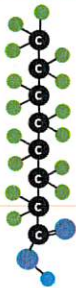


# PFAS Explained:



Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals.



## What are PFAS?

PFAS are manufactured chemicals that have been used in industry and consumer products since the 1940s. Because of their widespread use and their persistence in the environment, many PFAS are found in the blood of people and animals all over the world. There are thousands of different PFAS, some of which have been more widely used and studied than others.



## Are PFAS safe?

Research is ongoing to determine how exposure to different PFAS can lead to a variety of health effects. Studies have shown that exposure to certain levels of PFAS may lead to:



### Cancer Effects

Increased risk of some cancers, including prostate, kidney, and testicular cancers.



### Weight Effects

Increased cholesterol levels and/or risk of obesity.



### Immune Effects

Reduced ability of the body's immune system to fight infections.



### Developmental Effects

Low birth weight, accelerated puberty, bone variations, or behavioral changes.



### Reproductive Effects

Decreased fertility or increased high blood pressure in pregnant women.

The more we learn about PFAS chemicals, the more we learn that certain PFAS can cause health risks even at very low levels. This is why anything we can do to reduce PFAS in water, soil, and air, can have a meaningful impact on health. EPA is taking action to reduce PFAS in water and in the environment. You can also take action if you remain concerned about your own risk.


Read on to learn where PFAS are coming from, how EPA is taking action on PFAS, and what actions you can take.

# PFAS Explained:



## Where are PFAS found?

Most people in the United States have been exposed to some PFAS. People can be exposed to PFAS by touching, drinking, eating, or breathing in materials containing PFAS. PFAS may be present in:

 <b>Drinking Water</b> An important potential source of PFAS exposure.	 <b>Waste Sites</b> Soil and water at or near landfills, disposal sites, and hazardous waste sites.	 <b>Fire Extinguishing Foam</b> Used in training and emergency response events at airports and firefighting training facilities.	 <b>Facilities</b> Chrome plating, electronics, and certain textile and paper manufacturers that produce or use PFAS.
 <b>Consumer Products</b> Stain- or water-repellent, or non-stick products, paints, sealants, and some personal care products.	 <b>Food Packaging</b> Grease-resistant paper, microwave popcorn bags, pizza boxes, and candy wrappers.	 <b>Biosolids</b> Fertilizer from wastewater treatment plants used on agricultural lands can affect ground and surface water.	 <b>Food</b> Fish caught from water contaminated by PFAS and dairy products from livestock exposed to PFAS.

Very little of the PFAS in water can get into your body through your skin, so, showering, bathing, and washing dishes in water containing PFAS are unlikely to significantly increase your risk.

EPA's researchers and partners across the country are working hard to understand how much PFAS people are exposed to and how.



Keep reading to find out how EPA is taking action on PFAS.



## EPA is taking action to address PFAS

In October 2021, EPA released its PFAS Strategic Roadmap, which highlights concrete actions the Agency will take across a range of environmental media and EPA program offices to protect people and the environment from PFAS contamination. The Roadmap is guided by three primary goals:



### Research

Invest in research, development, and innovation



### Restrict

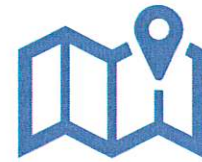
Prevent PFAS from entering air, land, and water



### Remediate

Broaden and accelerate the cleanup of PFAS contamination

Since the Roadmap's release, EPA has taken a number of key actions including:



- Began distributing \$10 billion in funding to address emerging contaminants under the Bipartisan Infrastructure Law (BIL).
- Issued health advisories for PFAS and proposed new, legally, enforceable Maximum Contaminant Levels (MCLs) for six PFAS substances known to occur in drinking water.
- Proposed to designate two PFAS as CERCLA hazardous substances.
- Laid the foundation for enhancing data on PFAS.

To learn more about the PFAS Strategic Roadmap and key actions taken by EPA scan the QR code.



Turn the page to learn what actions you can take.

# PFAS Explained:



## Actions you can take: Protect your drinking water

1

### Find out if PFAS are in your drinking water:

- If you get your water from a public drinking water system, reach out to your local water utility to see if they do testing. Or, you can choose to test the water yourself.
- If you get your water from a home drinking water well, you are responsible for conducting regular testing.
- If you choose to test your water yourself, contact your state environmental or health agency for detailed advice or to obtain a list of state-certified laboratories using EPA-developed testing methods in drinking water.

2

**Compare your results** to your state standards for safe levels of PFAS in drinking water or to EPA's Health Advisory Levels (HALs) for PFAS.

Scan this code  
for more  
information  
about HALs:



SCAN ME

3

### Take protective action!

- Contact your state environmental and health agencies for recommendations.
- Consider installing an in-home water treatment (e.g., filters) that are certified to lower the levels of PFAS in your water.
- Consider using an alternate water source for activity when your family might swallow water.

EPA makes frequent updates to its PFAS website:

4

To learn more about PFAS, scan the QR code to the right or go to <https://www.epa.gov/pfas>.



SCAN ME



## PFAS and Your Private Well

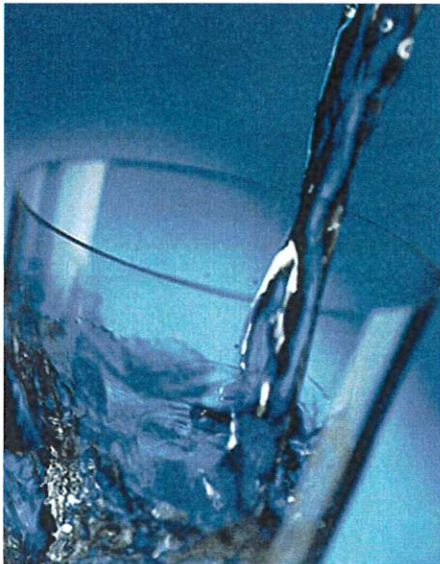
September 2023

Per- and polyfluoroalkyl substances (PFAS) are human-made chemicals used in a variety of consumer products and industries. PFAS make products water-repellent and resistant to stains and heat. They are known as “forever chemicals” because they do not break down easily in the environment.

These chemicals can accumulate in the body and exposure to certain PFAS has been linked to a variety of health risks. According to the National Ground Water Association, exposure to PFAS does not always mean that a person will have adverse health effects – the amount of exposure also matters. Most people have some measurable level of PFAS in their blood.

*People can be exposed to PFAS through food, drinking water, dust, or consumer products*

This fact sheet discusses PFAS in drinking water and treatment options. There are things you can do to protect your water supply from PFAS.



### What level of PFAS in drinking water is safe?

The U.S. Environmental Protection Agency (EPA) recently proposed drinking water standards for six different PFAS compounds. The proposal, if finalized, would regulate six PFAS chemicals at drinking water utilities, including PFOA (perfluorooctanoic acid) and PFOS (perfluorooctanesulfonic acid).

The EPA is proposing maximum contaminant levels (MCLs) for PFOA and PFOS at 4 nanograms per liter (ng/L), which is equivalent to 4 parts per trillion (ppt). One ng/L is about the same as one drop of water in twenty Olympic-sized swimming pools. MCLs are concentrations designed to protect public health while taking into consideration the ability to measure and remove a contaminant from drinking water.

These MCLs are proposed for public water utilities. **Please note that the water quality of private wells is not regulated in New Mexico.** Well owners are responsible for well maintenance, protecting their water source, testing and, when applicable, treating their water.



## How do PFAS get into drinking water?

PFAS can get into drinking water when products containing them are used or spilled onto the ground or into lakes and rivers. Researchers have found that PFAS in the air can also end up in lakes and rivers used for drinking water.

## What can I do about PFAS in my drinking water?

There are several options to avoid consuming PFAS when they are present in drinking water:

- Use bottled water instead of well water for drinking and cooking.
- Purchase water from filtered filling stations found at many grocery stores.
- Treat your well water to remove PFAS.

Certain types of filters can decrease levels of PFAS in your drinking water. Granular activated carbon (GAC, also known as charcoal filters) and reverse osmosis (RO) are two technologies that can remove PFAS from water.

Keep in mind that filters will become contaminated during the process of removing PFAS from your water. The more you use your water filtration system, the more frequently the filters must be changed.

If you purchase a water filtration system, be sure to look for certifications from NSF, UL, and the Water Quality Association:



To be certified, filtration units are tested to confirm that they meet all claims of reducing contaminants in water. Remember to ask your service provider about details for regular maintenance of the treatment system.

## Tips for reducing your exposure to PFAS in water

- Avoid using PFAS-containing water for drinking, making ice cubes, cooking foods where water is absorbed or consumed (like rice and soup), preparing baby formula, or similar uses.
- Touching water with PFAS is not harmful according to the Agency for Toxic Substances and Disease Registry. This area is still under research and guidance may change over time.
- Boiling or freezing water will not remove PFAS.
- Water that contains PFAS can be taken up by plants and concentrated in fruit and vegetable roots. Consider alternative water sources for gardening such as rainwater or filtered water.

Contact us for more information about PFAS and water quality:

**PFAS Program**

**Drinking Water Bureau**

New Mexico Environment Department

(505) 205-6964

[DWB.PFAS@env.nm.gov](mailto:DWB.PFAS@env.nm.gov)

<https://www.env.nm.gov/PFAS/>

# 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.



1 in 32,000  
second 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.<sup>1</sup> 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.

## 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/>

## 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](https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html)

<sup>1</sup>Bottled 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.