



PFOS, PFOA and other PFAS

Questions and Answers

What are PFOS, PFOA and PFAS?

PFOS and PFOA belong to a 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 largest amounts in the United States. Some other chemicals in this family that have been found in Maine soils and water are:

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

PFOS and PFOA were used for a long time in many household and industrial products. These chemicals were used to make products to repel water and resist stains and grease. 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 these two chemicals.

How might you come into contact with PFOS, PFOA and other PFAS?

Almost everyone has some PFOS or PFOA in their bodies because these chemicals were in so many consumer products and for many years. For most of us, the amount of these chemicals in our bodies have been decreasing as the use of PFAS in consumer products has been phased out.

Low levels of PFOS, PFOA and other PFAS are also present in our environment. Higher levels are sometimes found near airfields that may have used fire-fighting foams, factories that used these chemicals, or land with a history of using certain waste materials or biosolids containing PFOS, PFOA, or other PFAS.

Crops may be grown on soil that has these PFAS, but how much of these chemicals are in the crop depends on the type of crop, what part of the crop is edible, soil properties, and levels in the soil. These chemicals may end up in the milk and meat of animals fed crops like hay containing PFAS. These chemicals can also move from the soil into the ground water and into well water. Consuming contaminated milk, meat, plants, or water are potential ways people can be exposed to these chemicals.

How can PFOS, PFOA and other PFAS affect my health?

Scientists are still learning about the possible health effects from being exposed to PFAS. Most health studies so far have focused on PFOS and PFOA.

According to the U.S. Agency for Toxic Substances and Disease Registry, some, but not all, studies have shown that PFOS and PFOA may:

- increase cholesterol levels;
- decrease how well the body responds to vaccines;
- increase liver enzymes;
- increase risk of high blood pressure or pre-eclampsia in pregnant women;
- decrease infant birth weight.

It is unclear if PFAS exposure directly causes cancer. Some studies show people exposed to high levels of PFOA may have an increased risk of kidney cancer or testicular cancer. Fewer studies have found a link between PFOS and increased cancer-risk. The studies on PFAS exposure and cancer all have limitations. For example, not all PFAS studies have made sure that other known risk-factors like smoking are not the cause of cancer. Some studies with laboratory animals, mostly with PFOA, have also shown higher exposures can cause cancer.

Should I test my blood for PFOS, PFOA, or other PFAS?

Blood test results will only tell you the levels of PFOS, PFOA and other PFAS in your blood and whether they are high or low compared to typical levels found in the United States population. Most people in the United States have very low amounts of PFAS in their blood because of the wide-spread use in consumer products. Individuals that are consuming foods or water contaminated with PFOS, PFOA or other PFAS may have higher levels in their bodies.

A blood test will not provide information on whether any PFAS are causing a current health problem, nor will a blood test predict a health problem. There are no health-based screening levels to which your doctor can compare the levels measured in your blood. There are also no treatments that will directly result from having a blood test for PFAS.

Public health officials sometimes perform studies where they collect blood samples from a larger number of individuals to learn if there is community-wide exposure. This helps understand the kinds and amounts of PFAS exposures in a community and how they compare to other populations.

If you are concerned about a known PFAS exposure it is best to talk with your doctor to decide whether to test for these chemicals.

If you have questions about PFOS, PFOA or other PFAS in the environment, blood testing, or health effects, please contact one of our toxicologists at 866-292-3474 (toll-free in Maine), 207-287-4311, or Maine Relay 711.

