

PFAS & Health Fact sheet



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Introduction

Per- and polyfluoroalkyl substances, or PFAS, are a large group of compounds, sometimes referred to as “forever chemicals” because they do not degrade in the environment (1). PFAS contain a strong carbon -to-fluorine bond, which is why they persist. Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are the most widely studied chemicals in this group of compounds (1). PFAS can be broken into two categories to help understand their environmental and health impacts—short-chain PFAS and long-chain PFAS (2). Short-chain PFAS have less than seven fluorinated carbon atoms, while long-chain PFAS have seven or more fluorinated carbon atoms and persist longer in the environment and the human body (2).

Exposure Sources

The public can be exposed to PFAS through diet, drinking water, household dust, consumer products, and contaminated air (1, 3). The highest exposures to PFAS occur among those who work in fluorochemical production processes or in industries that make products containing PFAS (1). Drinking water is the greatest source of exposure for the public when there is a specific pollution source, such as a nearby manufacturing plant (1). In the absence of a specific pollution source, diet is the primary source through food origins, packaging, and processing (1, 3). Plant- and animal-based foods, formula and baby food, and fish and seafood have all been noted as source of PFAS exposure (1, 3, 4). Consumer products that contain PFAS include textiles, outdoor clothing, cleaning products, paints, coatings, carpets, floor coverings, floor polish, leathers, cosmetics, printing inks, adhesives, ski wax, lubricants, and non-stick cookware. Aqueous Film Forming Foam (AFFF), a fire suppressant, contains high concentrations of PFAS (1, 3).

Health Risks Associated with PFAS

Cancer Health Risks

PFAS are a large category of chemicals and two have been evaluated the International Agency for Research on Cancer for carcinogenicity (1, 5). IARC classifies PFOA as carcinogenic to humans and PFOS as possibly carcinogenic to humans (1, 5). The strongest evidence for an association between PFOA exposure and human cancer risk was for cancer of the kidney and testis (1). There was also limited evidence of an association between PFOA and breast cancer (1). IARC reported suggestive and inconsistent evidence of a relationship between PFOS exposure and cancer of the testis, thyroid gland, and breast (1).

Non-Cancer Health Risks

The National Academy of Sciences (NAS) has conducted reviews on PFAS exposure and various health effects (6). The NAS found sufficient evidence of an association between PFAS exposure and decreased antibody response, dyslipidemia, decreased infant and fetal growth, and increased risk of kidney cancer in adults (6). They found limited evidence of an association between PFAS exposure and liver enzyme alterations, increased risk of pregnancy-induced hypertension, increased risk of thyroid disease and dysfunction in adults, and increased risk of ulcerative colitis in adults (6).

How are PFAS regulated?

- The EPA regulates six PFAS in public drinking water, including PFOA and PFOS. Each have maximum contaminant levels that public water supplier must stay below (7).
- PFOA and PFOS are hazardous substances under the Superfund Act, ensuring that polluters pay to clean up environmental contamination (8).
- The FDA allows some food contact products to contain PFAS, if there is demonstrated, reasonable certainty that the use causes no harm (4).

What can you do?

- Read your water source’s Community Confidence Report to learn the PFAS concentration in your drinking water.
- Activated carbon and reverse osmosis filtration will remove some PFAS from drinking water. For more information, click [here](#) (10).
- If you are on a private well, contact your state environmental health agency for a list of state-certified laboratories testing for PFAS (9).
- Avoid eating fish from PFAS contaminated waterways (9).

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