



## Fact Sheet on Perfluoroalkyl Substances (PFAS) in Drinking Water

### What are PFAS and how can I be exposed?

- PFAS are human-made chemicals that are manufactured for their heat, water, and stain-resistant properties. They are used in a wide variety of common products, like rain gear, non-stick cookware, stain-resistant fabrics, and certain types of firefighting foams called aqueous film forming foams (AFFF), which are used to extinguish fuel and chemical fires.
- The use of AFFF is a common source of environmental PFAS contamination, particularly near airports, military bases, industrial sites, and fire training centers. AFFF discharged during firefighting activities can eventually migrate into the groundwater, contaminating nearby drinking water supplies.

### How do I know if I have been previously exposed to PFAS and how can I remove it from my body?

- Because PFAS are used in so many different types of products, almost all people and animals [have been exposed to more than one type of PFAS](#). There is no medical technique that can remove PFAS from the body, so the best approach is to stop the source of exposure and let the body's natural elimination processes slowly remove it.

### How can PFAS affect my health?

- The likelihood of experiencing health effects from PFAS depends on many different factors, like how much, how often, and how long someone is exposed. Things like age, lifestyle, and underlying health status also play a role.
- Our current knowledge about the health effects of PFAS comes mostly from animal toxicology studies and a smaller number of human epidemiology studies; however, the number of human health studies showing effects are growing rapidly.
- Studies using human stem cells and animals show that certain types of PFAS can lead to negative effects on several different body systems. However, animals and humans have important differences in physiology that can cause them to respond to chemicals differently. Also, laboratory experiments usually use doses of PFAS that are much higher than the average person is likely to experience, so scientists are still learning about the potential health effects of low-dose exposure to PFAS.
- The Agency for Toxic Substances and Disease Registry ([ATSDR](#)) and the US Environmental Protection Agency ([EPA](#)) state that long-term exposure to high levels of PFAS can have the following [effects on human health](#):
  - Gastrointestinal System- Ulcerative colitis
  - Liver- liver damage, abnormal fat metabolism, high cholesterol
  - Kidney- kidney cancer and chronic kidney disease
  - Cardiovascular system- pregnancy-induced hypertension
  - Immune system- decreased response to vaccines
  - Reproductive system- testicular cancer and decreased fertility
  - Endocrine system- thyroid disease
  - Development- reduced birth weight, skeletal abnormalities, altered puberty

## What levels of PFAS are considered unsafe in drinking water?

- EPA issued the following lifetime health advisory (LHA) for two types of PFAS, called PFOS and PFOA: *“To provide Americans, including the most sensitive populations, with a margin of protection from a life- time of exposure to PFOA and PFOS from drinking water, EPA established the health advisory levels at 70 parts per trillion.”* The LHA value of 70 ppt applies to PFOS and PFOA separately, and in combination with one another.
- The EPA has not yet developed guidance for additional types of PFAS compounds, some of which are thought to have human health effects similar to those of PFOS and PFOA. However, ATSDR issued the following draft [guidance](#) for four types of PFAS compounds in 2018:

ATSDR Drinking Water Screening Values		
COMPOUND	ADULT (ppt)	CHILD (ppt)
PFOA	78	21
PFOS	52	14
PFHxS	517	140
PFNA	78	21

*\* These values do not account for exposure from other sources, like dietary PFAS exposure and exposure from consumer products. They will also vary according to individual differences in body weight and water intake rates.*

- DEC previously required the provision of alternative drinking water when the sum concentration of PFOS + PFOA+ PFNA + PFHxS + PFHpA exceeded 70 ppt. However, a policy update that supersedes their previous guidelines was released on 4/10/19. DEC’s new policy states that *“DEC will use the EPA LHA (PFOS+PFOA above 0.07 µg/L) as the Action Level. Any new testing for PFAS will be for PFOS and PFOA only.”* More information on DEC’s current and former PFAS policy can be found in their [Technical Memorandum](#), dated 4/10/2019. Visit [EPHP’s FAQ’s](#) for a summary of the policies of other regulatory agencies.

## What do I do if my drinking water is contaminated with PFAS above the DEC action level?

- If the concentration of PFAS in your drinking water exceeds the DEC action level, stop drinking the water and stop using it to prepare baby formula. Do not use contaminated water to wash or cook food (boiling contaminated water does not remove PFAS). Consider finding a clean water source for pets and other animals.

## What if my water contains PFAS at concentrations that don’t exceed DEC’s current action level, but I still have concerns?

- People with concerns about these chemicals in their drinking water may want to consider taking measures to reduce their exposure from drinking water.

## How can I reduce my exposure to PFAS?

- [EPA](#) provides information on filtration options that are effective at [removing PFAS from drinking water](#) on their website, and DEC provides information on water testing [here](#).

## Where can I get more information about PFAS?

- Visit the [EPHP PFAS webpage](#) for a list of answers to Frequently Asked Questions, or call 907-269-8000
- Visit the [Alaska DEC Contaminated Sites webpage](#) to learn more about PFAS sites in Alaska, or call 907-269-7545
- [ATSDR](#) also has a list of [FAQs](#) and information on [talking to your doctor](#) about PFAS exposure on their webpage.
- The [Northwest Pediatric Environmental Health Specialty Unit \(PEHSU\)](#) is also available for clinician consultation by phone (1-877-543-2436) or email (pehsu@u.washington.edu).