

# PFAS Exposure: Information for patients and guidance for clinicians to inform patient and clinician decision making

For people in PFAS-impacted communities

## Purpose

This guidance document is intended for people living in communities with contaminated water or who have had some other source of substantial exposure to PFAS. This guidance document is not targeted to those at average risk from PFAS.

## What is medical screening?

Medical screening is the testing for early signs of disease. Screening for certain conditions or subclinical changes may be advised for those who have or have had known elevated exposure to PFAS. Medical screening may identify early indicators of disease and allow you to work with your clinician to determine next steps.

## What are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a large group of over 9,000 human-made chemicals, exposure to which has been associated with several serious health effects. They are extremely resistant to breakdown, highly mobile in the environment, and have contaminated hundreds of drinking water supplies. PFAS have been found in the blood of over 99% of Americans and some PFAS can remain in the body for years.

## How can I be exposed to PFAS?

### At home

- Drinking contaminated water
- Eating food contaminated from environmental sources or from processing and packaging
- Using stain- and water-resistant products, grease-proof food packaging, nonstick cookware, and many other consumer products



### At work

Some people, such as firefighters and those in chemical production and application industries, may be exposed to products containing PFAS at work.



### Early in life

PFAS can cross the placenta and accumulate in breast milk, so children can be exposed in the womb and during early life through breastfeeding.



## How are PFAS regulated in drinking water?

- PFAS are not regulated under the U.S. Environmental Protection Agency's Safe Drinking Water Act. This means there are no federally enforceable standards and public water suppliers are not required to routinely test or treat for PFAS under federal law.
- In 2016, the U.S. Environmental Protection Agency established a non-enforceable Lifetime Health Advisory of 70 parts per trillion (ppt) for PFOA and PFOS (two of the most common PFAS chemicals) individually or combined, for municipal drinking water. Some scientists and regulators think this advisory is not sufficiently protective of human health.
- As of April 2021, 12 states have adopted more stringent, and in some cases enforceable, drinking water guidelines. The [PFAS Exchange](#) provides more information about national and state drinking water guidelines. Some states have established guidelines for additional PFAS chemicals, down to 10–20 ppt.
- The Northeastern University [Contamination Site Tracker](#) has documented hundreds of contaminated sites in the U.S., with more sites being added as testing continues.

## What are the health effects of PFAS?

Many studies have evaluated harmful health effects of PFOA, PFOS, and a handful of other PFAS chemicals. Several national and international health agencies have reviewed the results of peer-reviewed epidemiological (human populations) and toxicological (laboratory animals) research and written scientific assessments based on these studies, including:

- Agency for Toxic Substances and Disease Registry (2021)
- Centers for Disease Control and Prevention (2019)
- C8 Science and Medical Panels (2005-2013)
- European Environment Agency (2019)
- International Agency for Research on Cancer (2017)
- National Toxicology Program (2016)

At least one of these assessments concluded that PFAS exposure is associated with:

- Increase in total cholesterol and LDL cholesterol
- Decreased antibody response to vaccines in children
- Longer time to pregnancy
- Kidney and testicular cancer
- Thyroid disease
- Liver damage
- Increased risk of pregnancy-induced hypertension and/or pre-eclampsia
- Chronic kidney disease, elevated uric acid, hyperuricemia, and gout
- Immune system disruption
- Adverse developmental outcomes, including small decrease in infant birth weight and altered mammary gland development

As the scientific community continues to study the health impacts of PFAS, preliminary and/or suggestive epidemiologic and animal evidence is regularly emerging. Some studies have found associations with:

- Non-alcoholic fatty liver disease
- Autoimmune disease, such as ulcerative colitis and Type 1 diabetes
- Shortened duration of lactation in mothers
- Decreased male fertility

### A note about these studies

Current strength of evidence ranges from very strong and near certain for lipid, liver, and immune outcomes, to “more likely than not” for others.

### What about COVID-19?

It is currently unknown whether PFAS has any effect on the COVID-19 vaccination. There is no evidence that anyone should not be vaccinated against COVID-19 on the basis of prior PFAS exposure. All groups are strongly advised to follow updated advice from the Centers for Disease Control and Prevention on the COVID-19 vaccination, which is based on the latest research findings.

## How can I reduce the amount of PFAS in my body?

For people with known elevated PFAS levels in their body, the most important way to reduce the amount of PFAS in the body is to avoid new exposures. Some PFAS chemicals, like PFOS and PFOA, can remain in the body for years. Currently, there are **no medically approved treatments** to speed up removal of PFAS from the body.

- X** Agents or processes known to remove PFAS from the body, such as cholestyramine, phlebotomy, hemodialysis, or apheresis, are not medically approved treatments for PFAS specifically.
- X** Chelation and “alternative” medicine programs, such as detoxes and cleanses, are not known to remove PFAS from the body. Many of these can also pose their own health risks.

## How can I avoid PFAS exposure?

PFAS exposures are widespread, so it is difficult to avoid PFAS entirely. However, you can take steps to reduce your personal exposure going forward:

- If you know or suspect PFAS to be in your drinking water, you can use a filter to lower the levels. Visit the PFAS Exchange’s [drinking water fact sheet](#) to learn more about where to find a lab to test your water for PFAS, and resources to find filters for removing PFOA and PFOS in your drinking water.
- Avoid stain-resistant carpets, treatments, and waterproofing sprays. Green Science Policy Institute’s [PFAS Central](#) maintains a current list of PFAS-free products.
- Avoid take-out containers and other food packaging that may contain PFAS by eating more fresh foods and home-cooked meals.

For more suggestions, visit the PFAS Exchange’s [exposure reduction tips](#) and download Silent Spring Institute’s [Detox Me smartphone app](#).