Per- and Polyfluoroalkyl Substances

What are per- and polyfluoroalkyl substances?

Per- and polyfluoroalkyl substances (PFAS) are a large group of man-made chemicals that have been used in industry and consumer products worldwide since the 1950s. These chemicals are used to make products to resist stains, grease and water. They are used in many common products such as stain resistant carpet, clothing, non-stick cookware, and firefighting foam.

- PFAS do not occur naturally but are widespread in the environment.
- PFAS are found in people, wildlife, and fish all over the world.
- Some PFAS do not break down easily in the environment.
- Some PFAS can stay in people's bodies a long time.

The most commonly studied PFAS are perfluorooctanoic acid (PFOA or C8) and perfluorooctane sulfonic acid (PFOS).

How can I be exposed to PFAS?

PFAS can be found in the environment near areas where they are manufactured or where products containing PFAS are often used. PFAS contamination may be in drinking water, food, indoor dust, some consumer products, and workplaces. Most exposures occur through consuming contaminated food or water. Very little PFAS exposure occurs during swimming, bathing, or showering in water contaminated with PFAS because only a very small amount of PFAS can get into your body through your skin. Although some types of PFAS are no longer used, certain products such as food packaging materials, firefighting foam and stain resistant carpet treatments may still contain PFAS.

How can I reduce my exposure to PFAS?

PFAS are present at low levels in some food products and in the environment (air, water, soil etc.), so you probably cannot prevent PFAS exposure altogether. However, if you live near known sources of PFAS contamination, you can take steps to reduce your risk of exposure.

- If your drinking water contains PFAS consider using an alternative or treated water source for drinking, brushing teeth, cooking, or preparing infant formula.
- Check for fish advisories before eating fish from local water bodies https://epi.dph.ncdhhs.gov/oee/fish/advisories.html. Currently, there are no fish advisories due to PFAS in NC.
- Avoid contact with products containing PFAS. If you have questions about the products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772.
- Boiling water will NOT remove PFAS.

How can PFAS affect my health?

Whether or not you develop health problems after being exposed to PFAS depends on what and how much you are exposed to, how long you are exposed, and personal factors including age, lifestyle and how healthy you are.

The potential for health effects from PFAS in humans is still being studied. The US Centers for Disease Control and Prevention (CDC) and the NC Department of Health and Human Services (NCDHHS) are working with various partners to better understand how exposure to PFAS might affect people's health — especially how exposure to PFAS in water and food may be harmful. Although more research is needed, some studies of people have shown that certain PFAS may:

- affect growth, learning, and behavior of infants and older children;
- lower a woman's chance of getting pregnant;
- interfere with the body's natural hormones;
- increase cholesterol levels;
- affect the immune system; and,
- increase the risk of cancer.

Visit the following websites for more information:

- NCDHHS: Occupational and Environmental Epidemiology Branch: https://epi.dph.ncdhhs.gov/oee/a_z/pfas.html
- Agency for Toxic Substances and Disease Registry (ATSDR): www.atsdr.cdc.gov/pfas/index.html
- Environmental Protection Agency (EPA): www.epa.gov/chemical-research/research-and-polyfluoroalkyl-substances-pfas
- Food and Drug Administration: www.fda.gov/food/chemicals/and-polyfluoroalkyl-substances-pfas
- National Toxicology Program: https://ntp.niehs.nih.gov/pubhealth/hat/noms/pfoa/index.html

If you have concerns about health effects related to PFOA, PFOS or other chemicals, contact NCDHHS at 919-707-5900.

References

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS): Frequently Asked Questions. Agency for Toxic Substances and Disease Registry (ATSDR). October 2019.

Toxicological Profile for Perfluoroalkyls (PFAS): Agency for Toxic Substances and Disease Registry (ATSDR). October 2019.