

PFAS in Drinking Water

Per- and polyfluoroalkyl substances (PFAS) are chemicals produced in the United States since the 1940s. They are used for applications ranging from firefighting to stain and waterproofing of consumer products, such as carpet, clothing, and food packaging. Some PFAS are no longer made due to environmental and human health concerns, but they persist in the environment and may contaminate surface waters and groundwaters near sites where they were made or used. Newer PFAS continue to be produced in the U.S., even though little is known about their potential effects on human health and the environment.

HOW CAN PFAS AFFECT MY HEALTH?

Most of what is known about PFAS-related health effects comes from studies of humans and animals exposed to perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). PFOA and PFOS are no longer produced in the U.S. but continue to be detected in human blood. Newer PFAS that remain in production are also detected in human blood. Exposure to high levels of PFAS in contaminated drinking water may result in the following health effects:

- Increased cholesterol levels
- Changes in liver enzymes
- Hormone disruption and increased risk for thyroid disease
- Decreased odds of women becoming pregnant
- High blood pressure or pre-eclampsia during pregnancy
- Small decreases in infant birth weights
- Decreased vaccine response in children
- Increased risk of kidney or testicular cancers

A blood test can determine if you have been exposed to PFAS, but these tests cannot tell how much PFAS you have been exposed to or if adverse health effects will occur. If you have health concerns about being exposed to PFAS in your drinking water, consult your doctor.

IS THERE AN ACCEPTABLE LEVEL OF PFAS IN MY WATER?

There are no federal drinking water standards for PFAS in public water supplies. However, the Illinois Environmental Protection Agency (Illinois EPA) has issued health advisory levels for PFOA, PFOS, perfluorobutane sulfonic acid (PFBS), perfluorohexane sulfonic acid (PFHxS), and perfluorohexanoic acid (PFHxA)¹, which are provided below in parts per trillion (ppt). The advisory levels are not drinking water standards, but you may have an increased risk for PFAS-related health effects when the level of PFAS in your drinking water exceeds them.

PFOA	PFOS	PFBS	PFHxS	PFHxA
2 ppt	14 ppt	2,100 ppt	140 ppt	560,000 ppt

¹ Illinois EPA updates the health advisory levels as new toxicity assessments become available. The most recent updates are available from <https://www2.illinois.gov/epa/topics/water-quality/pfas/Pages/pfas-healthadvisory.aspx>.

CAN MY WATER BE TESTED FOR PFAS?

In 2020, the Illinois EPA began testing all Illinois community water supplies to determine the prevalence and magnitude of PFAS in drinking water. Though private wells and non-community water supplies were not part of statewide testing, nearby community water supply test results may indicate a potential for private well and non-community water supply contamination. Community water supply test results can be found on the Illinois EPA's [Drinking Water Watch](#) website. If you live near a community where PFAS have been detected in the community water supply or a site where PFAS may have been released, you may contact the Illinois Department of Public Health (IDPH) or your local health department for assistance in conducting your own testing.

CAN PFAS BE REMOVED FROM MY DRINKING WATER?

PFAS can be removed from drinking water with in-home treatment technologies, such as carbon filtration and reverse osmosis. Carbon filters can be installed at the point-of-use, such as your kitchen faucet or refrigerator, or the point-of-entry to your home. Carbon filters are also available with filtered water pitchers. Likewise, reverse osmosis systems can be installed under your kitchen sink to treat water primarily used for drinking or cooking. In-home treatment may not always reduce PFAS below levels of concern, as the effectiveness of treatment is largely based on the amount of PFAS contamination and continued maintenance of the treatment system. To maximize the effectiveness of PFAS removal, IDPH recommends installing treatment systems certified by the National Sanitation Foundation (<http://info.nsf.org/Certified/DWTU/>) and following the manufacturer's maintenance instructions.

WHERE CAN I GET MORE INFORMATION?

Illinois Department of Public Health
Environmental Toxicology Program
525 W. Jefferson St.
Springfield, IL 62761
217-782-5830
TTY (hearing impaired use only) 800-547-0466
DPH.Tox@illinois.gov

[Illinois Environmental Protection Agency](#)

[Agency for Toxic Substances and Disease Registry](#)

[U.S. Environmental Protection Agency](#)

This publication was made possible by Grant Number 5NU61TS000318-02-00 from the Agency for Toxic Substances and Disease Registry. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Agency for Toxic Substances and Disease Registry, or the U.S. Department of Health and Human Services.