

NASEM GUIDANCE ON PFAS Exposure, Testing, AND CLINICAL FOLLOW-UP



PFAS Contamination

PFAS contamination is a global issue. They can be found in the air, soil, and water in even the most remote regions on the planet. It's estimated that over 95% of people living in the US have been exposed to PFAS at some point in their lives.

In the Environment

There are many ways PFAS enters the environment, such as leaking from contaminated landfills, and release from manufacturing, military, and air travel sites. Contaminated soil and water can result in contaminated food like fish, fruits, and vegetables.



In Drinking Water

Drinking water is the primary source of PFAS exposure. They can be transported through rainwater run-off that then enters lakes, ponds, and other surface water, or seeps through the soil and migrates into groundwater (underground sources of drinking water).

In Consumer Products

PFAS is used widely in manufacturing. Thousands of household products, including food packaging, are made with PFAS. These products range from water- and stain-resistant clothing to cosmetics and athletic equipment.



In the Workplace

Some occupations have an increased risk of exposure. PFAS is used in critical equipment, including uniforms, of First responders, pilots, and military members. Workers in facilities that produce PFAS or PFAS containing products fall into this category.

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Health Effects

Multiple cancers, thyroid dysfunction, changes in birthweight, and high cholesterol are linked to PFAS exposure. Research into other potential health effects is ongoing and require substantial time and resources.

Clinical Guidance

Official medical guidance is evolving as new research is published. NASEM recommends notifying your doctor if you are or are likely to have elevated PFAS exposure levels. They may recommend a blood test.



PFAS Blood Testing

The only reliable way to learn your **current** exposure levels is by having your blood tested. This can help your doctor monitor for any diseases and conditions you may be more at risk of developing. However, this cannot tell you if you will or are more likely to have a certain health outcome.

After Testing Follow-Up

In addition to creating a monitoring and/or follow-up plan, your doctor may share some more immediate ways to reduce your PFAS exposure. This can include filtering your drinking water and limiting or avoiding intake of certain local foods, like fish. NASEM provides this chart (right) to medical professionals as guidance for patient care based on their blood test results. While meant primarily for clinicians, it may help give you a sense of how your results are being interpreted and provide a sense of agency over your health.

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≥ 20 (ng/mL) PFAS*

Encourage PFAS exposure reduction if a source of exposure is identified, especially for pregnant persons.

In addition to the usual standard of care, clinicians should:

- Prioritize screening for dyslipidemia with a lipid panel (for patients over age 2) following American Academy of Pediatrics (AAP) recommendations for high-risk children and American Heart Association (AHA) guidance for high-risk adults.
- At all well visits:
 - Conduct thyroid function testing (for patients over age 18) with serum thyroid stimulating hormone (TSH).
 - Assess for signs and symptoms of kidney cancer (for patients over age 45), including with urinalysis, and
 - For patients over age 15, assess for signs and symptoms of testicular cancer and ulcerative colitis.

2 - < 20 (ng/mL) PFAS*

Encourage PFAS exposure reduction if a source has been identified, especially for pregnant persons.

Within the usual standard of care clinicians should:

- Prioritize screening for dyslipidemia with a lipid panel (once between 9 and 11 years of age, and once every 4 to 6 years over age 20) as recommended by the AAP and AHA.
- Screen for hypertensive disorders of pregnancy at all prenatal visits per the American College of Obstetricians and Gynecologists (ACOG).
- Screen for breast cancer based on clinical practice guidelines based on age and other risk factors such as those recommended by US Preventive Services Task Force (USPSTF).

< 2 (ng/mL) PFAS*

Provide usual standard of care

* Simple additive sum of MeFOSAA, PFHxS, PFOA (linear and branched isomers), PFDA, PFUnDA, PFOS (linear and branched isomers), and PFNA in serum or plasma