



2017 PFAS Drinking Water Sampling General questions and answers

Exposure to PFAS

What are PFAS and where do they come from?

Per- and Polyfluoroalkyl Substances (PFAS) are a class of man-made chemicals. These chemicals are used in several types of consumer products, such as carpets, clothing, fabrics for furniture, paper packing for food, firefighting foam, and other materials, such as cookware, that are resistant to water, grease, or stains. Therefore, many people have been exposed to PFAS and have these chemicals in their blood from non-drinking water sources.

Facilities that have the potential to contain these chemicals due to use or disposal include industrial factories, airports, fire training academies, landfills, waste lagoons, etc. Drinking water can be an additional source of PFAS in places where these chemicals have gotten into water supplies. Although these chemicals have been largely phased out of production in the U.S., they can last in the environment and in the human body for some time.

Please see the Environmental Protection Agency (EPA) fact sheet at

<https://www.epa.gov/pfas/basic-information-about-and-polyfluoroalkyl-substances-pfass#tab-1>

How can I be exposed to PFAS?

PFAS may be found in:

- public water systems and drinking water wells, soil, and outdoor air near industrial areas with frequent PFAS use
- indoor air in spaces that contain carpets, textiles, and other consumer products treated with PFAS to resist stains
- surface water (lakes, ponds, etc.) or groundwater from run-off or seepage from areas where firefighting foam was often used (like military or civilian airfields)
- fish from contaminated bodies of water
- food items sold in the marketplace
- Teflon or other non-stick pans and cookware
- food packaging

How do unborn babies and young children get exposed to PFAS?

Unborn babies can be exposed to PFAS through umbilical cord blood from their mothers during pregnancy.

Newborns can be exposed to PFAS through breast milk or through formula made with water that contains PFAS. Older children may be exposed to PFAS through food, water, and other products, similar to adults. Young children have a higher risk of exposure to PFAS from carpet cleaners and similar products, largely due to time spent lying and crawling on floors in their early years.

What are exposure limits for PFAS in drinking water? The Environmental Protection Agency (EPA) Health Advisory recommends that the concentration of PFOA and PFOS, or a combination of both PFOA and PFOS, in drinking water should not be higher than 70 parts per trillion. The concentration levels do not represent definitive cut-offs between safe or unsafe conditions, but rather provide a margin of protection for individuals throughout their life from possible adverse health effects. The level was derived to protect fetuses and newborns because they are especially sensitive to the effects of PFAS.

What steps should I take if PFAS have been detected in my drinking water?

The Rhode Island Department of Health recommends taking the following steps to minimize risk:

- DO NOT boil your water. Boiling water will concentrate these chemicals.
- Reduce your risk of exposure to these chemicals by using bottled water or other licensed drinking water that has been tested for these chemicals or that uses a treatment that removes these chemicals (specifically activated carbon or reverse osmosis). Many major bottled water brands use this treatment.
- Water from a safe source should be used for drinking, food preparation, cooking, brushing teeth, and any activity that might result in swallowing water.
- Parents of formula-fed infants may consider using a formula that does not require adding water.

Is it OK to shower, bathe, or swim?

Routine showering, bathing, or swimming are not a major source of exposure to PFAS. As a precaution, you may consider shorter showers or baths, especially for children who may swallow water while playing in the bath, or for people with skin conditions (rashes, cuts, etc.)

Can I do laundry and wash my dishes?

Doing laundry or washing dishes are also not a major source of exposure to PFAS. If washing dishes by hand, you can minimize exposure by wearing rubber gloves, especially if you have a rash, cuts, or abrasions on your hands.

Is it safe to use a humidifier?

If you must use a humidifier, only use water from a safe source.

Health Concerns

Is it common for people to have PFAS in their blood?

Studies show that human exposure to PFAS is widespread and most people in the United States and in other industrialized countries have measurable amounts of PFAS in their blood. In fact, it is unlikely that anyone, even if they did not drink contaminated water, will have a level of “zero” PFAS in their blood. In the last decade, major manufacturers of PFAS-related products joined EPA in a program to phase out production of these chemicals by 2015. Based on Centers for Disease Control and Prevention (CDC) data, levels of certain PFAS are generally decreasing in the blood of the general population because of this important initiative.

Why are PFAS a possible health concern?

If people ingest PFAS (by eating or drinking food or water that contain PFAS), the PFAS are absorbed, and can accumulate in the body. PFAS can be found in blood, and at much lower levels in urine, breast milk and in umbilical cord blood. PFAS stay in the human body for long periods of time. As a result, as people get exposed to PFAS from different sources over time, the level of PFAS in their bodies may lead to adverse health effects. The likelihood of adverse health effects depends on several factors such as the amount and concentration of PFAS ingested as well as the time span of exposure.

At this time, scientists are still learning about the health effects of exposures to PFAS. We do not have an accurate way to predict what health effects people may experience if they are exposed to PFAS in drinking water. Studies on laboratory animals, supported by some evidence from studies of humans indicate that exposure to PFAS over certain levels may result in adverse health effects. Although more research is needed, some studies have shown that certain PFAS may:

- cause developmental effects in infants
- lower a woman’s chance of getting pregnant
- lower infant birth weights
- interfere with the body’s natural hormones
- increase cholesterol levels
- affect the immune system
- increase the risk of cancer

Can my animals be affected by contaminated water?

The health effects on animals are likely to be similar to the effects on people. If you have PFAS in your water that exceeds the EPA Health Advisory level, your pets or livestock should not drink the water.

What should I do if I think I have health effects related to PFAS?

If PFAS is detected in your water above the health advisory, and if you or family members have signs or symptoms that you think could be related to PFAS exposure, you should talk to your family's healthcare provider.

How can PFAS exposure affect my pregnancy?

Exposure to PFAS before pregnancy has been associated with higher blood pressure during pregnancy. However, high blood pressure occurs in many pregnancies. Proper prenatal care is important for all pregnant women. You should talk to your healthcare provider about monitoring your blood pressure closely as a part of your routine prenatal care.

Is it safe to breastfeed my baby?

Breastfeeding is associated with numerous health benefits for infants and mothers. The science on the health effects of PFAS for mothers and babies is evolving. However, given the scientific understanding at this time, the benefits of breastfeeding your baby outweighs those of not breastfeeding. If you have any concerns about breastfeeding, you should talk to your healthcare provider.

Environmental Concerns

If PFAS were detected in my water, how will it affect fruits and vegetables in my garden?

Studies have shown that gardens watered with PFAS-contaminated water will have higher levels of PFAS in the soil, however, PFAS does not stick to soil very well. The more clean water you add to your garden, the lower the soil PFAS will be.

There are a few things you can do to further reduce potential exposure:

- Water your garden and seedlings with a clean source of water.
- Modify your soil with clean compost. Increasing the organic content of your garden soil can prevent the uptake of PFAS into plants. If you have compost from last year's gardening, use that in other areas of your yard.
- Wash your produce in clean water after you harvest it. For root vegetables, consider peeling and washing them before eating.