



PFOS, PFOA and other PFAS

Questions and Answers

What are PFOS, PFOA and PFAS?

PFOS and PFOA belong to a large family of chemicals referred to as perfluoroalkyl substances, or PFAS for short. PFOS (perfluorooctanesulfonic acid) and PFOA (perfluorooctanoic acid) are two chemicals in this family that were made in the highest amounts in the United States. Other chemicals in this family that have been found in Maine soils and water are:

- PFHpA (perfluoroheptanoic acid)
- PFNA (perfluorononanoic acid)
- PFDA (perfluorodecanoic acid)
- PFHxS (perfluorohexanesulfonic acid)

PFOS and PFOA were used for a long time in many household and industrial products. These chemicals were used to make products that repel water, resist stains and grease, and withstand heat. PFOS and PFOA were used to make carpet, fabric, clothing, food packaging, pots and pans, and personal care products. They were also used in some factories and were a key ingredient in some fire-fighting foams. Most companies have stopped using PFOS and PFOA, but other PFAS are still in use.

Almost everyone has some PFOA, PFOS and other PFAS in their bodies because of their use in so many consumer products. We also find low levels of PFOA, PFOS and other PFAS in our environment, and sometimes higher levels near airfields or factories that used the chemicals, or land with a history of land spreading of waste materials containing PFOA, PFOS or other PFAS. This means that some water sources including private wells may contain these chemicals.

Is there PFOA or PFOS in your well water?

Federal or state agencies may have been testing water for PFOA, PFOS and other PFAS in wells near or at your home. Testing for PFAS is usually only done when there is reason to think there is the possibility of well water contamination. Testing for these chemicals in well water is expensive and only done by a few laboratories.

If you are concerned about whether these chemicals are in your well water, contact one of our toxicologists to discuss whether testing your well water makes sense. Please call 866-292-3474 (toll-free in Maine), 207-287-4311, or Maine Relay 711.

How do you read test results for PFOA and PFOS in well water?

Laboratory test results will have a number followed by the letters ng/L or ppt. The letters “ng/L” mean nanograms per liter and “ppt” means parts per trillion and these units are same concentration. These are units of measurement, like grams of sugar per ounce of soda. You only need to pay attention to the numbers and whether they are above Maine’s current drinking water standard for these chemicals. The Maine Department of Environmental Protection has a helpful tip sheet for understanding your water test results at: <https://www.maine.gov/dep/spills/topics/pfas/PFAS-interpret-lab-report.pdf>.

What is the current drinking water standard for PFAS?

In June 2021, the Maine Legislature enacted a law that established a new State drinking water standard of 20 ng/L for the combined sum of six different PFAS: PFOA, PFOS, PFHpA, PFNA, PFDA, PFHxS). If your water has more than 20 ng/L for the sum of these six PFAS, it does not necessarily mean you will have health problems. It does mean that you should take action to reduce the amount of the contaminated water you are drinking.

What are the health effects of PFAS?

Scientists are still learning about the possible health effects from being exposed to PFAS. Most people have some amount of these chemicals in their blood because they were used for many years in many household and industrial products. Drinking water with PFAS can result in higher levels of these chemicals in the blood. Health problems that have been associated with higher levels of PFAS exposure include:

- Decreased response to vaccinations
- Elevated cholesterol
- Small decreases in infant and fetal growth
- Increased risk of kidney, testicular, and breast cancer
- Liver and thyroid abnormalities
- Increased risk of pregnancy-induced hypertension and pre-eclampsia
- Increased risk of ulcerative colitis

Not everyone who is exposed to higher levels of PFAS will develop a health problem associated with that exposure and some people develop these health problems without high levels of exposure to PFAS. In their July 2022 report, the National Academies of Science, Engineering and Medicine (NASEM) provided guidance to healthcare providers on how to evaluate individuals with unusually high PFAS exposure: <https://nap.nationalacademies.org/catalog/26156/guidance-on-pfas-exposure-testing-and-clinical-follow-up>.

What do you do if you have too much PFAS in your water?

What you do depends on how much is in your water, how much water you use, and who is using the water. To quickly reduce the amount of PFAS you take in, you can switch to bottled water for drinking, and making drinks such as coffee, tea, juice, and infant formula. Use of water for cooking, bathing, or watering your garden is unlikely to be a concern unless your water levels of these chemicals are very high.

Should you get your blood tested?

Talk to your doctor if you are interested in testing your blood for PFAS. Together you can discuss what testing your blood for PFAS means in terms of benefits, harms, and next steps (such as follow-up appointments), as well as whether your insurance will pay for this test. According to a July 2022 report from the National Academies of Sciences, Engineering, and Medicine, clinicians should offer PFAS blood testing to patients likely to have a history of elevated exposure, such as from contaminated water.

Contact one of our toxicologists if you are concerned about PFAS and your health or want more information about blood testing at 866-292-3474 (toll-free in Maine), 207-287-4311, or Maine Relay 711.