

Addressing PFAS concerns

Per- and polyfluoroalkyl substances (PFAS) are a group of many-thousand human-made chemicals that are pervasive in our environment. They are persistent, bioaccumulative, and some are associated with health effects in humans and animals. Almost every person living in the United States has some amount of PFAS in their blood, but higher levels are associated with a greater risk of certain health effects.

PFAS' effects on human health have received a lot of attention over the past several years, and your patients may ask about these chemicals. Here are some tips on listening to their concerns, assessing their risk, and helping them manage potential health issues.

Health advisory levels for 4 PFAS

In June, 2022, the U.S. Environmental Protection Agency issued lower health advisories for two PFAS in drinking water and added advisories for two others. The advisories for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) are lower than laboratories can detect, but underscore the fact that these are contaminants of emerging concern for environmental health. The health advisories each provide a margin of safety against health impacts.

- Interim advisory for PFOA = 0.004 ppt.**
- Interim advisory for PFOS = 0.02 ppt.**
- Final advisory for GenX chemicals = 10 ppt.**
- Final advisory for PFBS = 2,000 ppt.**

Vulnerable populations

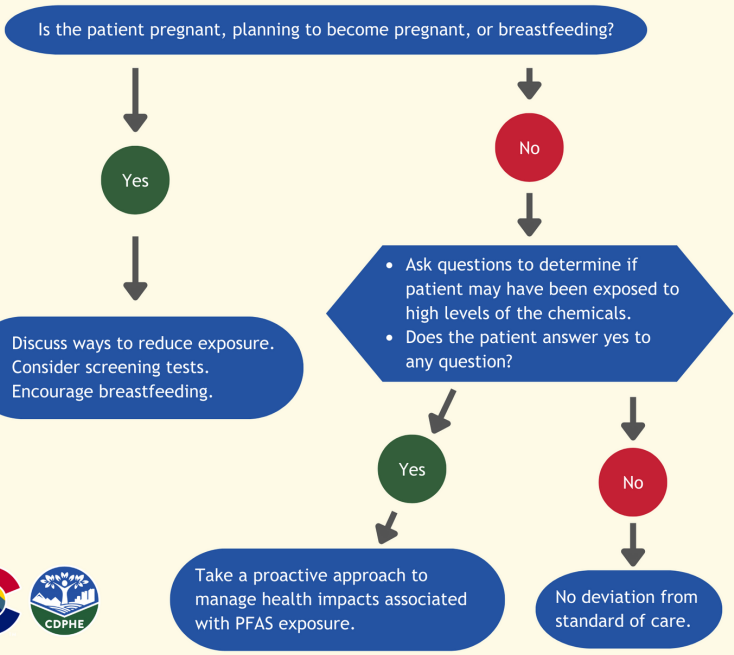
Children ages 0-5 years

People who are pregnant, planning to become pregnant, or breastfeeding

People who live in highly contaminated communities

People who have occupational exposures

For adult patients who are concerned about PFAS



Health effects of PFAS

Scientists have the most evidence about two of the chemicals, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS).

There is strong evidence that PFOA and PFOS:



- > Affect the immune system.
- > Decrease infant birth weight.
- > Impact liver function.
- > Increase cholesterol.

There is moderate evidence that PFAS are associated with:

- > Preeclampsia and high blood pressure during pregnancy.
- > Effects on thyroid hormones.

There is also increasing evidence that PFOA increases the risk for kidney and testicular cancer.



There is no recommendation for a deviation from standard of care for individuals who have not been highly impacted by PFAS; use these guidelines to assess the potential impact.

To determine if a patient might have been exposed to high levels of PFAS, ask these questions.

A yes answer to any question indicates the possibility of exposure to high levels of PFAS.

- Do you know if you live in an area that has or has had PFAS contamination?
- Do you know the level of PFAS in your drinking water? (Levels above the health advisory indicate a potential for risk.)
- Do you now or did you ever use class B aqueous film-forming foam (AFFF) for fire suppression or work in an occupation that frequently uses ski wax?
- Have you ever worked in a factory that made PFAS or used PFAS in manufacturing processes?

Take a proactive approach to managing potential health impacts associated with PFAS exposure.

Consider screening tests

- Lipid panel (cholesterol, LDL, HDL, triglycerides).
- Liver function tests.
- Serum creatinine and urine protein and urine albumin.
- Thyroid tests.
- Regular testicular examinations
- Home blood pressure monitoring during pregnancy.
- Ensure adherence to the recommended vaccination schedule, including boosters.



Discuss ways to reduce exposure

- If PFAS levels in drinking water are above the health advisory, consider treating or finding an alternate source of drinking water.
- Limit exposure to PFAS from diet by avoiding eating fish caught near areas of known contamination.
- Reduce exposure to PFAS in consumer products by checking labels for ingredients that include the words “fluoro” or “perfluoro.”

More information for patients

- Reducing your exposure: cdphe.colorado.gov/pfas-health
- Breastfeeding: bit.ly/pfas-breastfeeding
- Blood testing: bit.ly/pfas-blood
- Talking to your provider about PFAS: bit.ly/PFAS-doctor

Continuing education opportunities for providers

- PEHSU Grand Rounds: bit.ly/pehsu-pfas
- University of Cincinnati PFAS Update for Clinicians: bit.ly/uc-pfas

Pregnancy and breastfeeding



Unborn and young children are the most susceptible to health effects from PFAS, so people who are pregnant, planning to become pregnant, or breastfeeding need special consideration. Discuss how patients can learn about the risks of PFAS and reduce their exposure.

PFAS have a long half-life. Children exposed during pregnancy or lactation still may be exposed to these chemicals. However, reducing exposure will help ensure a healthier pregnancy and baby in addition to helping patients manage anxiety and stress.

PFAS pass into breastmilk, and patients may be concerned. The Centers for Disease Control and Prevention and the American Academy of Pediatrics recommend people should continue to breastfeed, even when there might be contaminants such as PFAS in their environment.

Blood testing considerations

- Results of blood testing show how the levels of PFAS in the human body compare to average levels in people’s bodies throughout the United States.
- PFAS blood levels do not indicate whether people will experience any specific health outcome, nor do they indicate next steps for treatment.
- Blood testing is expensive and may not be covered by insurance.
- Providers who want to order a test should use ICD-10 diagnosis code Z13.88. If ordering a test through Quest, use Test Code 39307 and CPT code 82542.
- Several labs in North America currently offer PFAS blood testing to individuals: AXYS Analytical, EmpowerDX, and Eurofins. AXYS and Eurofins measure PFAS in blood serum. EmpowerDX offers a home finger-prick test. These tests have the same limitations as a physician-ordered test.

Questions? Contact ToxCall

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