



PA PFAS Health Study Update



From PA PFAS Multi-site Health Study Team

WELCOME

Hello to everyone who participated in the PA PFAS Multisite Health Study.

We want to thank you for your participation and update you on the study results. We began recruiting participants in the fall of 2021, with a goal of 1,000 adults and

300 children. Your response was tremendous! We exceeded that goal by having 1,455 adults complete questionnaires and 1,251 complete their blood tests. For children, we have 125 completed questionnaires and 89 blood tests.

STUDY RESULTS

Study participants who had a clinic appointment received two sets of results.

The first is a set of clinical results processed by LabCorp which provide readings of your cholesterol level, and your kidney, liver, and thyroid health. The second set of results describes your PFAS levels. If you did not receive these results, you are encouraged to email our study lead investigator Dr. Linda Brown at lindabrown@rti.org.

Your PFAS results were presented in a table that listed your individual level and the average levels for about 5,000 participants who participated in the National Health and Nutrition Examination Survey (NHANES). This allows you to compare your levels with others in your age group around the country. The NHANES

results can be considered “background” levels that most people have in their blood from all sources combined (e.g., water, food, other environmental sources). In communities where drinking water is contaminated with PFAS, residents are more likely to have higher levels of certain kinds of PFAS in their bodies. We found this to be true in this community for PFOA, PFOS, and PFHxS for adults and PFHxS for children as summarized in the table below. You can also find your total PFAS level. It is listed below your individual results. This can be compared to [Guidelines](#) that the National Academy of Sciences, Engineering, and Medicine (NASEM) released in July 2022 to advise physicians about what high, medium, or low levels of PFAS could mean in terms of a patient’s risk for future health conditions.

PA PFAS Levels for Adults and Children in PA PFAS Health Study Compared to NHANES in ng/mL

Age Group	PFAS	Number of Participants	PA 50th Percentile	NHANES 50th Percentile	PA 95th Percentile	NHANES 95th Percentile
Adult	PFOA	1,253	2.27	1.47	6.57	3.87
	PFOS	1,253	5.90	4.70	24.10	15.1
	PFHxS	1,253	4.30	1.20	25.60	3.80
	PFNA	1,253	0.50	0.40	1.40	1.40
Child 12-17	PFOA	48	1.27	1.17	3.37	2.34
	PFOS	48	2.09	2.60	7.00	7.30
	PFHxS	48	1.70	0.80	6.60	3.40
	PFNA	48	0.20	0.40	0.90	1.20
Child 4-11	PFOA	41	1.67	1.94	3.27	3.84
	PFOS	41	2.30	2.65	8.40	8.41
	PFHxS	41	1.80	0.85	4.90	4.14
	PFNA	41	0.30	0.75	1.30	3.19

NEXT STEPS

You should keep your PFAS results as a record of your exposure and take them to your physician along with your clinical results if you are concerned about your health. All physician offices in Pennsylvania were notified in November 2022 about PFAS exposure through the Health Alert Network (HAN). As PFAS contamination is eliminated or reduced in your drinking water, your PFAS levels will decrease naturally over time. There is no medically recognized method of reducing the PFAS levels in your body. Resources to share with your physician: [ATSDR PFAS Physician Fact Sheet](#), [PFAS REACH - Physician Information](#), [PFAS REACH - Community Information](#), [PA DOH Health Alert Network - PFAS](#).

The table below provides the PFAS levels for the different NASEM categories and their physician recommendations. We've included the number of adults and children in our study that fall into each category.

Clinical guidance for follow-up with patients after PFAS testing¹

Total PFAS Level and Clinical Follow-up Recommendation	PA Adults	PA Children
>20 (ng/mL) PFAS*	High Exposure	High Exposure
<p>Encourage PFAS exposure reduction if a source of exposure is identified, especially for pregnant persons.</p> <p><i>In addition to the usual standard of care, clinicians should:</i></p> <ul style="list-style-type: none"> • Prioritize screening for dyslipidemia with a lipid panel (for patients over age 2) following guidelines for high-risk children and adults <p>At all well visits:</p> <ul style="list-style-type: none"> • 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 • For patients over age 15, assess for signs and symptoms of testicular cancer and ulcerative colitis 	<p>379 out of 1,253 adults = 30.2%</p>	<p>4 out of 89 children = 4.5%</p>
2-<20 (ng/mL) PFAS	Moderate Exposure	Moderate Exposure
<p>Encourage PFAS exposure reduction if a source has been identified, especially for pregnant persons.</p> <p><i>Within the usual standard of care clinicians should:</i></p> <ul style="list-style-type: none"> • 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) • Screen for hypertension disorders of pregnancy at all prenatal visits • Screen for breast cancer based on clinical practice guidelines based on age and other risk factors 	<p>863 out of 1,253 adults = 68.9%</p>	<p>84 out of 89 children = 94.4%</p>
<2 (ng/mL) PFAS*	Low Exposure	Low Exposure
Provide usual standard of care	<p>11 out of 1,253 adults = 0.9%</p>	<p>1 out of 89 children = 1.1%</p>

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

¹Adapted from: National Academies of Sciences, Engineering, and Medicine. 2022. Guidance on PFAS Exposure, Testing, and Clinical Follow-Up. Washington, DC: The National Academies Press. <https://doi.org/10.17226/26156>.

Watch for additional information in future newsletters.