

# PFAS and Sensitive Populations

## What are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals applied to many consumer goods to make them waterproof, stain resistant, or nonstick. PFAS are also used in products like cosmetics, fast food packaging, and a type of firefighting foam called aqueous film forming foam (AFFF) which are used mainly on large spills of flammable liquids, such as jet fuel.

## What is a sensitive population?

Coming into contact with chemicals (like PFAS) is called “exposure.” Most of the time, the amounts of chemicals people are exposed to is far less than the amount that can cause health problems. However, some people cannot tolerate chemical exposure as well as others. These groups of people are called “sensitive populations”.

## Who are the sensitive populations for PFAS?

### Babies and Young Children

Because babies and young children tend to explore the world around them by putting their fingers, toys, and other objects into their mouth, they are more likely to accidentally eat (ingest) PFAS dust from household goods like upholstery and carpeting than adults. Also, because babies and young children are still developing, they may be at higher risk of certain health effects from PFAS exposure.

### Fetuses

Similar to young children, unborn babies’ bodies are still developing, and they may be at higher risk of certain health effects. PFAS may pass from the mother to the fetus through the umbilical cord if the mother is exposed to PFAS while pregnant. Studies have shown that fetuses exposed to PFAS may be born at a slightly lower weight.

### Pregnant and Nursing Women

Pregnant and nursing women tend to drink more water. If the water they are drinking contains PFAS, they may be exposed to more PFAS than a woman who is not pregnant. A higher dose of PFAS makes them more at-risk of developing health conditions. Studies have shown that pregnant women exposed to PFAS may be at higher risk of pre-eclampsia and high blood pressure.

Nursing women may pass PFAS to their babies through breastmilk. It is important to remember that, according to the Centers for Disease Control and Prevention (CDC), the benefits of breastfeeding outweigh the risks of PFAS in breastmilk. Breastfeeding can reduce a baby’s risk of certain conditions like asthma, obesity, and sudden infant death syndrome (SIDS). Breastfeeding can also lower a mother’s risk of high blood pressure, type 2 diabetes, and ovarian and breast cancer.

## Immunocompromised People and People with Certain Health Conditions

Because scientists do not yet fully understand all PFAS chemicals or their health effects, there may be other sensitive populations, such as people who are immunocompromised (have weakened immune systems) or people who have certain health conditions like liver disease or certain kinds of cancer. Currently, it is not well understood whether PFAS can make certain health conditions worse.

### What are the health effects of PFAS exposure for a sensitive population?

**Being exposed to PFAS does not mean you will necessarily have health effects.**

**Whether you get sick from exposure to any chemical depends on how much you were exposed to (dose), how long you were exposed for (duration), and how often you were exposed (frequency).**

Sensitive populations are at risk of the same health effects from PFAS exposure as the average person. However, where it may take a large amount of PFAS to make the average person sick, someone in a sensitive population may get sick after being exposed to only a small amount.

Scientists are still learning about the health effects of exposures to mixtures of PFAS. Some, but not all, studies in humans with PFAS exposure have shown that certain PFAS may:

- Affect growth, learning, and behavior of infants and children;
- Lower a woman's chance of getting pregnant;
- Interfere with the body's natural hormones;
- Increase cholesterol levels;
- Affect the immune system; or
- Increase the risk of certain cancers.

### How can sensitive populations protect themselves from PFAS?

PFAS may be present in drinking water, food and many consumer products. While avoiding all exposures to all sources of PFAS may not be feasible due to the wide use of PFAS in many consumer products, following the recommendations below can help a person reduce their exposure greatly:

- Treating drinking water that contains PFAS or using an alternate source (like bottled water) for drinking, cooking, making ice, and preparing infant formula is one way to reduce exposures. See the PFAS Whole House or Point of Use Treatment Fact sheets for more information at [pfas.ohio.gov](http://pfas.ohio.gov).
- Be an informed consumer and research whether manufacturers are using PFAS in the household products you buy, especially anything labeled waterproof, non-stick and stain-resistant. Certain brands of stain-resistant carpeting and upholstery, stain-resistant or waterproof clothing, fast food packaging like pizza boxes and microwave popcorn bags, non-stick cookware and some cosmetics and personal care products are known to contain PFAS.
- To keep PFAS dust out of your home and body, clean your house and dust surfaces regularly.

### For More Information

For more information on PFAS, including the health effects of PFAS, PFAS in drinking water, water testing and treatment, and other PFAS activities in Ohio, visit the Ohio PFAS webpage at [pfas.ohio.gov](http://pfas.ohio.gov).

For more information on PFAS and your health, contact the ODH Health Assessment Section at [BEH@odh.ohio.gov](mailto:BEH@odh.ohio.gov) or at (614) 728-9452.

**Always talk with your doctor or primary care provider if you are concerned about your health or have medical questions.**