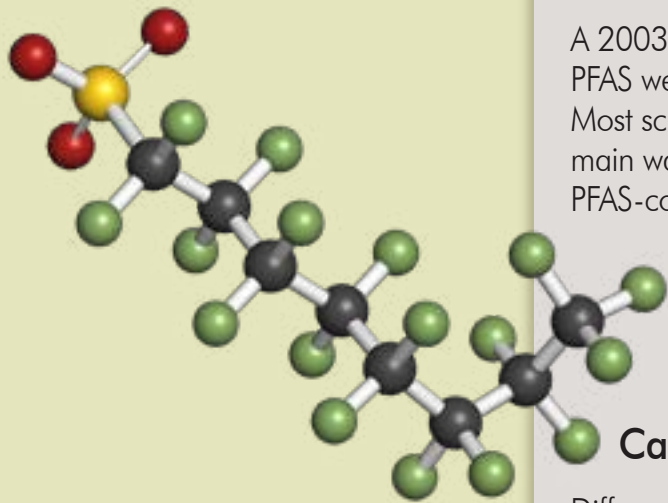


## What are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a large group of man-made chemicals used to make household products stain-resistant, waterproof and nonstick. PFAS are found in many products like carpet, upholstery, cookware, food packaging and fire-fighting foam. Although many U.S. companies have stopped using certain PFAS chemicals, they are still commonly used in foreign products imported and sold in this country.



## Contact Information

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## How do PFAS get into the environment?

PFAS are found in the environment and can be released into the air, water and soil at places where they are produced or used. PFAS in soil can seep into groundwater. Once in the environment, PFAS can remain intact for a long time.

PFAS can build up in the bodies of animals and have been found in the blood of mammals, fish and birds. Because there are many different chemicals in the PFAS family, scientists do not yet fully understand where the chemicals come from, nor how they move from one place to another.

## Can PFAS get into my body?

You may be exposed to PFAS in the air, indoor dust, food, drinking water and by using some household products.

A 2003-2004 Centers for Disease Control and Prevention study found that PFAS were present in 98% of the thousands of blood samples they studied. Most scientists believe that swallowing contaminated food and water is the main way that PFAS enter your body. For example, food that was stored in PFAS-coated packaging can become contaminated.

Scientific studies have shown that PFAS do not absorb through the skin very easily, so bathing or showering in water contaminated with PFAS is not typically a way the chemicals enter your body.

## Can PFAS cause health problems?

Different chemicals in the PFAS family may cause different health problems. Some studies have shown a relationship between PFAS chemicals in the body and a higher chance of some diseases. Certain PFAS chemicals, like Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonate (PFOS), have been studied more than others so their health effects may be better understood.

Many but not all studies in humans show that certain PFAS chemicals may harm developing fetuses and cause problems during childhood development. PFAS may also raise cholesterol, harm the immune system, change the body's natural hormone levels, lower fertility and increase cancer risks.





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## Is there a medical test to show if I have been exposed to PFAS?

Yes, PFAS chemicals can be measured in the blood. However, these tests are not common, and many doctors may not offer them because they require special equipment. Although a blood test can show whether you have been exposed to PFAS, these tests cannot show whether you will get sick or the source of your exposure.

## Are there advisories or warnings for PFAS?

On May 19, 2016, the U.S. Environmental Protection Agency (EPA) established health advisories for PFOA and PFOS in drinking water. Health advisories provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. While these health advisories are non-enforceable and non-regulatory, they do provide important technical information to state agencies and other public health officials.

EPA's health advisory level for PFOA and PFOS is a combined level of 70 parts per trillion (ppt) in drinking water, offering a margin of protection from adverse health effects throughout a person's lifetime. At this time, the



North Dakota Department of Environmental Quality (NDDEQ) does not plan to deviate from the health advisories EPA has established for PFOA and PFOS.

## Where can I get more information about PFAS?

The NDDEQ has conducted an initial study to identify potential sources of PFAS in the state. This study and other information about PFAS can be found on the NDDEQ website at:

<https://deq.nd.gov/MF/Publications.aspx?expand=DWP#DWP>

Additional PFAS educational materials can be found at:

- <https://www.epa.gov/pfas>
- <https://www.atsdr.cdc.gov/pfas/index.html>
- <https://www.fda.gov/food/chemicals/and-polyfluoroalkyl-substances-pfas>
- [https://www.cdc.gov/biomonitoring/PFAS\\_FactSheet.html](https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html)

## REFERENCES

International Journal of Environmental Research and Public Health.

Exposure to perfluorinated alkyl substances and health outcomes in children: A systematic review of the epidemiologic literature. July 2017.

U.S. Environmental Protection Agency. Basic information about per- and polyfluoroalkyl substances (PFASs). 2017.

U.S. Department of Health and Human Services, Public Health Service. Agency for Toxic Substances and Disease Registry (ATSDR). Draft toxicological profile for perfluoroalkyls. 2015.

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