

# Fluoride & PRIVATE WELLS



## 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. Fluoride is found in rocks deep underground and all natural waters.

Fluoride is added to public drinking water supplies to reduce tooth decay. Fluoride is also used in toothpaste, mouth wash and other dental products. Fluoride compounds are used for several industrial activities like making steel, ceramics, lubricants, dyes, plastic and pesticides.

## How does fluoride get in my private well water?

Fluoride can enter your private well water from erosion of rocks underground. Fluoride can also enter groundwater from discharge during industrial activities.

## How can fluoride affect my health?

Fluoride is not an essential element, meaning your body does not need it. However, it does help prevent tooth decay at low levels. You can't see, smell, or taste fluoride.

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. Animal studies suggest that fluoride may impact neurodevelopment.

## What level of fluoride should I be concerned about?

The **US Environmental Protection Agency** developed a public drinking water standard of **4 milligrams of fluoride per liter of water (mg/L)**. Public drinking water standards are based on public health protection and cost of treatment/testing at large utilities. This standard was developed in 1975 and validated in 2017.

The **US Environmental Protection Agency** and **NC Department of Environmental Quality** developed an aesthetic standard of **2.0 mg/L**. This standard was developed to prevent tooth discoloration.

## How do I test for fluoride in my private well?

Use a certified lab to test your well water for fluoride every two years, as part of the inorganic panel screen. Contact the private well program at your county health department to assist you with getting your water tested. Pricing of testing varies from county to county.

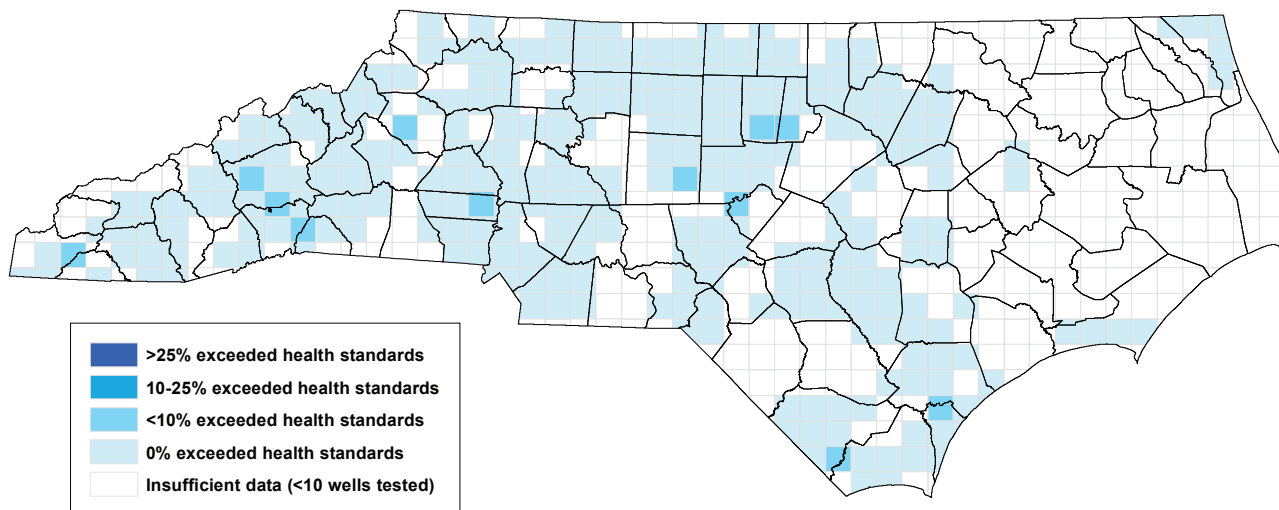
## What if my fluoride levels are high?

You can install a treatment system to reduce the levels of fluoride in your private well.

Treatment systems that reduce the levels of fluoride in your well water include:

- Cation or Anion exchange
- Distillation
- Reverse osmosis

## Percent of Private Wells Tested Exceeding Federal Standards for Fluoride, 2011-2013



You can also reduce your exposure by using bottled water or connecting to public water supply, if possible.

### Where is fluoride found in NC?

Fluoride is found at low levels (0.2-8.1 mg/L) throughout NC. **Less than 1%** of wells sampled for fluoride in NC from 2011 to 2013 exceeded the federal standard (4 mg/L). Yet, there are several areas in NC with at least 10% of wells exceeding federal standards. See map for areas with elevated fluoride.

### Where can I find more information about fluoride and my well?

Visit the NC Division of Public Health's Private Well and Health Program website: <http://epi.publichealth.nc.gov/oeep/programs/wellwater.html>.

There you can find:

- Contacts for your county private well program
- Fluoride in well water maps
- A guide for selecting a treatment system
- Other private well resources

You can also call the Private Well and Health Program at 919-707-5900.

### Where did this information come from?

**Agency for Toxic Substances & Disease Registry:** [www.atsdr.cdc.gov/toxfaqs/tfacts11.pdf](http://www.atsdr.cdc.gov/toxfaqs/tfacts11.pdf)

**World Health Organization:** [www.who.int/water\\_sanitation\\_health/dwq/chemicals/fluoride.pdf](http://www.who.int/water_sanitation_health/dwq/chemicals/fluoride.pdf)

**National Sanitation Foundation:** [www.nsf.org/consumer-resources/what-is-nsf-certification/water-filters-treatment-certification/contaminant-reduction-claims-guide](http://www.nsf.org/consumer-resources/what-is-nsf-certification/water-filters-treatment-certification/contaminant-reduction-claims-guide)

**Water Quality Association:** [www.wqa.org/Portals/0/Technical/Technical%20Fact%20Sheets/2014/Fluoride.pdf](http://www.wqa.org/Portals/0/Technical/Technical%20Fact%20Sheets/2014/Fluoride.pdf)

