



PFAS

What are Forever Chemicals?

Per- and polyfluoroalkyl substances (PFAS)

are manmade chemicals used in many industries to make things water proof, non-stick, and stain resistant. Some examples of materials that may contain PFAS include firefighting foam, carpet, furniture, waterproof clothing, and certain types of food packaging. These chemicals are often described as “forever chemicals” because they do not breakdown over time and can build up in the environment and our bodies.

What can I do to decrease exposure to PFAS?

PFAS are present in some food products and in many parts of the environment, so you probably cannot prevent PFAS exposure altogether. However, if you are concerned about PFAS exposure, there are some steps you can take to reduce your risk of exposure.

If your drinking water contains PFAS, consider using an alternative or treated water source for drinking, cooking, brushing teeth and preparing infant formula. To find out if your drinking water has been tested for PFAS, please check your annual Consumer Confidence Report or contact your water service provider (who you pay your water bill). Information on PFAS water treatment technologies can be found [here](#).

Read consumer product labels and avoid using products with PFAS. Avoid products with the ingredient PTFE or other “fluoro” ingredients listed on the label. Consider avoiding grease-proof and water-proof paper food packaging. One source of information for PFAS-free products can be found [here](#).

How might I be exposed to PFAS?



Food

PFAS can get into food via contact with certain types of food packaging and deteriorated PFAS containing cookware. PFAS can accumulate in fish and shellfish living in contaminated waters and in fruits or vegetables grown in contaminated water.



Contaminated Drinking Water

Drinking water contaminated with PFAS is a common source of PFAS exposure. Most cases of contaminated drinking water in the U.S. are the result of contamination from fire-fighting training sites, military installations, or manufacturing facilities.



Household Products and Building Materials

Many personal and household products contain PFAS and their use may create situations where they are unintentionally ingested or inhaled. PFAS can be found in stain-resistant coatings used on carpets, upholstery, and other fabrics, water-resistant clothing, cleaning products, personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup), paints, varnishes, and sealants.



Contaminated Dust

Dust can be contaminated with PFAS through the breakdown of building materials or products containing PFAS. This dust can then be unintentionally swallowed by people when it gets on their hands, dishes, or toys. This is especially concerning for young children who frequently put objects or their hands in their mouths.

When the National Health and Nutrition Examination Survey (NHANES) tested the blood of volunteers in 2016, they concluded that 98% of Americans have detectable PFAS in their blood. PFAS have also been found in sea turtles, whales, dolphins, and Hawaiian monk seals around Hawai'i.



What are the EPA's June 2022 Drinking Water Lifetime Health Advisory Levels?

EPA's lifetime health advisories identify levels to protect all people, including sensitive populations and life stages, from adverse health effects resulting from daily exposure to certain PFAS in drinking water across an entire lifetime. These levels also take into account other potential sources of exposure to these PFAS beyond drinking water (e.g., food, air, consumer products, etc.).

In June 2022, the EPA published interim updated drinking water lifetime health advisory levels for two PFAS chemicals (PFOS and PFOA). These updated levels are MUCH lower than EPA's prior health advisory levels for PFOS and PFOA and further evaluation of the science behind the new levels is ongoing. EPA also released drinking water lifetime health advisory levels for two additional PFAS chemicals: PFBS and GEN-X (also called HFPO). Interpretation of lab results for PFOA and PFOS is difficult because these health advisory levels are far lower than the levels at which a laboratory can detect these chemicals.

EPA's new lifetime health advisory levels, measured in parts per trillion (ppt):

- Interim updated health advisory for PFOA = 0.004 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

For more information on the EPA's PFAS Drinking Water Health Advisories for PFOA, PFOS, GEN X, and PFBS, please see: [Questions and Answers: Drinking Water Health Advisories for PFOA, PFOS, GenX Chemicals and PFBS](#)



Scan for more information about PFAS

What are the environmental and human health impacts from exposure to PFAS?

Although there are thousands of PFAS chemicals, only a small number have been evaluated for their risk to human health and the environment. In addition, little is known about the health and environmental risks of exposure to combinations of these chemicals.

Exposure to different PFAS may result in different health impacts. Although more research is needed, research involving humans suggests that high levels of certain PFAS may lead to the following:

- Increased cholesterol levels
- Changes in liver enzymes
- Alterations of the immune system and decreased response to vaccines
- Increased risk of high blood pressure or pre-eclampsia in pregnant women
- Developmental delays in children and decreases in infant birth weights
- Increased risk of kidney or testicular cancer

Where can I find more information about PFAS?

[DOH PFAS website](#)

[CDC's Agency for Toxic Substances and Disease Registry \(ATSDR\) PFAS and Your Health website](#)

[EPA's PFAS website](#)

[EPA's June 2022 Drinking Water Health Advisories for PFAS website](#)

[Green Science Policy Institute PFAS Central](#)

[Silent Spring Institute PFAS Exchange](#)