

Gates County Water Fluoride Levels

September 2024

Target Audience: Gates County Commissioners and ARHS Board of Health

What is Fluoride?

- What is Fluoride?
 - Fluoride is a form of fluorine, a natural element. In the environment, fluoride is found as salts bound to sodium or calcium. It is found in rocks deep underground and in all natural waters.
 - Levels of naturally occurring fluoride vary with some areas naturally having more fluoride than others.
- Fluoride and Your Health
 - **Fluoride is often added to public water supplies to reduce tooth decay.** While it is not an essential element that your body needs, at low levels it can prevent tooth decay.
 - **Drinking high levels of fluoride can lead to tooth discoloration.**
 - Long term exposure to high levels of fluoride can cause gastrointestinal issues and brittle bones.

Current Guidelines and History of Testing

- **Gates County has been compliant with all testing and reporting requirements that are currently in place.**
- Currently, public water systems are required to test and report fluoride levels every three years.
 - The last sample for Gates County was conducted in November 2023 and was found to be 2.9 mg/L
- If the sample is greater than 4 mg/L it exceeds federal standards set by the EPA and would require treatment.
- If the sample is greater than 2 mg/L, the county is required to watch and provide notice every year to the public.
- The mandatory language in the notice is as follows:
 - This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/l) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system [name] has a fluoride concentration of [insert value] mg/l.
Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You

may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water. Drinking water containing more than 4 mg/L of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/l of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/l because of this cosmetic dental problem.

For more information, please call [name of water system contact] of [name of community water system] at [phone number]. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP.”

What about private wells?

- Residents who use private wells should follow the same guidelines as the public water systems, however they would be responsible for working with a private well company or lab for testing of the drinking water.
- Additional information : <https://epi.dph.ncdhhs.gov/oeo/docs/FluorideAndPrivateWells.pdf>
- The Gates County Health Department with Albemarle Regional Health Services offers well testing on new well systems at time of installation. The health department does not offer ongoing private well testing for existing systems.
- Testing for existing well systems is referred to service provider in the community. Private well testing contact:
 - **JLA International**
145 Peanut Drive, Edenton, NC 27932
252-482-4456
(Fax) 252-482-5370

What has changed? Is there new information?

- **The official guidelines on water testing and fluoride levels have not changed.**
- A report by the National Toxicity Program (NTP) was released on August 21, 2024.
 - The study was entitled "Fluoride Exposure: Neurodevelopment and Cognition”
 - The study concluded that higher levels of fluoride exposure, such as drinking water containing more than 1.5 mg/L, are associated with lower IQ in children.
 - **Please note this study states ASSOCIATED – not causal.**
 - <https://ntp.niehs.nih.gov/whatwestudy/assessments/noncancer/completed/fluoride>
- NPR ran a segment on the report on August 23, 2024: <https://www.npr.org/2024/08/23/nx-s1-5086886/fluoride-and-iq>

What is Gates County doing?

- Gates County began working with Albemarle Regional Health Services (ARHS) and the Gates County Health Department to better understand the information that has been released.
- ARHS and Gates County conducted a call with NC Division of Public Health Leadership on Monday, September 9, 2024. State NCDPH Representatives included:
 - Dr. Betsey Tilson, State Health Director and Chief Medical Officer
 - Dr. Kelly Kimple, Acting Director, Division of Public Health
 - Dr. Zack Moore, Epi Section Chief
 - Stacie Turpin Saunders, MPH – Deputy Director, Section Chief, Local and Community Support
 - Dr. Virginia Guidry - Branch Head, Occupational and Environmental Epidemiology
 - Kennedy Holt, MSPH – Environmental Toxicologist
- **While the official guidelines have not changed, since the data that was last collected in Gates County was from November 2023, the county has implemented a new testing schedule to understand current levels at each of the 3 county wells to better understand the current situation and determine if anything could be done to mitigate the potential hazard.**
 - Testing will occur weekly for 3 months then monthly for 6 months of each well that provides water to the county treatment plant, and the water leaving the treatment plant for consumption.
- The initial results from the first round of testing showed the following:
 - Well 1 – 3.2 mg/L
 - Well 2 – 1.0 mg/ L
 - Well 3 – 1.1 mg/L
 - Water from the county treatment plant to the public water supply – 3.1 mg/L
- **Based on the initial results and the fact that Well 1 only produces around 250 gallons of water per 12 hour cycle, compared to the other two that combined produce 1500 gallons of water per cycle, Well 1 was placed out of commission and turned off on September 11, 2024.**
 - **It is anticipated that it will take about a week to see the full impact of shutting down this pump.**
- The county will continue testing and work to secure the necessary resources and determine next steps based on these results.
- The county currently has plans to install two new wells and upgrade the water treatment facility over the next 5 years.

What should the public do now?

- Since the most recent levels are above 2 mg/L:
 - Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums.

- **If initial results after well 1 was placed out of commission indicate fluoride levels are still greater than 2 mg/L, then children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth.**
- You may also want to contact your dentist about proper use by young children of fluoride-containing products.
- **If initial results after well 1 was taken out of commission indicate that fluoride levels remain above 2 mg/L, pregnant people or parents of children who live in areas with higher fluoride concentrations should use low fluoride bottled water, for instance to mix infant formula. Older children and adults may safely drink the water.**
- If you are on a private well, you may wish to have your well tested for current fluoride levels.
- The county will continue to test and provide the public with the results of the tests.