

Fluoride in Drinking Water



What is fluoride?

A naturally occurring mineral found in water and soil and is beneficial for **dental health**.¹

Public drinking water vs private well water

Fluoride has been added to most public drinking water in the U.S. since 1945.² However, **private wells** have different amounts of fluoride and **are not regulated**.³



Community water fluoridation **reduces tooth decay by**

25%

in **adults and children**.²



Everyone living in a fluoridated community **saves**

\$32

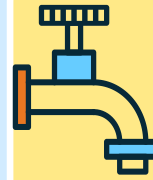
yearly in avoided dental costs.⁴



Fluoridation helps oral health in

2 ways:

strengthening teeth as they are forming and **protecting** them against decay.⁵



The right amount of fluoride



0-0.5 mg/L = Too little won't prevent tooth decay.



0.6-1.0 mg/L = Ideal for dental health. This is fluoridation.²



>2.0 mg/L = Too much can lead to dental fluorosis.



>4.0 mg/L = High amounts can lead to skeletal fluorosis.

Does your water have the right amount?



Tooth decay (cavities): Teeth are more likely to get cavities when drinking water that has too little fluoride.⁵



The right amount (0.6-1.0 mg/L): Teeth are stronger, lowering the chance of tooth decay.⁵



Too much fluoride (>2.0 mg/L): This can cause dental fluorosis. This type of fluorosis may appear as white spots on teeth that may be barely noticed. Even higher fluoride can result in skeletal fluorosis, which can cause joint pain and weaken bones. Skeletal fluorosis is rare in the U.S.⁵



Virginia Tech • Virginia State University



Virginia Household Water Quality Program

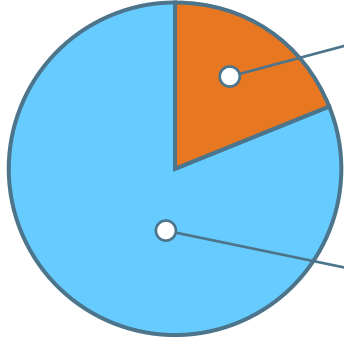


VIRGINIA DEPARTMENT OF HEALTH

Virginia Cooperative Extension is a partnership of Virginia Tech, Virginia State University, the U.S. Department of Agriculture, and local governments. Its programs and employment are open to all, regardless of age, color, disability, sex (including pregnancy), gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, military status, or any other basis protected by law.

This document was created by Erin Ling, Sr. Research Associate, Leigh-Anne Krometis, Associate Professor, Jett Katayama and Nicole Chapman, BSE undergraduate researchers, and Christy Meek, MPH.

Fluoride in Virginia Drinking Water



19% of Virginians rely on **private water supplies**; maintenance and testing is the responsibility of the owner.⁶

81% of Virginians rely on **community water systems** which are regulated and monitored. Most of these systems are fluoridated.⁶



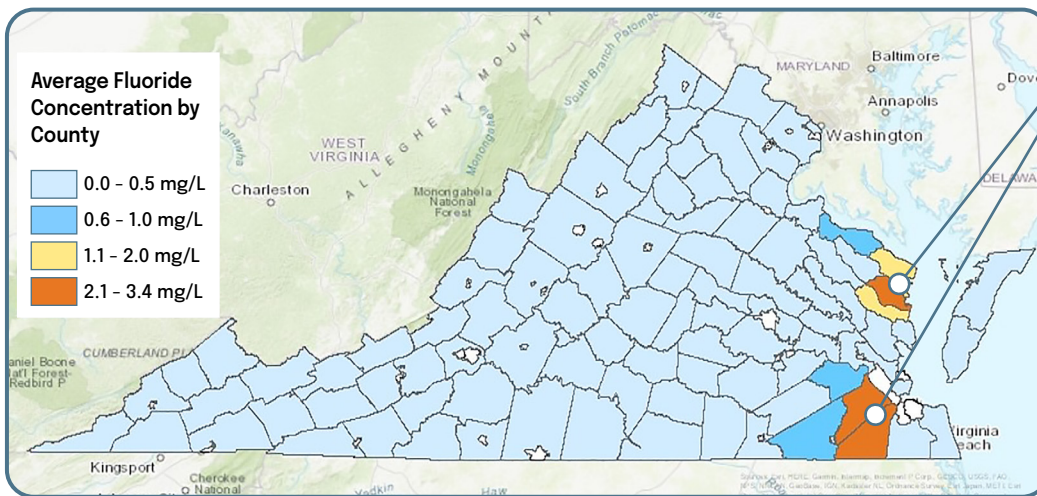
The majority of households in **60 of Virginia's 95 counties** rely on private water systems.⁷



Homeowners with private water systems are responsible for monitoring the quality of their water.⁷

Private water supply fluoride concentrations

Homeowner collected well and spring water samples from VAHWQP 2008-2022 (n=23,940)



Private water supplies in Suffolk, Isle of Wight, Northumberland, Lancaster and Middlesex counties tested **higher in fluoride** than the recommended amount of 0.6-1.0 mg/L.⁸

The average amount of fluoride in the **majority of counties tested lower** than the recommended amount.⁸ Fluoride levels may vary locally. Testing is the best way to know your fluoride level.



If fluoride is >2.0 mg/L (too high):

Talk with your doctor or dentist and consider using a water filter or use another source of water.



If fluoride is <0.6 mg/L (too low):

Talk with your doctor or dentist about other ways to get enough fluoride.



Test your water! For more information:

Contact Virginia Household Water Quality Program at [wellwater.bse.vt.edu](https://www.wellwater.bse.vt.edu) to find out where to get your water tested.