

Per- and Polyfluoroalkyl Substances (PFAS), Private Wells, and Your Health

What are PFAS?

Per- and polyfluoroalkyl substances (PFAS), are a group of chemicals, also called compounds. There may be health effects from eating or drinking food or water with these compounds. The potential health effects of these compounds depend on how much you are exposed to (eat and drink), how long you are exposed, and personal factors including age, lifestyle and overall health.

The healthiest thing you can do is lower exposure to these compounds. If exposure is from drinking water from a private well, there are treatment options designed to help reduce exposure. People who have private wells should get their water tested if there is an indication that groundwater in the area has been contaminated with PFAS and if they haven't tested the well already. If tests show PFAS are present, certain household filtration systems can remove these compounds from drinking water.

What is a health advisory (HA)?

The U.S. Environmental Protection Agency's (EPA) develops HAs, which are not for regulation, to give information about compounds that can cause harmful human health effects and can occur in drinking water. An HA includes the level of the compound that is considered safe in drinking water and takes into account exposure from food as well.

What is the EPA health advisory for these compounds?

To provide people, including the most sensitive populations, such as pregnant women, with a level of protection from exposure to specific PFAS (PFOA and PFOS) in drinking water, EPA issued interim updated health advisory levels for both PFOA and PFOS. In addition to these two EPA also issued final health advisory levels for GenX chemicals and PFBS. When PFAS are found in drinking water, the combined concentrations should be compared with the health advisory level. This means even these small amounts of PFAS may be harmful.

- Interim updated Health Advisory for PFOA = 0.004 parts per trillion (ppt)
- Interim updated Health Advisory for PFOS = 0.02 ppt
- Final Health Advisory for GenX chemicals = 10 ppt
- Final Health Advisory for PFBS = 2,000 ppt

What does it mean when levels are higher than EPA's health advisory value?

When levels of PFAS in water are higher than the EPA health advisory level, action should be taken to protect people from eating or drinking the compounds. A health advisory value is not a clear line between levels that can cause health effects and those that do not.

How can these compounds be removed from my water?

Certain household filtration systems can remove these compounds from drinking water. If you decide to purchase a filtration system, hire a company that has experience in successfully removing chemicals like PFAS in private domestic well water. The system should be installed by a licensed plumber, and you should consider purchasing a maintenance service contract for the system. Boiling water does not remove PFAS.

How much is that?

Health advisory level = 1 parts per trillion

One part per trillion = 1 ng/L (nanogram per liter)

This amount is equal to:

- One drop of detergent in an Olympic-size swimming pool= 1 drop in 660,000 gallons
- One square inch in 250 square miles.
- One second in 32,000 years.



What should I do?

Ideally, people would not have any PFAS in their drinking water. Public water supplies may be tested for PFAS and you should contact your utility to learn more. People who have private wells with PFAS should consider using other sources of drinking water. Other sources of drinking water include water treated under the sink by a properly designed and maintained filtration system or bottled water.¹ The New Mexico Department of Health is available to discuss test results, water testing and treatment at 505-827-0006 and more information is available at <https://nmtracking.doh.nm.gov/environment/water/PrivateWells.html>

How can these compounds affect my health?

We know the most about PFOA and PFOS, but other PFAS that have long carbon chains, such as PFHpA, PFHxS, and PFNA may have similar negative effects in humans. As new studies are completed, our understanding of their health effects will continue to grow.

Potential health effects of these compounds depend on how much you are exposed to, how long you are exposed, and personal factors including age, lifestyle and how healthy you are.

Many studies have examined possible relationships between levels of PFAS in blood and harmful health effects in people. However, most of these studies only looked at a small number of chemicals, and not all PFAS have the same health effects. Research suggests high levels of certain PFAS may:

- Increase cholesterol levels
- Cause liver damage or changes in liver function
- Decrease how well the body responds to vaccines
- Increase the risk of asthma
- Increase the risk of thyroid disease
- Decrease fertility in women
- Increase the risk of serious conditions like high blood pressure or pre-eclampsia in pregnant women
- Decrease infant birth weight; however, the decrease in birth weight is small and may not affect the infant's health
- Increase the risk of certain kinds of cancer such as kidney cancer and testicular cancer.

Web Resources

- **New Mexico Department of Health:** <https://nmtracking.doh.nm.gov/>
- **Environmental Protection Agency (EPA):** <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>
- **Agency for Toxic Substances & Disease Registry/ Center for Disease Control:** <https://www.atsdr.cdc.gov/pfas/index.html>
https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html

¹Bottled water is not currently regulated to be PFAS-free but the Food and Drug Administration tested 30 bottled water samples in 2016. All samples were <4 ppt for PFOA and PFOS.

Do these compounds affect children differently?

Infants may be at higher risk of health problems because they drink much more water compared to their body weight than older people. While what we know about the health effects in children is limited, certain PFAS may affect growth, learning and behavior in infants and children.

Should I see a doctor?

If you or your family is worried about your health or have symptoms you think are caused by exposure, you should discuss concerns with your health care provider. Resources are available for health care providers here: <https://nmtracking.doh.nm.gov/>

Is there a medical test to show if I have these compounds in my body? What would the test tell me?

Per- and polyfluoroalkyl substances can be measured in your blood, but this is not a routine test most doctors know how to order. These compounds are found at low levels in almost everyone's blood and can stay in the blood for several years after exposure. Testing can tell if a person's level is lower than, similar to, or higher than the blood levels of the general population. However, results of blood tests won't show whether you might have health problems from exposure.

For Health Information Contact:

New Mexico Department of Health,
Epidemiology and Response
Division: 505-827-0006

Learn about Environmental Health:

<https://nmtracking.doh.nm.gov/>