



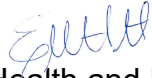
STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
AND
DEPARTMENT OF HEALTH AND HUMAN SERVICES


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TO: Michigan Community Water Supplies

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DATE: March 20, 2025

SUBJECT: Fluoridation of Public Drinking Water

The purpose of this memorandum is to provide clarification on the status of drinking water fluoridation in the state of Michigan and to assist water supplies with fluoride-related communication in your communities. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) and the Michigan Department of Health and Human Services (MDHHS) continue to support the practice of fluoridating public drinking water for the purpose of promoting oral health. **No adverse health effects have been associated with consuming water fluoridated at levels currently recommended; and fluoridation benefits everyone in the community, including seniors, adults, and children.** EGLE and the MDHHS are committed to acting on current facts and relying on the expertise of public health organizations and agencies that look at the complete body of evidence, including peer-reviewed systematic studies, to develop national recommendations.

Background

Michigan led the world with the first city to fluoridate drinking water (Grand Rapids in 1945). After seeing the compelling evidence of fluoridation effectiveness in Grand Rapids, many other Michigan and American communities chose to fluoridate. Estimates as recent as 2022 indicate that nearly three out of four Americans served by public

water supplies have access to fluoridated water.¹ Studies conducted in a cross section of states have concluded that for each dollar communities spend on fluoridation, many times that amount is saved in dental treatment.²

Fluoride Basics

Fluoride is an ion of fluorine, which is an element on the Periodic Table, and is found naturally and abundantly in the Earth's crust. Lakes, rivers, oceans, and groundwater contain natural levels of fluoride. The concentration determined by the U.S. Public Health Service that maximizes fluoride's oral health benefits while minimizing potential harm is 0.7 milligrams/Liter (mg/L). Naturally occurring fluoride in groundwater or surface water can be less than, equal to, or greater than the optimal concentration. The practice of drinking water fluoridation consists of adjusting the naturally occurring concentration to optimal levels.

A fundamental principle of toxicology is, "The dose makes the poison." Like various essential minerals, fluoride is toxic at **high** concentrations. Copper, magnesium, manganese, selenium, and zinc are examples of other elements that are beneficial for humans at certain concentrations, but harmful at higher levels. Fluoride is one of several examples of common products fortified to improve human health — iodine is added to table salt, folic acid is added to breads and cereals, and Vitamin D is added to milk. Fluoride is also naturally present in some foods, including black tea, coffee, shellfish, raisins, and potatoes.³ In Europe and Australia, fluoride is added to salt, milk, and/or drinking water to promote oral health.⁴ Fluoridation of public drinking water systems maintains fluoride concentrations at *optimal* levels.

Role of Local and State Agencies

Fluoride is an acute toxin at concentrations multiple times higher than that in fluoridated water and the U.S. Environmental Protection Agency has set the Maximum Contaminant Level (MCL) at 4.0 mg/L. Therefore, State agencies and water utilities share a responsibility to implement water fluoridation safely. Because of the diligence of this partnership, **Michigan has 100 percent compliance with the fluoride MCL in the last ten years.**

¹ <https://www.cdc.gov/fluoridation/about/statement-on-the-evidence-supporting-the-safety-and-effectiveness-of-community-water-fluoridation.html>

² <https://ilikemyteeth.org/debate-fluoridation/effects-of-fluoride/>

³ <https://nutritionsource.hsph.harvard.edu/fluoride/>

⁴ <https://www.pewtrusts.org/en/research-and-analysis/articles/2011/11/11/water-fluoridation-frequently-asked-questions>

Following is a summary of the roles of various parties:

Community Water Supplies

Local water utilities make up the front lines of drinking water operations, monitoring, and emergency response. Water treatment plant operators perform several measurements, calculations, and analysis to ensure that fluoride concentrations remain near the optimal dose and below the MCL. Drinking water operators use this information to make fluoride feed rate adjustments and report the measurements and analysis results to the State to ensure compliance. Furthermore, community water supplies report directly to their customers each year in their Consumer Confidence Report, which includes the highest concentration of fluoride detected during the year. All of these duties are required to be done under the oversight of a State-certified operator in charge.

EGLE

If a Michigan community chooses to fluoridate, EGLE's Drinking Water and Environmental Health Division (DWEHD) staff works with them to provide healthy and consistent fluoridation in two main ways. First, through the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), construction permitting program, EGLE engineers ensure that fluoridation equipment in community water supplies is designed to meet stringent design standards used across the region and country. Through the permit review process, EGLE engineers verify that feed equipment is properly sized, that anti-siphon controls are in place, and that feed pumps include electrical interlocks to prevent accidental overfeeds. Second, EGLE provides oversight through our water system surveillance activities. For example, EGLE engineers review operation reports of all fluoridating water supplies each month to verify concentrations are at optimal levels. Furthermore, comprehensive sanitary surveys are conducted periodically to assess the condition, operation, and performance of the fluoridation feed equipment and monitoring systems. Any problems identified during the survey are documented, and the community must correct them to stay in compliance. Lastly, EGLE ensures that each fluoride additive being used across the state is a third-party certified product suitable for addition to drinking water. Act 399 requires that all drinking water additives meet the stringent standards of NSF/ANSI Standard 60.⁵

MDHHS

The MDHHS's Oral Health Program (OHP) analyzes fluoride levels in community water supplies by working with local water operators and provides relevant education and technical assistance to local officials, drinking water supplies, public health professionals, and the public. The OHP conducts yearly continuing education training for operators required for certification. The OHP works closely with the Centers for Disease Control and Prevention (CDC) for data tracking through the

⁵ <https://www.nsf.org/consumer-resources/articles/fluoridation-products-guide>

Water Fluoridation Reporting System. They also secure funding for and develop grants for water systems to replace aging fluoridation equipment.

Legal Considerations

To prevent unilaterally undoing a resolution of the local governing body or a referendum of the people, which could negatively impact residents, most city, village, and township charters have rules related to water fluoridation decision-making. Local decision-makers may want to check with their legal counsel to ensure any proposed decision conforms to the local charter. Local anti-fluoride movements can be vocal and persistent, but do not necessarily represent the viewpoints of the greater community. For instance, water fluoridation is especially important for people living at or below the poverty level who cannot afford regular access to dental care and for people who have challenges in providing their own basic dental care, such as some disabled or elderly people. Discussion related to fluoridation should be done transparently with input from a cross section of community members and local public health professionals.

Fluoridation is most beneficial when it is implemented *consistently*. However, if there is a prolonged interruption in fluoridation, it is imperative for the water supply to notify the public so residents can make informed decisions about their oral health. Local pediatricians and dentists make prescription and treatment decisions based on their understanding of the water supply fluoride levels.

Contact Information

- Contact the Oral Health Program at Oralhealth@Michigan.gov for general questions related to fluoride and oral health.
- Contact DWEHD's Mike Bolf (906-630-4107 or BolfM@Michigan.gov) for general questions about the design, operation, or regulations related to water system fluoridation.
- Contact your [EGLE district engineer](#) for questions about your specific water system.

For more information, please visit the following websites:

[Campaign for Dental Health – Fluoride Myths & Facts](#)

[Campaign for Dental Health – Helpful Information for Water Operators](#)

[Pew Charitable Trusts – Water Fluoridation Frequently Asked Questions](#)

[CDC – Community Water Fluoridation](#)

[State of Michigan MDHHS – Community Water Fluoridation](#)

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[State of Michigan EGLE – Fluoridation Information](#)

[American Water Works Association – Fluoridation of Public Water Supplies](#)

[American Academy of Pediatrics – Fluoridation](#)

[American Cancer Society – Water Fluoridation and Cancer Risk](#)

[American Public Health Association – Community Water Fluoridation in the United States](#)

[National Institutes of Health – Fluoride](#)

[Australia National Health and Medical Research Council – Water Fluoridation and Human Health in Australia: Questions and Answers](#)

[Center for Oral Health – Water Fluoridation: Facts vs. Fears](#)