

Community Water Fluoridation In Iowa: The Who, What, and Where

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Outline

- ▶ What
 - ▶ Tooth Decay
 - ▶ Fluoride
 - ▶ Community Water Fluoridation (CWF)?
- ▶ Who
 - ▶ Who's in control of CWF in Iowa?
 - ▶ How is IDPH Involved?
 - ▶ Funding
- ▶ Where
 - ▶ Iowa Data
 - ▶ Facts about Fluoridation
 - ▶ Future Goals



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Video

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Healthy People 2020 Healthy Iowans 2021

- | | |
|--|--|
| <ul style="list-style-type: none"> ▶ Objective Oral Health 7 <ul style="list-style-type: none"> ▶ Increase the proportion of the U.S. population served by community water systems with optimally fluoridated water ▶ 79.6% ▶ 74.4% | <ul style="list-style-type: none"> ▶ Objective 13 <ul style="list-style-type: none"> ▶ Increase the % of Iowans that have access to optimally fluoridated water ▶ 94% ▶ 90.18% vs 63.7% |
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What is Tooth Decay?

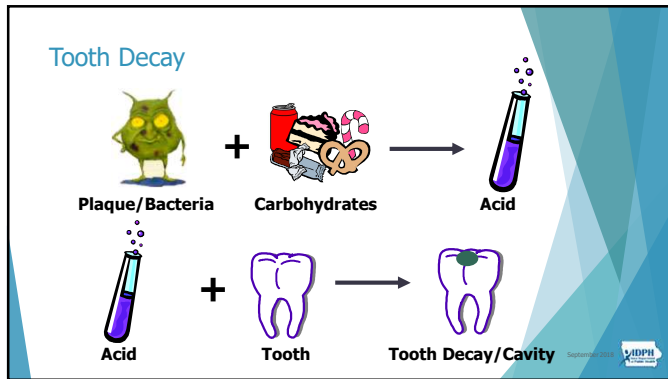
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Tooth Decay

- ▶ Three things must be present
 - ▶ Tooth
 - ▶ Carbohydrate
 - ▶ Bacteria



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Why Does It Matter?

- ▶ Tooth decay is the most common chronic, preventable disease among children.
 - ▶ 2016-2017 – 52.6% of children had a history of decay
- ▶ Over 51 million school hours are lost each year because of tooth pain.

Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC322359/>

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Why Does It Matter?

- ▶ Tooth decay is the most common chronic disease among older adults.
- ▶ 9 out of 10 older adults who still have teeth have cavities.
 - ▶ 2016 – 12.45% of 60+ year olds had all teeth extracted

Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3772383/>

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What is Fluoride?

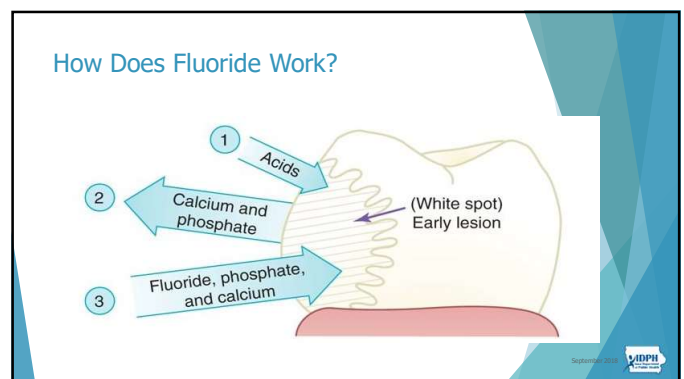
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Fluoride

- ▶ Compound of fluorine
- ▶ Natural
- ▶ 13th most abundant element in Earth's crust

The periodic table shows elements arranged by atomic number. Fluorine (F) is located in the top right corner, highlighted with a red arrow. The table includes element symbols, names, and atomic numbers.

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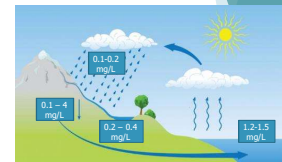


What is Community Water Fluoridation (CWF)?

Community Water Fluoridation (CWF)

- ▶ The adjustment (up or down) of natural fluoride levels to 0.7 mg/L
- ▶ Effective, Safe, and Cost Effective

CDC named CWF as one of the 10 greatest public health achievements of the 20th century.



CWF Levels



Fluoride Level	Description
Less than 0.6 mg/L	Below Recommended Fluoride Level
0.6 mg/L or more	Sufficient Natural Fluoride Level
0.7 mg/L	Recommended Optimal Level for Fluoridating Water Systems
2.0 mg/L	Secondary Maximum Contaminant Level/Notification Required
4.0 mg/L	Maximum Contaminant Level

History of Water Fluoridation

- 1900's
 - ▶ Brown stains on teeth = no decay
- 1930's
 - ▶ High levels of fluoride = no decay
 - ▶ Multiple studies investigated the appropriate level of fluoride needed



History of Water Fluoridation Continued

- ▶ 1945: Grand Rapids, MI
- ▶ 1956: Study results published
- ▶ 1962: U.S. Public Health Service sets 1st fluoride recommendation
- ▶ 2011: 2nd fluoride recommendation



Who Controls CWF in Iowa?

CWF In Iowa

DNR

- ▶ Regulatory agency that gives permits for water fluoridation
- ▶ Strictly interested in fluoride levels over 2 and 4 mg/L



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- ▶ Monitors and Educates
 - ▶ Bureau of Environmental Health Services
 - ▶ Bureau of Oral and Health Delivery Systems



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Who Funds CWF?

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Funding Opportunities



Community Fluoridation Award Application Questions

- ▶ Delta Dental of Iowa Foundation
 - ▶ \$25,000+
 - ▶ New Systems or Updates

Name of Community:

Contact Information:

Population served by local water system (total $\%$, % children):

Briefly describe current water system (sources, treatment process, facilities, etc.):

Describe why fluoridation award is most needed in your community:

Briefly describe community's five-year commitment to fluoridation (address sustainability):

Required attachments:

- 1.) Letter of support from Mayor, City Council or other local government representative.
- 2.) Most recent water sample analysis.
- 3.) Approved DNR Permit
- 4.) Project budget

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Where is CWF Happening in Iowa?

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Current Data

- ▶ 90.18% of Iowans have access to fluoridated water ~ 2.5 million people
 - ▶ 63.7% is optimally fluoridated (0.6-1.2 mg/L)
- ▶ What does Optimally Fluoridation Mean?
 - ▶ Stay within 0.6-1.2 mg/L daily
 - ▶ Test fluoride levels daily

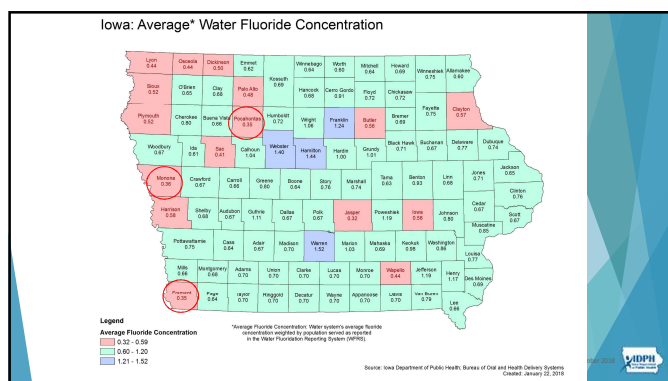
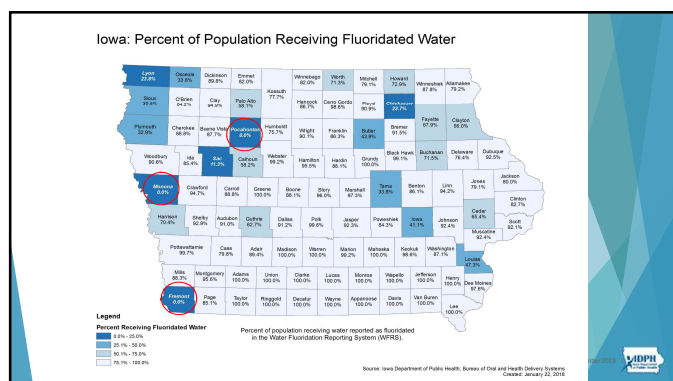
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Current Data Continued

Community Water Systems in Iowa Identified as
Fluoridated and Non-Fluoridated

	Number of Systems	Population
All Water Systems	1,098	2,812,808
Fluoridated		
Adjusted	151	1,608,909
Natural	210	380,004
Defluoridated	1	1,692
Consecutive	197	422,674
Multi-Source	10	129,185
Total	569	2,542,464
Non-Fluoridated		
Non-Adjusted	479	260,008
Consecutive	39	16,500
Total	529	276,508

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Water with fluoride protects teeth from tooth decay

It is important to know the level of fluoride in your drinking water. My Water's Fluoride (MWF) allows consumers to learn about the fluoride level in their drinking water. Also, you can find out the number of people served by the system and the water source. Learn more!

Find Water System Information

Participating State:

Can't find your state?

My Water's Fluoride

https://ncdd.cdc.gov/DOH_MWF

Participating Non-participating

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Annual CDC Water Fluoridation Quality Awards

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How a System Gets a CDC Fluoridation Award

- ▶ Average monthly fluoride level (0.6-1.2 mg/L)
- ▶ Daily fluoride testing (DNR required)
- ▶ Submitting MOR to IDPH
- ▶ Record at least 75% of daily fluoride samples between 0.6-1.2 mg/L
 - ▶ 31 days: ≥24 days in range
 - ▶ 30 days: ≥23 days in range
 - ▶ 28 days: ≥21 days in range

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105!

Albert City	Denison	Guthrie	Leon	Orange City	Sloan
Algona	Des Moines	Hampton	Madrid	Osage	Solon
Allison	Dexter	Harlan	Malvern	Oswego	Spencer
Audubon	Dubuque	Hartley	Manilla	Oskaloosa	Spirit Lake
Bancroft	Durant	Hiawatha	Manly	Ottumwa	Stanton
Bellevue	Eagle Grove	Huxley	Manning	Paulina	Terrill
Bennett	Eddyville	Ida Grove	Marshalltown	Pella	Tipton
Boone	Eldridge	Iowa American Water Company (Clinton and Davenport)	Mason City	Perry	University of Iowa
Britt	Elk Horn	Iowa City	Milford	Postville	Ventura
Burlington	Emmetsburg	Iowa Falls	Minden	Rathbun	Wapello
Carroll	Estherville	Iowa Lakes	Missouri Valley	Regional	Waterloo
Cedar Falls	Forest City	Jefferson	Mitchellville	Rock Valley	Waukon
Clarion	Fort Madison	Kalona	Monona	Schaller	Waverly
Council Bluffs	Garner	Kanawha	Montezuma	Scranton	West Central Iowa Rural Water Association (Boyer and Nishnabotna)
Cresco	Glenwood	Keokuk	Nevada	Shelby	Wilton
Creston	Glidden	Lake Mills	Newton	Sibley	Winterset
Decorah	Griswold	Lamoni	Northwood	Sioux City	

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Facts About Fluoridation Questions & Answers

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- Question -

If we use fluoridated toothpaste, do we still need fluoridated water?



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Yes! Even with the availability of other fluoride containing products, fluoridated water prevents up to 25% of tooth decay for all.



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- Question -

Are there any negative health effects with fluoridated water?



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The Weight of Science



life is better
WITH TEETH

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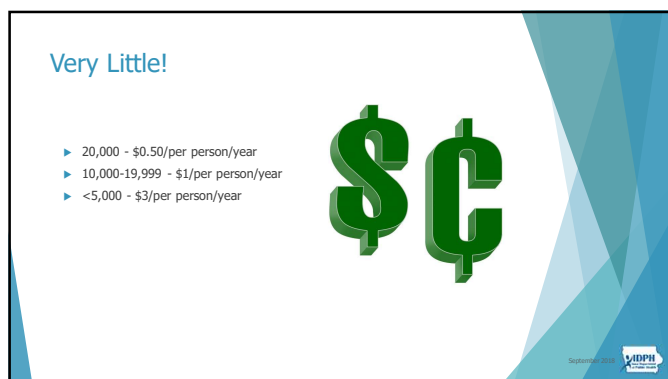
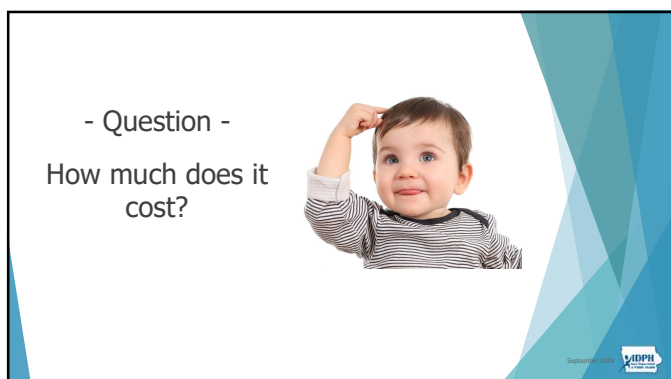
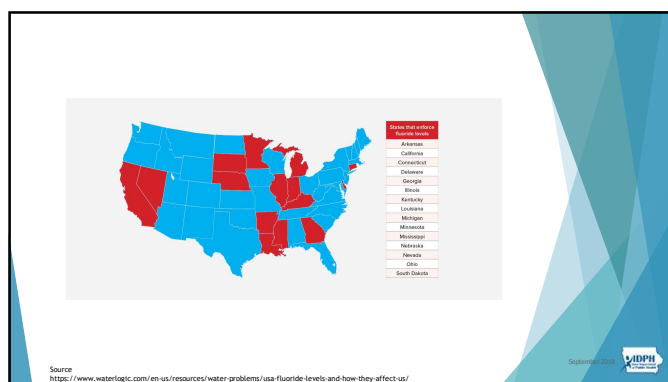
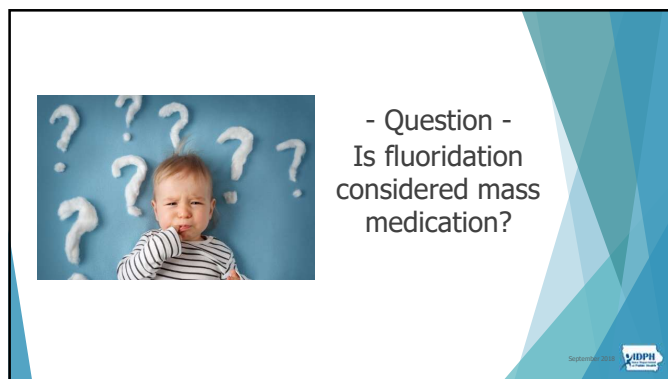
- Question -

What is dental fluorosis?



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- Question -
Does bottled water
have fluoride?

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Depends on the Source

Fluoride Added		No Additional Fluoride Added	
Maximum daily air temperatures (deg. F)	Fluoride concentration (mg/L)	Maximum daily air temperatures (deg. F)	Fluoride concentration (mg/L)
53.7 and below	1.7	53.7 and below	2.4
53.8-58.3	1.5	53.8-58.3	2.2
58.4-63.8	1.3	58.4-63.8	2.0
63.9-70.6	1.2	63.9-70.6	1.8
70.7-79.2	1.0	70.7-79.2	1.6
79.3-90.5	0.8	79.3-90.5	1.4

bottledwater.org/fluoride

Source: <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfdr/cfsearch.cfm?r=145,110>

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- Statement -

Fluoride is from
fertilizer and I don't
want that in my
water



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Fluoridation Chemicals

- ▶ Phosphorite Rock (Apatite)
 - ▶ Sodium Fluoride
 - ▶ Sodium Fluorosilicate
 - ▶ Fluorosilicic Acid



NSF International

American Water Works Association

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- Question -

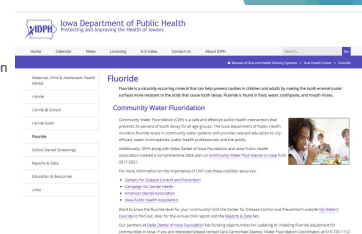
What are credible
sources for more
information?



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Sources

- ▶ Centers for Disease Control and Prevention
 - ▶ www.cdc.gov/fluoridation
- ▶ American Academy of Pediatrics
 - ▶ ilikemyteeth.org
- ▶ American Dental Association
 - ▶ www.ada.org



<https://idph.iowa.gov/ohds/oral-health-center/fluoride>

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Future Goals for CWF In Iowa

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Future Goals

- ▶ More access to 'optimally' fluoridated water
- ▶ More education (and marketing)
 - ▶ Tap water is safe
 - ▶ Fluoride is effective
- ▶ More robust partnerships
 - ▶ Dental community
 - ▶ Water community
 - ▶ Non-Profit/Private industry
 - ▶ Environmental organizations



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Summary

- ▶ Natural, safe, and effective
- ▶ Helps those most in need
- ▶ No adverse health effects
- ▶ Recommended by reputable private, non-profit, govt organizations
- ▶ More work to do

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Thank you!

Questions?

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Fluoride Dosing

Fluoride Source	Amount
Water Fluoridation	0.7 ppm
Mouth rinse (daily)	227 ppm
Mouth rinse (weekly)	900 ppm
Toothpaste	1,000-1,100 ppm
Varnish	22,500 ppm



Source:
http://www.aapd.org/media/policies_guidelines/g_fluoridetherapy.pdf

Fluoride: Small Solution. Big Benefits.

The U.S. Department of Health and Human Services announced a recommendation that community water systems adjust the amount of fluoride to 0.7 mg/L to achieve an optimal fluoride level to help prevent tooth decay.

Just how much is 0.7 milligrams per liter of water? It's like ...



What difference does a little fluoride make? The public health benefits are big. Before water fluoridation children had about 3 times as many cavities.

For more information, visit ADA.org/fluoride.

ADA American Dental Association®

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No Additional Fluoride Added

Maximum daily air temperatures (deg. F)	Fluoride concentration (mg/L)
53.7 and below	2.4
53.8-58.3	2.2
58.4-63.8	2.0
63.9-70.6	1.8
70.7-79.2	1.6
79.3-90.5	1.4

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