3) Oregonlive.com article on Portland Fluoridation
- 4) KGW.com article on Portland Fluoridation
- 5) Article Provided by resident Norah Grooms\*

**Summary Statement:**

Background:

Mayor Laseke and PWD Stepp have both received e-mails in the last year from residents concerned about the use of fluoride in Woodland's Water. In response Mayor Laseke requested that the Public Works Committee look into the issue.

At the 1/8/13 Public Works Committee Meeting I presented information on Woodland's past and present fluoridation practices and provided some basic information on fluoride to the committee. After reviewing the information and discussing at the meeting the committee voted to workshop the item.

History of Fluoridation in Woodland:

The City of Woodland has fluoridated off and on for at least 20 years. I say off and on because apparently the fluoridation equipment broke down sometime in the 1990's and the operator chose not to fix it for a while until Rob VanderZanden was hired and had the City repair the equipment and start fluoridating again. I found no record of there ever being a public vote on fluoridation, which isn't required but is pretty common for fluoridation.

### Woodland Fluoride System Facts:

A fluoride injection system is relatively inexpensive, around \$5,000. It consists of a metering pump, saturator, storage tank, and associated piping. Annual chemical costs are around \$3,000. Woodland currently doses the water system at a fluoride level of around 1.0 mg/l. EPA has recommended lowering dosage levels to 0.7 mg/l but that has not been adopted by the Washington State Department of Health Drinking Water Program.

In Clark and Cowlitz Counties, Castle Rock, Kalama, Kelso, Longview, Vancouver, Battle Ground, and Camas fluoridate their water. Clark Public Utilities, Washougal, and Ridgefield do not fluoridate their water

### Staff Comments

Fluoridation is a very emotional subject for some people. I do believe overall it provides a dental benefit for the community, especially for low income residents that do not have good access to dental care. To continue fluoridating is not a big cost to the City nor is it a large time constraint on my staff.

On the other hand the chemical is considered a poison and special handling is required at the water treatment plant. The Department of Health does not require fluoridation but Cities that do fluoridate are responsible for daily monitoring and monthly reporting of fluoride levels.

### Article Provided by Norah Grooms\*

Resident Norah Grooms is somebody who has previously contacted Mayor Laseke and myself and does not want the City to fluoridate the water. I invited Norah to speak at this workshop but she was unable to make it. I asked her if she wanted to provide anything to council for this workshop and she provided the article at the end of this packet authored by Mike Adams in 2004.

## Community Water Fluoridation

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### Fluoridation Basics

#### Overview

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](#), but it is also [cost-saving](#) 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 community 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 79.6 percent of the population to be served by optimally fluoridated community water systems by 2020. The current population with access to fluoridated water is 73.9 percent.

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

#### Related Links



### Contact Info

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Division of Oral Health  
Mail Stop F-10  
4770 Buford Highway NE  
Atlanta, GA 30341

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[Community Water Fluoridation: Questions and Answers](#)  
[Community Water Fluoridation Fact Sheets](#)

Date last reviewed: April 27, 2012

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### Benefits

- [Overview](#) – An overview of community water fluoridation.
- [Selected reports and journal articles](#) – Detailed evidence supporting the benefits of community water fluoridation.
- [Cost effectiveness](#) – Comprehensive reviews on the science available to determine the benefits and effectiveness of community water fluoridation.
- [Systematic and evidence-based reviews](#) – Critical examination of scientific evidence to make recommendations on the benefits of community water fluoridation.

### Surgeons General Statements on Community Water Fluoridation

The past five Surgeons General supported community water fluoridation and encouraged communities to fluoridate their water. Here are the most recent three statements.

- 2004, [Richard H. Carmona, MD, MPH, FACS, VADM, USPHS](#)
- 2001, [David Satcher, MD, PhD](#)
- 1995, [Audrey F. Manley, MD, MPH](#)

### Overview

All residents of a community can enjoy community water fluoridation's protective benefits simply by consuming foods and beverages prepared with fluoridated water. A person's income level or ability to receive routine dental care is not a barrier to receiving its health benefits.

### Fluoridation Basics

Provides general information on the history and benefits of community water fluoridation

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### Selected Reports and Journal Articles

#### The Halo Effect: Quantifying the diffused benefit from water fluoridation in the United States

Griffin SO, Gooch BF, Lockwood SA, Tomar SL. *Community Dent Oral Epidemiol* 2001;29:120–129. Demonstrates the total contribution of water fluoridation, not just to fluoridated communities but to surrounding nonfluoridated communities as well. This article helps to:

- Explain the reason for the decrease in measurable effectiveness of fluoridation efforts over time.
- Explain that rates of dental disease between fluoridated and nonfluoridated communities underestimate the effectiveness of community water fluoridation because nonfluoridated communities are receiving benefits from neighboring fluoridated communities.
- Quantify the diffused benefit of community water fluoridation.
- Explain increases in dental decay if fluoridation is discontinued by taking into account the diffusion effect.

The following selected reports and journal articles provide more detailed evidence supporting the benefits of community water fluoridation (see also [Systematic Reviews](#)).

#### [Oral Health in America: A Report of the Surgeon General](#)

Chapter 7 presents the evidence for community water fluoridation for prevention of tooth decay.

#### [Achievements in Public Health 1900–1999—Fluoridation of Drinking Water to Prevent Dental Caries](#)

*MMWR*, October 22, 1999;48(41):933–940.

Recognizes community water fluoridation as one of the 10 great public health achievements of the 20th



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century, provides a brief history of water fluoridation, and describes the historical decline in tooth decay.

#### [Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride\\*](#)

Describes the dietary reference intakes for specific nutrients known to be beneficial to health, including fluoride. As is the case with all nutrients, there are recommendations for both adequate intake and tolerable intake levels. This report addresses both benefits and safety.

#### [Scientific Reviews: Assessing the Weight of the Evidence](#)

Various scientific reviews that provide compelling evidence that community water fluoridation is a safe and effective method for reducing tooth decay.

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### **Cost Effectiveness**

#### [An Economic Evaluation of Community Water Fluoridation.](#) (PDF 1.0Mb)

Griffin SO, Jones K, Tomar SL. *J Publ Health Dent* 2001;61(2):78–86. An analysis of the most current data available on the effectiveness and costs of water fluoridation. The study compares average per person cost of community water fluoridation with the cost of prevented disease. This study:

- Demonstrates that fluoridation not only is cost-effective, but also is cost saving, which is rare for public health interventions.
- Shows that the reduction in costs of fillings (dental restorations) greatly exceeds the cost of water fluoridation in communities of any size.
- Illustrates the annual per person water fluoridation costs for communities of various sizes.
- Determines an average cost savings, which ranges from \$15.95 per person per year in a small community to \$18.62 per person per year in a larger community.

#### [Cost Savings of Community Water Fluoridation](#)

Studies continue to show that widespread community water fluoridation prevents cavities and saves money, both for families and the health care system.

#### [Water Fluoridation and Costs of Medicaid Treatment for Dental Decay—Louisiana, 1995–1996](#)

*MMWR*, September 3, 1999;48(34):753–757.

Findings suggest that Medicaid-eligible children in communities without community water fluoridation had an increased cost for dental treatment per child that was twice as high as those children living in fluoridated communities.

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### **Systematic and Evidence-based Reviews**

Comprehensive reviews on the science available to determine the benefits and effectiveness of community water fluoridation.

#### [Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States.](#)

*MMWR*, August 17, 2001;50(RR-14):1–42. Also available as a [PDF file](#) (PDF 373K).

Provides guidance to health care providers, public health officials, policymakers, and the general public on how to achieve maximum protection against tooth decay while using dental care resources efficiently and minimizing any cosmetic concerns.

#### [Reviews of Evidence on Interventions to Prevent Dental Caries, Oral and Pharyngeal Cancers, and Sports-Related Craniofacial Injuries\\*](#)

From the Task Force on Community Preventive Services, provides information on the studies used in the evidence review on community water fluoridation, the suitability of the study designs, and quality of the evidence used to determine the magnitude of effectiveness of community water fluoridation.

#### **Summary Report**

#### [Promoting Oral Health: Interventions for Preventing Dental Caries, Oral and Pharyngeal Cancers, and Sports-Related Craniofacial Injuries](#)

*MMWR*, November 30, 2001;50(RR21):1–13.

Reinforces the evidence-based prevention activities of community water fluoridation and school-based or school-linked dental sealant programs.

#### [A Systematic Review of Public Water Fluoridation \\*](#)

Done by the University of York in the United Kingdom, this is a systematic review of the best available evidence on positive and negative effects of community water fluoridation.

#### [Review of Fluoride: Benefits and Risks](#)

Comprehensive review and evaluation of the public health benefits and risks of fluoride from drinking water

and other sources by the U.S. Public Health Service.

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 One or more documents on this Web page is available in Portable Document Format (PDF). You will need [Acrobat Reader](#) to view and print these documents.

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# Community Water Fluoridation

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## 2010 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, 2010, and the U.S. Census Bureau estimates from 2010.

### National Water Fluoridation Statistics

Total U.S. population, persons <sup>a</sup>	308,745,538
U.S. population on community water systems, persons <sup>b</sup>	276,607,387
Total U.S. population on fluoridated CWS, persons <sup>b</sup>	204,283,554
Percentage of U.S. population receiving fluoridated water <sup>c</sup>	66.2%
Percentage of U.S. population on CWS receiving fluoridated water <sup>d</sup>	73.9%
Total number of CWS in United States <sup>b</sup>	54,293
Number of CWS providing fluoridated water <sup>b</sup>	18,427
Number of CWS adjusting fluoride <sup>b</sup>	6,042
Number of CWS consecutive to systems with optimal fluoride levels <sup>b</sup>	6,795
Number of CWS with naturally occurring fluoride at or above optimal levels <sup>b</sup>	5,590
Population served by CWS with naturally occurring fluoride <sup>b</sup>	10,077,922

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

State	%	Persons receiving fluoridated water	Persons served by CWS	State	Rank
United States	73.9	204,283,554	276,607,387	Kentucky	1
Alabama <sup>e</sup>	80.0	3,821,766	4,779,736	Maryland	2
Alaska	62.8	404,039	643,373	Illinois	3
Arizona	56.7	3,114,799	5,493,584	Minnesota	4
Arkansas	64.7	1,724,131	2,666,306	North Dakota	5
California <sup>f</sup>	62.1	22,812,721	36,756,666	Virginia	6
Colorado <sup>e</sup>	70.1	3,523,554	5,029,196	South Dakota	7
Connecticut	91.0	2,370,423	2,604,427	Indiana	8
Delaware	86.2	705,344	818,110	West Virginia	9
District of Columbia	100.0	595,000	595,000	Iowa	10
Florida	78.0	13,377,651	17,156,553	Georgia	11
Georgia <sup>e</sup>	92.1	8,924,598	9,687,653	Michigan	Tied for 12
Hawaii <sup>f</sup>	10.8	139,598	1,290,549	Tennessee	Tied for 12
Idaho	30.5	335,127	1,099,561	Connecticut	14
Illinois	99.3	11,325,132	11,403,176	Wisconsin	15



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Indiana	94.4	4,326,732	4,582,296	Ohio	16
Iowa	92.3	2,344,818	2,541,455	North Carolina	17
Kansas	65.1	1,155,071	1,775,588	South Carolina	18
Kentucky <sup>e</sup>	99.9	4,334,223	4,339,367	Delaware	19
Louisiana <sup>e</sup>	40.7	1,846,149	4,533,372	Rhode Island	20
Maine	79.0	521,414	660,367	Texas	21
Maryland	99.8	5,140,618	5,151,947	Alabama	22
Massachusetts <sup>e</sup>	70.7	4,626,859	6,547,629	Missouri	23
Michigan	91.6	7,322,410	7,996,744	Maine	24
Minnesota	98.8	4,117,266	4,166,424	Florida	25
Mississippi <sup>e</sup>	55.2	1,639,348	2,967,297	New Mexico	26
Missouri	79.8	3,966,102	4,966,951	New York	27
Montana	29.6	233,221	788,705	Nevada	28
Nebraska	70.2	1,001,665	1,425,929	Massachusetts	29
Nevada	72.9	1,855,460	2,544,079	Nebraska	30
New Hampshire	42.9	357,262	832,631	Colorado	31
New Jersey	13.5	1,111,624	8,221,293	Kansas	32
New Mexico	77.0	1,210,777	1,571,600	Arkansas	Tied for 33
New York <sup>e</sup>	74.7	14,468,141	19,378,102	Oklahoma	Tied for 33
North Carolina	87.3	6,174,598	7,072,012	Washington	35
North Dakota	96.9	559,246	577,325	Alaska	36
Ohio	87.7	8,772,683	10,005,412	California	37
Oklahoma	64.7	2,296,459	3,547,668	Arizona	38
Oregon	22.6	833,227	3,688,540	Vermont	39
Pennsylvania	54.6	5,802,260	10,636,421	Mississippi	40
Rhode Island	85.3	853,580	1,000,413	Pennsylvania	41
South Carolina	87.1	3,434,565	3,944,594	New Hampshire	42
South Dakota	94.8	642,942	678,028	Louisiana	43
Tennessee	91.6	5,336,600	5,827,549	Wyoming	44
Texas	80.4	19,362,219	24,080,084	Utah	45
Utah <sup>e</sup>	33.2	918,473	2,763,885	Idaho	46
Vermont	56.6	256,006	452,116	Montana	47
Virginia	95.6	6,124,274	6,403,141	Oregon	48
Washington	64.6	3,490,031	5,402,328	New Jersey	49
West Virginia	92.4	1,208,015	1,307,369	Hawaii	50
Wisconsin	87.9	3,300,037	3,755,613		
Wyoming	36.8	165,296	449,223		

#### Footnotes

a. Census Population Count 2010. Intercensal Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2010. Source: Population Estimates Program, U.S. Census Bureau. Internet release date: December 21, 2011. Available at <http://www.census.gov/popest/data/intercensal/state/state2010.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 U.S. 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 serves 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>.

- c. Fluoridated population divided by total population.
- d. Fluoridated population divided by population served by community water systems.
- e. Population served by CWS exceeded the U.S. Census state population estimate; number of persons was reduced by the ratio of the population estimate to the CWS population estimate.
- f. Complete data were not available from WFRS; state provided additional information.

#### **Additional Resources**

More detail on U.S. Census Bureau estimates can be found at [Calculating Fluoridation Statistics](#)

Historical fluoridation statistics are available at [Reference Statistics](#)

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## Water: Basic Information about Regulated Drinking Water Contaminants

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# Basic Information about Fluoride in Drinking Water

## **New!** Review of Fluoride Drinking Water Standard

- [EPA reviews fluoride drinking water standard.](#)
- [Questions and Answers about new science assessments and decision to review drinking water standard PDF](#) (10pp, 55K, [About PDF](#)).
- [New health effects and exposure assessments.](#)

EPA regulates fluoride in drinking water to protect public health. Fluoride may cause health problems if present in public or private water supplies in amounts greater than the drinking water standard set by EPA.

- [What is fluoride?](#)
- [Uses for fluoride.](#)
- [What are fluoride's health effects?](#)
- [What are EPA's drinking water regulations for fluoride?](#)
- [How does fluoride get into my drinking water?](#)
- [How will I know if fluoride is in my drinking water?](#)
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- [How do I learn more about my drinking water?](#)

### What is fluoride?

Fluoride compounds are salts that form when the element, fluorine, combines with minerals in soil or rocks.

### Uses for fluoride.

Many communities add fluoride to their drinking water to promote dental health.

If you are concerned about fluoride in a private well, please visit:

- [EPA's private drinking water wells Web site](#)
- [Water Systems Council Web site](#) [EXIT Disclaimer](#)

### What are fluoride's health effects?

Exposure to excessive consumption of fluoride over a lifetime may lead to increased likelihood of bone fractures in adults, and may result in effects on bone leading to pain and tenderness. Children aged 8 years and younger exposed to excessive amounts of fluoride have an increased chance of developing pits in the tooth enamel, along with a range of cosmetic effects to teeth.

This health effects language is not intended to catalog all possible health effects for fluoride. Rather, it is intended to inform consumers of some of the possible health effects associated with fluoride in drinking water.

### What are EPA's drinking water regulations for fluoride?

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine the level of contaminants in drinking water at which no adverse health effects are likely to occur. These non-enforceable health goals, based solely on possible health risks and exposure over a lifetime with an adequate margin of safety, are called maximum contaminant level goals (MCLG). Contaminants are any physical, chemical, biological or radiological substances or matter in water.

The MCLG for fluoride is 4.0 mg/L or 4.0 ppm. EPA has set this level of protection based on the best available science to prevent potential health problems. EPA has set an enforceable regulation for fluoride, called a maximum contaminant level (MCL), at 4.0 mg/L or 4.0 ppm. MCLs are set as close to the health goals as possible, considering cost, benefits and the ability of public water systems to detect and remove contaminants using suitable treatment technologies. In this case, the MCL equals the MCLG, because analytical methods or treatment technology do not pose any limitation.

EPA has also set a secondary standard (SMCL) for fluoride at 2.0 mg/L or 2.0 ppm. Secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards. Tooth discoloration and/or pitting is caused by excess fluoride exposures during the formative period prior to eruption of the teeth in children. The secondary standard of 2.0 mg/L is intended as a guideline for an upper bound level in areas which have high levels of naturally occurring fluoride. The level of the SMCL was set based upon a balancing of the beneficial effects of protection from tooth decay and the undesirable effects of excessive exposures leading to discoloration.

Fluoride is voluntarily added to some drinking water systems as a public health measure for reducing the incidence of cavities among the treated population. The decision to fluoridate a water supply is made by the State or local municipality, and is not mandated by EPA or any other Federal entity. The Centers for Disease Control and Prevention (CDC) provides recommendations about the optimal levels of fluoride in drinking water in order to prevent tooth decay. Information about CDC's recommendations can be found at: <http://www.cdc.gov/fluoridation/>

States may set more stringent drinking water MCLGs and MCLs for fluoride than EPA.

The drinking water standards are currently under review. The Safe Drinking Water Act requires EPA to periodically review the national primary drinking water regulation for each contaminant and revise the regulation, if appropriate. In 2003 and as part of the first Six Year Review, EPA reviewed the drinking water standard for fluoride and found that new

### Fluoride at a Glance

**Maximum Contaminant Level (MCL)** = 4 milligrams per Liter (mg/L) or 4 parts per million (ppm)

**Maximum Contaminant Level Goal (MCLG)** = 4 mg/L or 4 ppm

#### Health Effects

Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease (including pain and tenderness of the bones); children may get mottled teeth.

[Drinking Water Health Advisories provide more information on health effects](#)

#### Chemical Abstract Service Registry

**Number**  
7681-49-4

#### Sources of Contamination

Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories

[List of all Regulated Contaminants \(PDF\)](#)  
(6 pp, 396K, [About PDF](#))

health and exposure data were available on orally ingested fluoride. EPA requested that the National Research Council (NRC) of the National Academies of Science (NAS) conduct a review of this data and in 2006, the NRC published their evaluation in a report entitled, *Fluoride in Drinking Water: A Scientific Review of EPA's Standards*. The NRC recommended that EPA update its fluoride risk assessment to include new data on health risks and better estimates of total exposure.

In March 2010 and as part of the second [Six Year Review](#), the Agency indicated that the Office of Water was in the process of developing its health and exposure assessments to address the NRC's recommendations. The Agency finalized the [risk and exposure assessments for fluoride](#) in January 2011 and [announced its intent to review the drinking water regulations for fluoride to determine whether revisions are appropriate](#).

#### How does fluoride get into my drinking water?

Some fluoride compounds, such as sodium fluoride and fluorosilicates, dissolve easily into ground water as it moves through gaps and pore spaces between rocks. Most water supplies contain some naturally occurring fluoride. Fluoride also enters drinking water in discharge from fertilizer or aluminum factories. Also, many communities add fluoride to their drinking water to promote dental health.

A federal law called the Emergency Planning and Community Right to Know Act (EPCRA) requires facilities in certain industries, which manufacture, process, or use significant amounts of toxic chemicals, to report annually on their releases of these chemicals. For more information on the uses and releases of chemicals in your state, contact the Community Right-to-Know Hotline: (800) 424-9346.

- [EPA's Toxics Release Inventory \(TRI\) Web site](#) provides information about the types and amounts of toxic chemicals that are released each year to the air, water, and land.

#### How will I know if fluoride is in my drinking water?

When routine monitoring indicates that fluoride levels are above the MCL, your water supplier must take steps to reduce the amount of fluoride so that it is below that level. Water suppliers must notify their customers as soon as practical, but no later than 30 days after the system learns of the violation. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

- [See EPA's public notification requirements for public water systems](#).

If your water comes from a household or private well, check with your health department or local water systems that use ground water for information on contaminants of concern in your area.

- For more information on wells, [go to EPA's Web site on private wells](#).
- [Water Systems Council website](#) [EXIT Disclaimer](#)

#### How will fluoride be removed from my drinking water?

The following treatment method(s) have proven to be effective for removing fluoride to below 4.0 mg/L or 4.0 ppm: distillation or reverse osmosis.

#### How do I learn more about my drinking water?

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect the supply of safe drinking water and upgrade the community water system. Your water bill or telephone book's government listings are a good starting point for local information.

Contact your water utility. EPA requires all community water systems to prepare and deliver an annual consumer confidence report (CCR) (sometimes called a water quality report) for their customers by July 1 of each year. If your water provider is not a community water system, or if you have a private water supply, request a copy from a nearby community water system.

- The CCR summarizes information regarding sources used (i.e., rivers, lakes, reservoirs, or aquifers), detected contaminants, compliance and educational information.
- [Some water suppliers have posted their annual reports on EPA's Web site](#).

#### Other EPA Web sites

- Find an answer or ask a question about drinking water contaminants on [EPA's Question and Answer Web site](#) or call EPA's Safe Drinking Water Hotline at (800) 426-4791
- [Secondary Drinking Water Regulations: Guidance for Nuisance Chemicals](#)

#### Other Federal Departments and Agencies

- [Centers for Disease Control and Prevention, Community Water Fluoridation](#)

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Last updated on Monday, May 21, 2012

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# Portland's fluoride debate: Reviewing both the controversy



(<http://connect.oregonlive.com/user/bschmidt/index.html>) By Brad Schmidt, The Oregonian  
(<http://connect.oregonlive.com/user/bschmidt/posts.html>)

on August 23, 2012 at 7:02 PM, updated February 04, 2013 at 1:49 PM  
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Brent Wojahn/The Oregonian

Dr. Andy Phan works on a crown for Sheyla Mattos of Vancouver in his new practice, TLC Dentistry along Southeast 82nd Avenue. Tooth decay among kids is at the heart of proponents' arguments for fluoridating Portland's water supply.

Few issues at Portland City Hall have been as polarizing as a pending decision to add fluoride to the local water supply.

On one side, there's a **well-organized campaign**

(<http://everyonedeserveshealthyteeth.org/>) in support that features dentists, health care providers and a host of community organizations. On the other is a **group of volunteers** (<http://www.safewateroregon.org/>) launching an **initiative to hold a public vote** ([http://www.oregonlive.com/portland/index.ssf/2012/08/fluoride\\_opponents\\_launch\\_camp.html](http://www.oregonlive.com/portland/index.ssf/2012/08/fluoride_opponents_launch_camp.html)) on fluoride in 2014, in

## Photo of the Day



([http://photos.oregonlive.com/a\\_solitary\\_crow.html](http://photos.oregonlive.com/a_solitary_crow.html))

hopes of banning it.

Both sides claim science and common sense are on their side.

Portland is the **largest city in the country that hasn't taken steps to add fluoride to its drinking water** ([http://www.oregonlive.com/portland/index.ssf/2012/08/new\\_coalition\\_lobbies\\_to\\_fluor.html](http://www.oregonlive.com/portland/index.ssf/2012/08/new_coalition_lobbies_to_fluor.html)), which serves about 900,000 people in Portland, Gresham, Tigard, Tualatin and beyond.

The Portland City Council will hold a public hearing on the issue Sept. 6 before voting Sept. 12. The outcome has been established: Three of the five City Council members -- Mayor Sam Adams and Commissioners Randy Leonard and Nick Fish -- support fluoride.

Here's a review of some of the arguments on both sides:

**IN SUPPORT:**

**Fluoride helps prevent tooth decay.** The national average for untreated decay among third-graders was 29 percent in 2007, **according to a state study** ([http://public.health.oregon.gov/PreventionWellness/oralhealth/Documents/smile\\_2007.pdf](http://public.health.oregon.gov/PreventionWellness/oralhealth/Documents/smile_2007.pdf)). In Oregon, the rate was 35 percent, **fifth-worst in the nation** (<http://apps.nccd.cdc.gov/nohss/IndicatorV.asp?Indicator=3&OrderBy=2>). The rate in the Portland area was 21 percent, but the rate outside the metro area was 44 percent. The state's newest report, issued every five years, won't be available until February.

**Fluoridation is widely accepted in the United States.**

Nearly 277 million people receive water from community water systems and, of those, 74 percent -- or **more than 204 million** (<http://www.cdc.gov/fluoridation/statistics/2010stats.htm>) -- drink fluoridated water. Among all Americans, 66 percent drink fluoridated water.

**Reputable organizations say fluoridation is safe.** The Centers for Disease Control and Prevention named "fluoridation of drinking water" one of the **"10 great public health achievements"** (<http://www.cdc.gov/fluoridation/>) of the 20th century. The American Dental Association reports that studies throughout the past 60 years show that fluoridation is "safe and effective" in preventing dental decay in kids and adults.

**Water fluoridation helps level the playing field between the privileged and the poor.** Low-income Oregon children have tooth decay rates twice as high as those with high incomes, according to **Oregon's 2007 study** ([http://public.health.oregon.gov/PreventionWellness/oralhealth/Documents/smile\\_2007.pdf](http://public.health.oregon.gov/PreventionWellness/oralhealth/Documents/smile_2007.pdf)). The report found that 42 percent of low-income

**More**  
The Oregonian's continuing coverage of the efforts to fluoridate Portland's drinking water. (<http://topics.oregonlive.com/tag/fluoridation/index.html>)

**A solitary crow**  
([http://photos.oregonian.com/2012/08/a\\_solitary\\_crow](http://photos.oregonian.com/2012/08/a_solitary_crow))

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students had untreated tooth decay compared with 20 percent for high-income students. The study did not track specific incomes but instead used free or reduced lunch programs at participating schools as a gauge.

**Fluoridation saves money.** Based on the estimates from the Portland Water Bureau, a fluoridation facility would cost \$5 million, with maintenance and operations of \$575,000 per year. But proponents point to a study that found investing \$1 in fluoride saves \$38 in annual dental costs. Asked for a rough estimate, Water Bureau officials said the average customer would probably pay about \$1 more a year for the fluoride facility and a yet-to-be-determined amount for annual expenses. As for return on investment, **a 2001 study cited by the CDC (<http://www.cdc.gov/fluoridation/pdf/griffin.pdf>)** estimated that, on average, communities larger than 20,000 could spend 50 cents on fluoride per person and receive an estimated net savings of \$18.62 on community dental expenses.

**IN OPPOSITION:**

**There are other options for fighting tooth decay.** Opponents call for better education on diet and dental hygiene and greater access to dental care instead of forcing everyone to live with fluoridated drinking water.

**In high concentrations, fluoride can damage teeth.** The federal government in 2011 **lowered the recommended dosage (<http://www.hhs.gov/news/press/2011pres/01/20110107a.html>)** to 0.7 milligrams of fluoride per liter, down from a range of 0.7 to 1.2 milligrams. After reviewing studies, officials with the U.S. Department of Health & Human Services concluded that the percentage of children with dental fluorosis -- spotting, staining or pitting of teeth -- increased when exposed to higher fluoride concentration in water.

**Some fear that fluoride lowers IQ.** A National Institute of Environmental Health Sciences **study (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3491930/>) ([http://ehp03.niehs.nih.gov/article\\_fetchObjectAttachment.action;jsessionid=58D1896206321DoB69214CD7812760representation=PDF](http://ehp03.niehs.nih.gov/article_fetchObjectAttachment.action;jsessionid=58D1896206321DoB69214CD7812760representation=PDF))**that included a research scientist from Harvard found that "children who lived in areas with high fluoride exposure had lower IQ scores than those who lived in low exposure or control areas." The report reviewed 27 studies on fluoride in China and Iran, finding that children had access to water with fluoride levels up to 11.5 milligrams per liter. In the U.S., the Environmental Protection Agency sets maximum levels at 4 milligrams per liter.

**Fluoridation carries too many unknown risks, critics say.** For one thing, fluorosilicic acid is a "co-product" (<http://www.cdc.gov/fluoridation/engineering/faqs.htm>) of phosphorite associated with the fertilizer industry. Adding an industrial "co-product" to drinking water makes some people nervous. A

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liquid, it is preferred over dry fluoride options and is used by most fluoride programs in the United States, according to the CDC.

**Portlanders aren't getting a say on this latest plan.** The City Council is set to pass a plan, despite three public votes over the years against fluoridation. The political climate has something to do with that: Only one of the five council members faces voters in November: Commissioner Amanda Fritz, who has **expressed support for a citywide vote** ([http://www.oregonlive.com/portland/index.ssf/2012/08/fluoride\\_group\\_secures\\_second.html](http://www.oregonlive.com/portland/index.ssf/2012/08/fluoride_group_secures_second.html)).

-- **Brad Schmidt** (<mailto:bschmidt@oregonian.com>) ; On **Twitter** (<https://blog.advance.net/mt-static/html/@cityhallwatch>)

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**'Healthy Kids, Healthy Portland' political group forms to support fluoride: Portland City Hall roundup**



## City of Portland approves water fluoridation

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by KGW.com Staff

kgw.com

Posted on September 12, 2012 at 8:23 AM

Updated Thursday, Sep 13 at 8:11 AM

PORTLAND -- Amid shouts of protest, the Portland City Council voted unanimously Wednesday, in favor of adding fluoride to drinking water to fight tooth decay.

The chambers were packed for the controversial vote. Some protesters in the crowd started chanting and waving anti-fluoride signs. Others yelled and cursed, and were escorted out of the public meeting.

"We got nothing short of hate emails, and some of what you witnessed here," commissioner Randy Leonard said after the vote. "But in spite of all that I'm proud of every council member, that they considered the science."

### **Related: [Fluoride debate is ideological clash in Portland](#)**

The newly passed ordinance calls for Portland's water to be fluoridated by March 2014 at a projected upfront cost of \$5 million.

Portland is the largest U.S. city without fluoridation. Medical experts say it's a safe and effective way to keep teeth healthy.

Opponents have argued that fluoride is an industrial byproduct that contains arsenic, lead and mercury, which can potentially lead to neurological and other health problems.

"When people understand what is being put in the water," said opponent Kimberly Kaminski, "they understand the lack of public process."

Kaminski said voters should be able to choose whether the water is fluoridated or not, with an initiative or referendum. "I think when they really understand the issue they will vote no," she said.

Wednesday's vote was preceded by several protest rallies in Portland over the past year.

### **More: [Opponents hold anti-fluoride rallies](#)**

Portland Mayor Sam Adams announced his support for the plan long before the council vote. He has said there is a dental "crisis" among Oregon children, compared to neighboring states and cities that use fluoride in their water. He previously explained his stance in-depth, through a letter posted on line.

### **Letter: [Mayor explains support for fluoride](#)**

The mayor and commissioners have also previously cited a Centers for Disease Control 2011 study that attributed \$38 in dental treatment savings for every \$1 spent on fluoridation.

Voters in Portland twice rejected fluoridation before approving it in 1978. But that plan was overturned before any fluoride was ever added to the water.

*(KGW reporter [Collette Wieland](#) contributed to this report via [Twitter](#).)*

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## Fluoride conference reveals fraudulent science behind mass fluoridation; fluoride policy is a public fraud

Learn more: [http://www.naturalnews.com/001807\\_fluoride\\_fluoridation.html#ixzz2MhA4IgKZ](http://www.naturalnews.com/001807_fluoride_fluoridation.html#ixzz2MhA4IgKZ)

August 08, 2004  
by Mike Adams

The First Citizens' Conference on Fluoride was recently held in Canton, New York, and it revealed some astonishing new research about the dangers of fluoride and why the current political position on fluoridation of public water supplies is based on fraudulent science.

The fluoridation of public water is something that has been highly debated for decades -- and yet the practice continues today, despite the growing body of evidence showing that fluoridation causes untold human suffering and disease. Some of the research presented at the conference showed, for example, that fluoridation damages the brain, increases levels of lead in children's blood and therefore leads to behavioral disorders and brain damage. It also showed that humans are accumulating fluoride in their bones, that fluoride's toxicity is systemic in the human body, and that the current safe drinking water standards for fluoride were fraudulently authored by officials at the Environmental Protection Agency who were pressured.

These findings were presented by a variety of scientists and researchers, including a senior EPA scientist and a doctor of the Forsyth Dental Center. Not surprisingly, both of these individuals have been fired and have had their careers jeopardized after participating in this conference.

One of the more interesting bits of evidence presented in the study was an internal memo issued by the EPA professional who wrote the current fluoridation safe drinking water standards. In the memo, the official notes how this new standard would produce "teeth gross enough to gag a maggot." The conference also featured author Christopher Bryson, who wrote the book *The Fluoride Deception*, who said, "Fluoride science is corporate science, fluoride science is DDT science, it's asbestos science, it's tobacco science."

In other words, fluoride science isn't scientific at all -- it's distorted science made up by bureaucrats and political officials who have some other agenda in mind rather than public health. If you're new to this debate on fluoride, you might find some of this information shocking. But I've been covering fluoride for several years, and have fought hard at both the local and national level to educate people about the dangers of fluoridation.

There are so many things wrong with the mass fluoridation of the U.S. population that it's hard to know where to begin talking about it. First off, there's the idea that fluoride is a so-called "naturally occurring substance in water." That's the lie propagated by dentists and the American Dental Association to try to convince people that simply "adjusting the naturally occurring levels" is somehow a good thing to do.

But all of this is based on a distortion. In reality, the fluoride added to the public water supplies in the United States is not organic fluoride at all. It is in fact **fluorosilicic acid**, which is purchased in bulk from chemical companies, who must be laughing loudly at the idea that they can actually sell this **toxic waste product**. Why? Because if cities weren't buying it and putting it into the public water

supply, these industrial companies would have to spend millions of dollars disposing of fluorosilicic acid because it is an EPA regulated toxic waste.

Let me put this another way -- fluorosilicic acid is a toxic waste byproduct that is produced in the United States by various chemical companies. It represents such a health hazard to human beings that it is regulated by the EPA, and must be disposed of as a toxic waste. And yet, municipalities throughout the United States actually purchase this product and then drip it into the public water supply, and simultaneously call it "fluoride."

Fluorosilicic acid is not fluoride, it is something very different, and it strikes me as downright bizarre that it is perfectly legal to dump this toxic waste product into the rivers and streams of America as long as it passes through the bodies of human beings first. In other words, it's illegal to take a bucket of fluorosilicic acid and dump it into a stream, but it is perfectly legal to dump it into the bodies of human beings, whose waste products will subsequently enter those same streams and rivers.

All of this is done under the guise of distorted scientific evidence that claims the mass consumption of fluorosilicic acid somehow improves the dental health of Americans. And yet there is no credible evidence that this is the case. All of the evidence cited by the EPA, the American Dental Association, and dentists has been fraudulently concocted, and quite frankly is decades old.

Across America today, you see the effects of mass fluoridation all around you -- you see children with darkened teeth from fluoridosis, you see elderly people breaking their bones because fluoridation of the water supplies contributes to brittle bones. You see children with behavioral disorders that are multiplied by the effects of lead in their bloodstream, and lead uptake is enhanced in the presence of fluoride in public water.

You also see a great number of neurological disorders in the U.S. population. You see problems with migraine headaches, clinical depression, dementia, and Alzheimer's, and there is a very strong link between these diseases and the long-term consumption of fluoride in the public water supply.

Beyond all of this, there's the important question of why dentists and public health officials think the public water supply is an acceptable medium through which to mass medicate the U.S. population in the first place. It is a forced medication that has no consideration for the nutritional choices made by individuals who might be drinking that water. Some individuals might be using fluoridated toothpaste, and thus if they're drinking fluoridated water, they could easily be getting too much fluoride and suffer from fluoridosis.

The public water supply is a bad place to be putting drugs and medications in an effort to alter the chemistry of the U.S. population. I've even heard some doctors who are excited about the supposed benefits of statin drugs say that we should drip statin drugs into the public water supply the way we do fluoride. They say the benefit is so widespread that everybody should be taking these drugs. It would be ludicrous to suppose that we should mass-medicate the entire U.S. public with statin drugs by dripping them into the public water supply, and yet this is exactly what takes place every day right now with fluoride, which is also a bioactive chemical compound that could reasonably be classified as a drug. Using the public water supply to mass medicate people is bad policy. It's also bad science, and it takes away the freedom of choice from the U.S. population. It is Big Brother at its worst.

One of the other things I find so interesting about this debate on fluoride is that dentists and doctors will leap to defend this practice at every opportunity -- and why? Is it because there's good scientific evidence that fluoridation is somehow beneficial to the public? No, it's because they've been told

to support it by their associations, such as the American Medical Association and the American Dental Association.

In community meetings, I've seen local dentists jump up and down and scream about how important fluoridation is for public health. These people use their apparent authority to try to convince everyone that they should be mass medicated with this substance. I find this especially bizarre because many of these dentists and doctors promote this as a nutritional prevention strategy -- they're talking about fluoride as being essential nutrition for the human body, and therefore we should put it into the water supply. And yet, if you mention that the most common nutritional deficiencies are in fact magnesium, zinc, vitamin D, and the B vitamins, they will look at you as if you are speaking some kind of alien tongue. Apparently in their minds, there is only one nutritional deficiency that exists in the world, and that is a fluoride deficiency. All other nutritional deficiencies are called quackery, and the idea of dripping zinc into the public water supply would be called absurd by these doctors and dentists. And yet they are more than happy to drip a toxic waste byproduct into the water supply, as long as it is called a nutritional deficiency that needs to be overcome through the forced mass medication of the entire population.

All of this is so bizarre that a reasonable person can only conclude these doctors and dentists are operating on auto-pilot. They are parroting whatever their organizing associations are telling them to say. They've been sucked into the myth that fluoride is automatically good for everyone and that every person in the country should be dosed with this bioactive chemical compound.

And to top it off, they are extremely arrogant about the whole thing. They act like because they are dentists, they are qualified to talk about this one single nutritional deficiency and its effects on the entire human body. In fact, dentists have no qualifications to talk about the effects of fluoride on the human nervous system, the blood supply, behavioral disorders or other physiological effects. Dentists are really only qualified to talk about what's happening with your teeth -- not drugs or chemicals that you ingest and that have a systemic effect.

At the same time, most western doctors aren't qualified to talk about nutrition, either. They've had almost no nutritional training in their medical schools, and simply remain illiterate about the relationships between nutritional deficiencies and chronic disease. So, you essentially have a whole group of experts that know nothing about the subject they are talking about, but yet who grandstand and claim to be the authorities on it and pound the public into the mistaken belief that people should be dosed with this toxic waste product regardless of the scientific facts.

This is essentially a mass experiment now being conducted on the American population, and I think we are seeing some the effects of this in the worsening health statistics in this country. Fluoride is also thought to suppress intelligence and independent will, which may explain some of the reasons why the U.S. population is so easy to control through propaganda and media manipulation. In fact, there is some interesting research going way back about fluoride being used on wartime prisoners as a truth serum in an effort to get them to go along with the capturing nation's propaganda. So, in an almost comic sense, the mass medication of the U.S. population with fluoride could, in a very real sense, be turning our country into a nation of mindless zombies. Of course, that's an exaggeration of what's probably really happening, but no doubt it has some influence.

Now what does all of this mean for you, as consumer? What should you do to protect yourself from fluoride? First off, you should never use products that contain fluoride. That is, don't use toothpaste or mouthwashes that contain fluoride. Also, don't purchase bottled water that has added fluoride in it. I think that's a ridiculous product to have on the shelves.

Don't drink from the public water supply. One of the simplest and most important things you can do to protect your health and the health of your family is to get yourself a faucet-mounted water filter such

as a Britta filter or a PUR filter that uses carbon-block filtration to remove fluoride, chlorine, and other water contaminants. Better yet, drink water that is filtered through reverse osmosis or is distilled.

Best of all, if you can afford it, drink spring water as your primary source of water. And don't fall for the propaganda that says we should be mass medicating our entire population with a toxic waste product called "fluoride." It's based on bad science, the egos of misinformed medical authorities, and political power grabs that have nothing whatsoever to do with protecting the public health.

## **You're Still Told Fluoridation Prevents Tooth Decay, but Science Proves Otherwise**

**By Dr. Mercola**

Despite widespread public health adoption, water fluoridation has come under close scrutiny over the past quarter century. Time has stripped away fluoridation's rosy glow. Once touted as *the* magic solution to dental caries, fluoride's benefit for your teeth – IF there is any, which is still debatable – comes with overshadowing downsides.

No matter which scientific studies you examine, or which population trends you view, the only rational conclusion is that fluoride's health dangers far outweigh the marginal dental benefits it *might* offer. The science is very clear about the following:

Fluoride is a toxic industrial waste product that is a poison to your body and in no way a "nutrient," offering no benefits at all to the human body. The fluoride added to water supplies can be contaminated with lead, arsenic, radionucleotides, aluminum and other industrial contaminants. Additionally, the fluoride added to municipal water supplies is not pharmaceutical grade.

Fluoride exposure comes from tap water, most toothpaste and many antibiotics, including ones given to farm animals. There is a large variation in exposure levels, making it impossible to accurately predict these variables for any person, family or community.

Fluoride exposure for many can easily reach toxic levels. For example, poison control should be called if you swallow a quarter milligram of fluoride from toothpaste. Meanwhile just ONE glass of water can contain this amount of fluoride.

Fluoride is a cumulative poison that has been proven to cause wide-ranging, serious health problems, such as damage to your bones, brain and endocrine system. Dental caries can be prevented with means other than fluoridation, thereby avoiding the adverse effects of fluoride.

### **Fluoride is Found in More than Just Your Drinking Water**

Fluoride is found in all natural waters to some degree. It can be extremely high in groundwater, depending on a number of factors, such as the types of rocks and minerals of that region. Drinking water is the largest fluoride source, adding to your exposure from dental products. But you may not be aware that fluoride is also present in some surprising places:

A variety of vegetables and fruits, grains, taro, yams, cassava, meat, poultry and fish (especially canned fish), milk and tea; most natural foods have only minor levels of fluoride, but there are a few exceptions. Tea leaves, for example, tend to concentrate fluoride from the soil; deboned meat and poultry can be very high in fluoride due to contamination from bone particles during processing. Processed foods and beverages such as sodas, juices, sports drinks, baby foods, etc., are often high in fluoride.

Air can be tainted with fluoride, particularly in areas with greater industrial pollution from coal burning and phosphate fertilizer production; fluoride exposure can also be a problem after volcanic eruptions, as was discovered in southern Iceland.

Pesticides and cryolite, a fluoride-containing mineral used as a pesticide on dozens of food products in the U.S.

Non-stick pans emit a fluoride gas when heated.

## **Summary of Fluoride's Potential Health Hazards**

It's important to realize that fluoride is a cumulative toxin, which over time can lead to more serious health concerns than dental fluorosis (spotting on your teeth). Skeletal fluorosis from fluoride toxicity can be crippling and even deadly. The neurological effects are also quite disturbing. There are now 25 studies showing fluoride is associated with diminished IQ, even at levels as low as 0.3 to 3 parts per million, which overlaps the range in many American communities (0.7 to 1.2 ppm). Studies have shown fluoride toxicity can lead to the wide-ranging problems listed below:

Increases lead absorption

Disrupts collagen synthesis

Hyperactivity and/or lethargy

Crippling skeletal fluorosis and bonefractures

Genetic damage and cell death

Increased tumor and cancer growth

Disrupts immune system

Inhibits antibody production

Brain damage, and lowered IQ

Dementia

Arthritis

Severe eye problems, including blindness

Impaired thyroid function

Bone cancer (osteosarcoma)

Inactivates 62 enzymes

Muscle disorders

## **Causes of Dental Caries**

Dental caries are caused by demineralization of your teeth (enamel and dentin) by the acids formed during the bacterial fermentation of dietary sugars. Demineralization is countered by the deposit of minerals from your saliva, or remineralization, which is a slow process. Enthusiasts report that fluoride prevents dental caries by enhancing mineralization.

However, dental caries are not caused by a lack of fluoride, just as depression is not caused by a lack of Prozac. Some of the primary causes of tooth decay cited in the literature include:

Consistent use of refined sugar, sugary soft drinks, and processed foods in general

Children going to bed with a bottle of sweetened drink in their mouth, or sucking at will from such a bottle during the day

Poor dental hygiene and poor access to and utilization of dental health services, usually related to socioeconomic status

Mineral deficiencies, like magnesium, which can weaken bones and teeth

More than 600 medications promote tooth decay by inhibiting saliva

By far, excess dietary sugar is the most significant factor. The World Health Organization (WHO) and most dental experts agree upon this fact. The evidence for dental caries being a function of social class is weak, at best. The massive consumption of sugar in the Western diet, particularly fructose in high fructose corn syrup, fuels the fire of tooth decay.

## **Does Fluoride Help Prevent Tooth Decay?**

Fluoride advocates often claim that the reduction in tooth decay that's occurred since the 1950s is a benefit of fluoridated water, but the facts just don't add up. For example, in 1999 the CDC claimed that dental caries declined precipitously during the second half of the 20th Century. But what they failed to mention is that tooth decay rates "precipitously declined" in ALL Western nations, regardless of whether or not fluoridation was used – and most of those countries did NOT fluoridate!

The American Dental Association (ADA) has helped the CDC in trying to pull the wool over your eyes. For years, the ADA has warned that if you stop fluoridating your water, your rates of tooth decay will increase. Indeed, if fluoride were effective in preventing caries, you would expect to see an increase in tooth decay when fluoridation is stopped. Yet, this is NOT what we see!

This makes it rather ridiculous to argue that water fluoridation is having any sort of health benefit. The science should be as obvious to these government agencies as it is to us, yet they continue to deny and misrepresent the truth, under the pressure of powerful lobbyists holding the purse strings for the "fluoride industry." When we examine the trend of dental caries over time, comparing those who are fluoridated to those who are not, it's easy to understand why so many people are now against fluoridation – including me. I have long advocated against the use of fluoride, as I believe there are far better – SAFER ways to improve your family's dental health.

## **Scientific Studies You Can't Ignore**

**The following demographic studies and fluoridation trends make it clear that fluoridation has very little to do with whether or not you develop cavities.**

In Japan, fluoridation has been virtually nonexistent since the 1970s, yet rates of dental caries have declined since that time – in spite of their increased sugar consumption.

In the town of Tiel in the Netherlands, water fluoridation was discontinued in 1973, and by 1993, rates of dental caries had declined.

In the town of Kuopio, Finland, water fluoridation was stopped after 1992. In 1995 and 1998, dental caries had either decreased or stayed the same.

In two towns in former East Germany, a significant fall in the prevalence of dental caries was seen in the twenty years following cessation of water fluoridation.

In Cuba, water fluoridation was discontinued in 1990, and in March of 1997, dental caries had significantly trended downward.

In Canada, "the prevalence of caries decreased over time in the fluoridation-ended community while remaining unchanged in the fluoridated community."

## **Excessive Fluoride Negates Any Potential Benefit**

Bill Osmunson is a full-time dentist with a Masters Degree in Public Health. According to Dr. Osmunson, some studies suggest, when viewed in isolation, that fluoride may offer a minor benefit to your teeth. However, when you factor in the excessive amounts of fluoride we're ingesting from multiple sources, any small benefit is lost under the weight of fluoride's toxic effects.

Remember, *fluoride is a cumulative poison.*

When authorities try to determine the safety and efficacy of fluoride in drinking water, they calculate estimated water consumption based on a location's average temperature, humidity, geology, and the "average" health status of the people living there – all factors that are so highly variable that any effort to estimate them are little more than a wild guess. How can a decision about "dosing" fluoride in your water be even remotely scientific. Dr. Osmunson explains:

*"Is it appropriate to put in a substance into water, where some people may drink less than a liter a day and others drink up to 19 liters a day? That's a huge difference in the dosage amount of fluoride that they are getting. And what about the other sources?"*

*"Once fluoride became accepted as wonderful, we started putting it in toothpaste and of course there are the pesticides, the cryolite, and the post-harvest fumigants. And then there are the dental fillings, the dental topical treatment, the fluoride varnishes in the medical products, and the Teflon pans... I started to look at how much we are getting. We're getting much more – two to three times more than when they started fluoridation."*

Early on, there were some convincing studies showing fluoride made teeth harder and more able to withstand acids. However, when Dr. Osmunson delved deeper into the literature, he found that the evidence supporting fluoride really wasn't as strong as it first seemed, and fluoride didn't appear to reduce tooth decay to any significant degree. In fact, there's even substantial evidence that populations with *less* fluoride have less decay. If you would like to hear more from Dr. Osmunson, I invite you to watch our 2011 interview on this topic.