

# What are PFAS chemicals?

## Per- and Polyfluoralkyl Substances (PFAS)

A group of over 12,000 man-made chemicals first created in the 1930s.

## Known as 'forever chemicals'

PFAS can take up to 1,000 years to break down in the environment and can build up in the body over time causing adverse health effects.

## In the environment

The creation, use and disposal of PFAS-containing products introduces these contaminants into the environment. Over time they may enter our untreated drinking water sources and private wells.

Information about PFAS is evolving. To learn more, visit [vdh.virginia.gov/drinking-water/pfas/](https://vdh.virginia.gov/drinking-water/pfas/)

## Examples of common sources of PFAS



Non-stick cookware



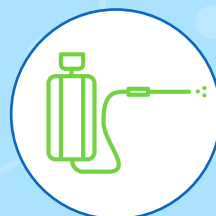
Cosmetics and personal care items



Water-resistant clothing



Fast food packaging



Pesticides



Firefighting foams

## PFAS exposure routes

PFAS exposure occurs through ingestion, inhalation, and skin absorption. This can happen by consuming food and water contaminated with PFAS, as well as through exposure to air and everyday products containing these chemicals.

Based on current research, higher exposure to PFAS may increase the risk of:



High-blood pressure



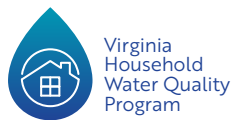
Decrease in fertility



Reduced immune system function



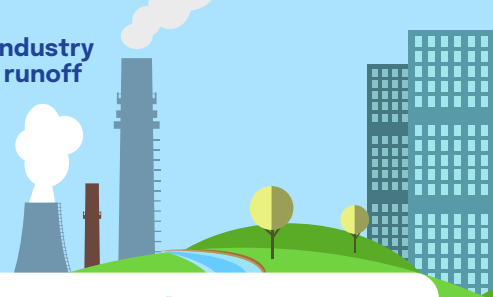
Certain cancers including kidney and testicular



# PFAS in private wells

Drinking water wells near urban areas, landfills, wastewater treatment plants, military installations, and airports may be at a higher risk for PFAS contamination.

Industry runoff



Water treatment plants



Airports



Landfills



## PFAS regulation

The Environmental Protection Agency has set standards for municipal systems for some PFAS chemicals, though these won't be fully enforced until 2029.

**The EPA regulations do NOT apply to private water systems such as wells.**

## Testing your water

Testing your well for PFAS can be expensive and is not always necessary. If you are concerned about the quality of your well water, it is still recommended that you test yearly for traditional contaminants such as lead and bacteria.

## PFAS in Virginia

PFAS testing is ongoing in Virginia as of 2024. The Office of Drinking Water (ODW) is taking steps to test and treat public water for PFAS chemicals.

PFAS have been detected in wells across various regions of Virginia. If you are concerned about your well water, have your water tested.

## For more information

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

**Ways to reduce exposure to PFAS in drinking water:**



Activated carbon, reverse osmosis, and ion exchange resins are the most effective treatments for removing PFAS and other drinking water contaminants.



Replace and maintain any filters (i.e., Brita) according to the manufacturer's recommendations.

This document was created by Kathleen Hohweiler, PhD Student, Virginia Tech Biological Systems Engineering, Amanda Darling, PhD Student, Virginia Tech Civil and Environmental Engineering Department, Leigh-Anne-Krometis, Professor, Virginia Tech Biological Systems Engineering, Erin Ling, Sr. Extension Specialist, Virginia Tech Biological Systems Engineering, and Christy Meek, EHS, Virginia Department of Health.

For full list of references, visit [https://www.wellwater.bse.vt.edu/files/PFAS\\_Infographic\\_References.pdf](https://www.wellwater.bse.vt.edu/files/PFAS_Infographic_References.pdf)

At present, EPA has finalized a National Primary Drinking Water Regulation (NPDWR) establishing legally enforceable levels, called Maximum Contaminant Levels (MCLs), for six PFAS compounds in drinking water. PFOA, PFOS, PFHxS, PFNA, and HFPO-DA as contaminants with individual MCLs, and PFAS mixtures containing at least two or more of PFHxS, PFNA, HFPO-DA, and PFBS using a Hazard Index MCL to account for the combined and co-occurring levels of these PFAS in drinking water.