

## Reducing Exposures: Per- and Polyfluoroalkyl substances (PFAS)

PFAS are a family of chemicals that have been widely used for decades. PFAS are extremely stable and do not breakdown in the environment. PFAS have been found in the water, air and soil around the world, including Minnesota. Some PFAS can build up and stay in the human body for many years, but can also slowly decline if the exposure stops.

The health impacts we are most concerned about for people from exposure to PFAS include:

- effects on the immune system such as decreased vaccination response.
- changes in liver function such as higher cholesterol and elevated liver enzymes.
- lower birth weight.
- lifetime exposure to PFOA has also been associated with kidney cancer.

PFAS can be measured in the blood of most people around the world, including Minnesotans. For most people, consumer products that are grease, oil, stain and/or water resistant are a much greater source of PFAS exposure than drinking water. Eliminating all exposure to PFAS is unlikely; however, you can take the following steps to reduce your exposure to PFAS.

- **Limit use of consumer products that contain PFAS.** PFAS is used in many consumer products. Here is a selection of items that might contain PFAS:
  - Food packaging, including grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes, and candy wrappers.
  - Nonstick cookware.
  - Stain-resistant coatings used on carpets, upholstery, and other fabrics.
  - Water-resistant clothing.
  - Some cleaning products.
  - Some personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup).
  - Some paints, varnishes, and sealants.
- **Follow the fish consumption guidance to choose fish low in PFAS to put on your plate**—Some PFAS, predominantly PFOS, may be present in the fish people catch and eat. Fish Consumption Guidance for fish caught in areas contaminated with PFAS is available on the MDH webpage: [Fish Consumption Guidance \(https://www.health.state.mn.us/communities/environment/fish/index.html\)](https://www.health.state.mn.us/communities/environment/fish/index.html).
- **Remove household dust.** Household dust can be a significant source of PFAS exposure, especially for infants and young children. Indoor sources (e.g., consumer products, floor waxes, stain-resistant treated upholstery and carpets) contribute most to PFAS in house dust. Keeping floors and other surfaces free of dust can limit this exposure.

People can also be exposed to PFAS from consuming water high levels of PFAS above health-based guidance. Water with PFAS levels above health-based guidance is safe for bathing, showering, swimming, washing clothes, and cleaning, but should not be used for drinking or cooking. Consider the following to understand PFAS levels in water:

- **Review PFAS Findings in Public Water Systems** by visiting MDH’s [Dashboard for PFAS Testing in Drinking Water \(www.health.state.mn.us/communities/environment/water/pfasmap.html\)](https://www.health.state.mn.us/communities/environment/water/pfasmap.html) and the Minnesota Pollution Control Agency’s (MPCA) [Minnesota Groundwater Contamination Atlas -- \(www.pca.state.mn.us/about-mPCA/minnesota-groundwater-contamination-atlas\)](https://www.pca.state.mn.us/about-mPCA/minnesota-groundwater-contamination-atlas).
- **Test private well water to determine PFAS and other chemical contaminants.** Information about private drinking water well sampling is available on the MDH [PFAS and Private Wells webpage \(www.health.state.mn.us/communities/environment/water/wells/waterquality/pfas.html\)](https://www.health.state.mn.us/communities/environment/water/wells/waterquality/pfas.html) and the MPCA [Well Sampling in the East Metro Area \(https://www.pca.state.mn.us/air-water-land-climate/well-sampling-in-the-east-metro-area\)](https://www.pca.state.mn.us/air-water-land-climate/well-sampling-in-the-east-metro-area) website.
- **Consider home water treatment** if you live near a source of drinking water that is contaminated with PFAS, know there is PFAS in your drinking water, or are concerned about PFAS. Reverse osmosis and activated carbon treatment systems can reduce the levels of PFAS in drinking water. MDH provides information about inexpensive and easy-to-use systems that people can install in their home to reduce exposure to PFAS through drinking water on the following webpages:
  - [Water Treatment Using Carbon Filters: GAC Filter Information \(https://www.health.state.mn.us/communities/environment/hazardous/topics/gac.html\)](https://www.health.state.mn.us/communities/environment/hazardous/topics/gac.html).
  - [Home Water Treatment Units: Point-of-Use Devices \(https://www.health.state.mn.us/communities/environment/hazardous/topics/pfashometreat.html\)](https://www.health.state.mn.us/communities/environment/hazardous/topics/pfashometreat.html).
  - [Evaluation of Perfluorochemical Removal by a Small, Point-of-Use Filter \(PDF\) \(https://www.health.state.mn.us/communities/environment/hazardous/docs/pfas/poueval.pdf\)](https://www.health.state.mn.us/communities/environment/hazardous/docs/pfas/poueval.pdf).
- **Prepare infant formula with filtered water or bottled water if your water source has high levels of PFAS.** People who are pregnant, fetuses, and children are sensitive to accumulating PFAS in their bodies and should reduce their exposure to PFAS. If your drinking water comes from a public water system which is treating drinking water to at or below MDH health-based guidance, tap water can be used to prepare infant formula.
- **Avoid contact with foam on water surfaces.** Several things, including PFAS, can cause foam to form on the surface of water bodies. PFAS-containing foam on water surfaces does not pose a risk to human health if skin contact with foam is minor and infrequent. Wash skin that has come into contact with foam with soap and water.
- **PFAS may be present in lakes and rivers at very low levels.** MDH has determined that exposure to PFAS through swimming is not a health concern. PFAS are poorly absorbed through skin and swallowing small amounts of water while swimming will not result in significant exposure. Also, because there is little evaporation of PFAS from water into the air, exposure from breathing while swimming or bathing is not a health concern.

For more information

Minnesota Department of Health (MDH). (December 2023). Per-and Polyfluoralkyl Substances (PFAS). <https://www.health.state.mn.us/communities/environment/hazardous/topics/pfcs.html>.

MDH. (December 2023). PFAS and Health. <https://www.health.state.mn.us/communities/environment/hazardous/topics/pfashealth.html>.

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