



PFAS Exposure Blood Test Guide

Learn more about your PFAS exposure from the comfort of home

What are PFAS?

Per- and Polyfluorinated Alkyl Substances (PFAS), such as PFOA and PFOS, are “forever chemicals” that resist natural breakdown in both our environment and our bodies.

These chemicals were created intentionally to resist heat, stains, oil, and water. They can be found in Aqueous Film Forming Foam (AFFF) firefighting products and a variety of consumer products. These include food packaging, carpet, clothes, cosmetics, cookware, and cleaning products.

PFAS can also be found in your surrounding environment: soil, air, drinking water, and ground water. Exposure to PFAS is linked to cancer, thyroid disease, immune suppression, elevated cholesterol, respiratory disease, and decreased fertility [1].

What do my lab values mean?

Nearly all Americans have PFAS in their blood due to their persistence in the body and the environment. Your results, combined with the information provided in our test guide, will tell you if your exposures are at, below, or above the average American's exposure levels. This is an environmental exposure test used for research purposes only.

Biomonitoring for PFAS in humans has been conducted by the Centers for Disease Control and Prevention (CDC) on serum for many years. The CDC publishes and updates national averages for this serum data based on the National Health and Nutrition Examination Survey (NHANES). This is where the national averages are generated from. To date, the CDC only monitors for 16 PFAS compounds in the general population.

Serum Equivalent Your results are based on the newest technology for whole blood. The serum equivalent is the conversion from whole blood to serum to allow you to compare your results to the national averages generated by the CDC. Of the PFAS analytes tested and shown in your lab report, 7 of these analytes have a serum equivalent. These comparisons have been provided in this test guide as individual pages.

Below are some key terms to help you better understand your lab results:

Analyte = name of the specific PFAS tested

Result = a number reported means that the lab was able to detect the specific PFAS tested in your blood

ND (not detected) = the specific PFAS tested might not be there at all, or it could be present at such a low level that the lab could not reliably measure it

Reporting Limit (RL) = represents the lowest amount of that specific PFAS that the lab can reliably measure in blood samples

Units = the reported units of ng/mL is the same as ppt (parts per trillion)

Is there a safe level of exposure for these chemicals?

Because PFAS are persistent in the body and the environment, almost all Americans have PFAS in their blood. Safe exposure levels are being developed for certain PFAS chemicals. With the establishment of these levels, the Environmental Protection Agency (EPA) and several states have begun the process of regulating PFAS in drinking water. The establishment of toxicity levels is still in progress and there are no current clinical diagnoses or treatment recommendations specific to elevated PFAS levels.

What can I do if PFAS are present in my body?

Although there are currently no treatment recommendations specific to elevated PFAS levels, you can still make an impact on your health. The following recommendations may help limit and reduce your exposure to PFAS chemicals:

- Reduce your use of consumer products associated with PFAS chemicals:
 - Water repellent clothing, furniture, flooring
 - Stain resistant clothing, furniture, carpeting
 - Cleaning products with similar water repellent or stain resistant properties
 - Fast food and take-out food wrappers or containers
 - Non-stick cookware
 - Paints, varnishes, and sealants
 - Personal care products – shampoo, dental floss, nail polish, waterproof eye makeup and cosmetics
- Avoid contaminated drinking water and water used for food preparation. Check with your local health department about your water quality.
- Avoid eating contaminated fish. Check with your local health and environmental quality departments for fish advisories.

We always recommend you review lab results with a healthcare provider to ensure your unique health issues are considered.

What if **Total PFOA** is detected in my blood?

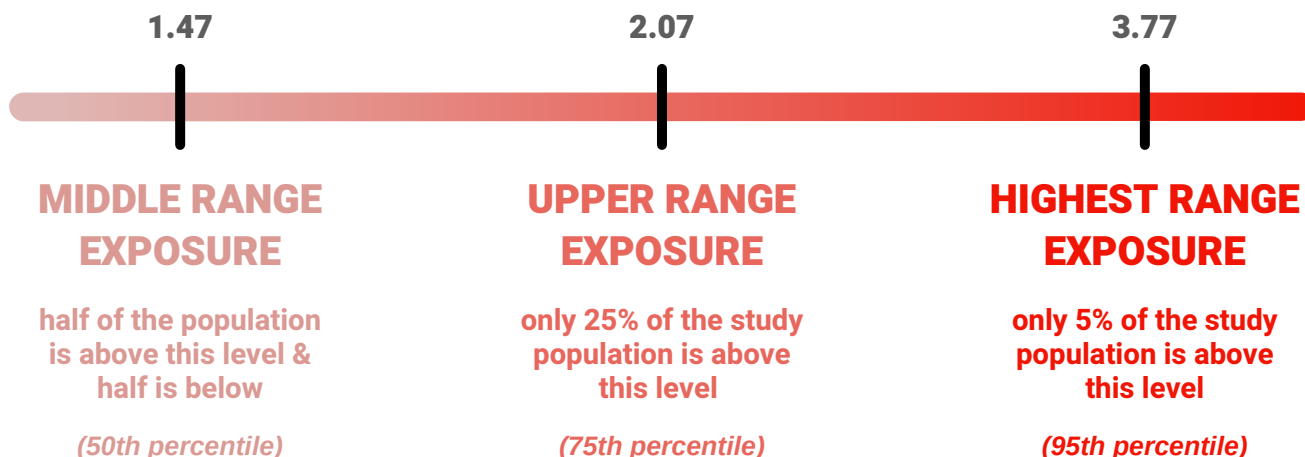
If your Total PFOA is marked as "red" on your lab report, then our lab detected it in your blood sample. Find the "Serum" column, and write your Serum Equivalent Value here for reference: _____.

Sample Report	Analyte	Result	Reporting Limit	Serum Equivalent	Unit
	Total PFOA	XX.XX	XX.XX	XX.XX	

Percentile of the total US population with **Total PFOA** in their bloodstream

It's estimated that 98% of the US population has detectable levels of PFAS forever chemicals in their blood. Where do you fall for PFOA? Find your lab report "serum equivalent value" and compare with the CDC's NHANES 2017-2018 data below.

It is important to note PFOA is a foreign substance and there is no 'normal range' for detectable levels in human blood. Higher levels of PFAS are associated with several health conditions.



Total PFOS

CDC Name: Serum Perfluorooctane sulfonic acid (PFOS)

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What if **Total PFOS** is detected in my blood?

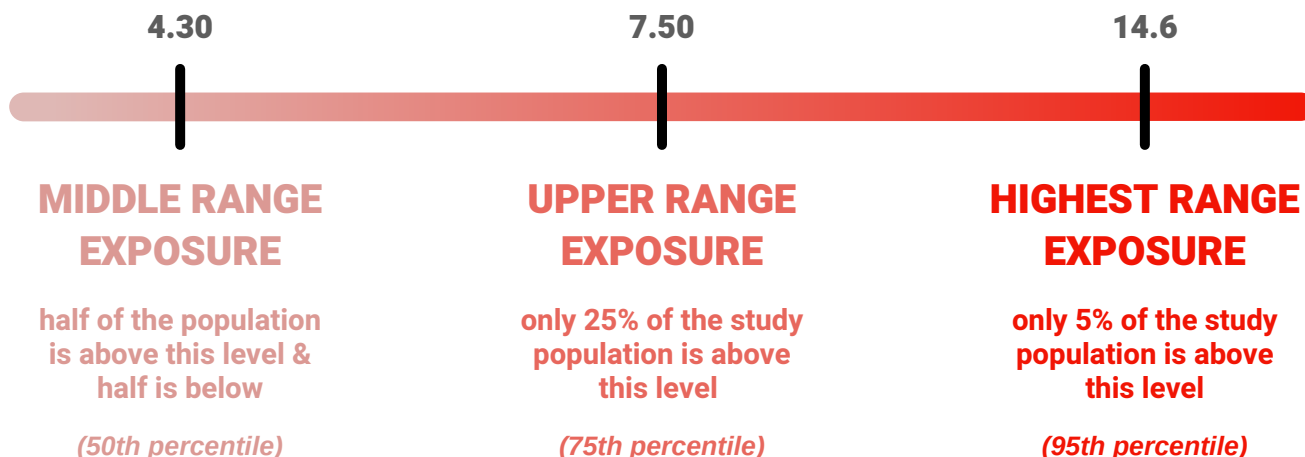
If your Total PFOS is marked as "red" on your lab report, then our lab detected it in your blood sample. Find the "Serum" column, and write your Serum Equivalent Value here for reference: _____.

Sample Report	Analyte	Result	Reporting Limit	Serum Equivalent	Unit
	Total PFOS	XX.XX	XX.XX	XX.XX	ng/mL

Percentile of the total US population with **Total PFOS** in their bloodstream

It's estimated that 98% of the US population has detectable levels of PFAS forever chemicals in their blood. Where do you fall for PFOS? Find your lab report "serum equivalent value" and compare with the CDC's NHANES 2017-2018 data below.

It is important to note PFOS is a foreign substance and there is no 'normal range' for detectable levels in human blood. Higher levels of PFAS are associated with several health conditions.



Perfluorodecanoic acid (PFDA)

CDC Name: Serum Perfluorodecanoic acid (PFDA)

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What if **PFDA** is detected in my blood?

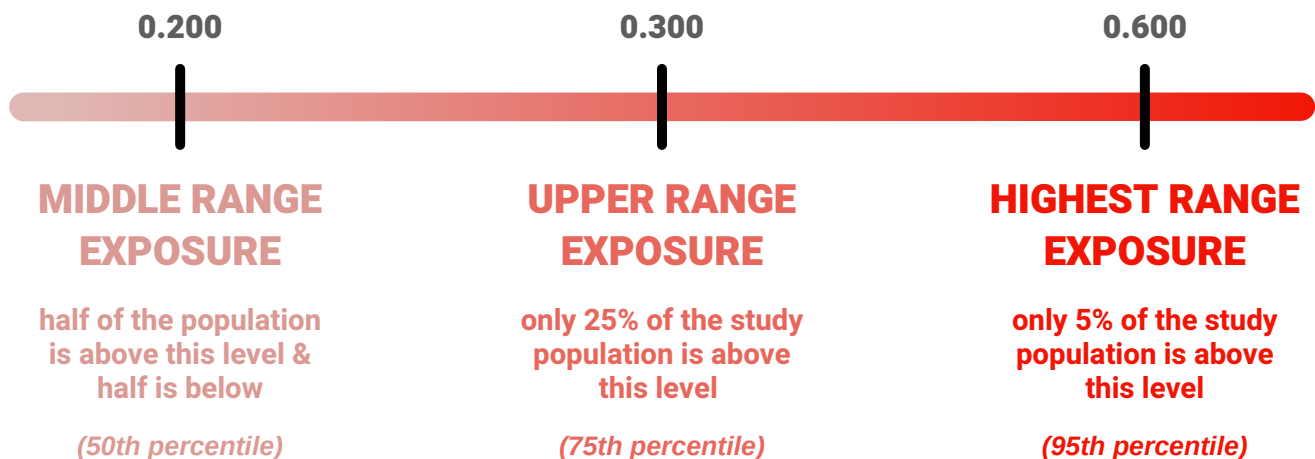
If your PFDA is marked as "red" on your lab report, then our lab detected it in your blood sample. Find the "Serum" column, and write your Serum Equivalent Value here for reference: _____.

Sample Report	Analyte	Result	Reporting Limit	Serum Equivalent	Unit
	PFDA	XX.XX	XX.XX	XX.XX	ng/mL

Percentile of the total US population with **PFDA** in their bloodstream

It's estimated that 98% of the US population has detectable levels of PFAS forever chemicals in their blood. Where do you fall for PFDA? Find your lab report "serum equivalent value" and compare with the CDC's NHANES 2017-2018 data below.

It is important to note PFDA is a foreign substance and there is no 'normal range' for detectable levels in human blood. Higher levels of PFAS are associated with several health conditions.



Perfluoroheptanesulfonic Acid (PFHpS)

CDC Name: Serum Perfluoroheptane sulfonic acid (PFHpS)

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What if **PFHpS** is detected in my blood?

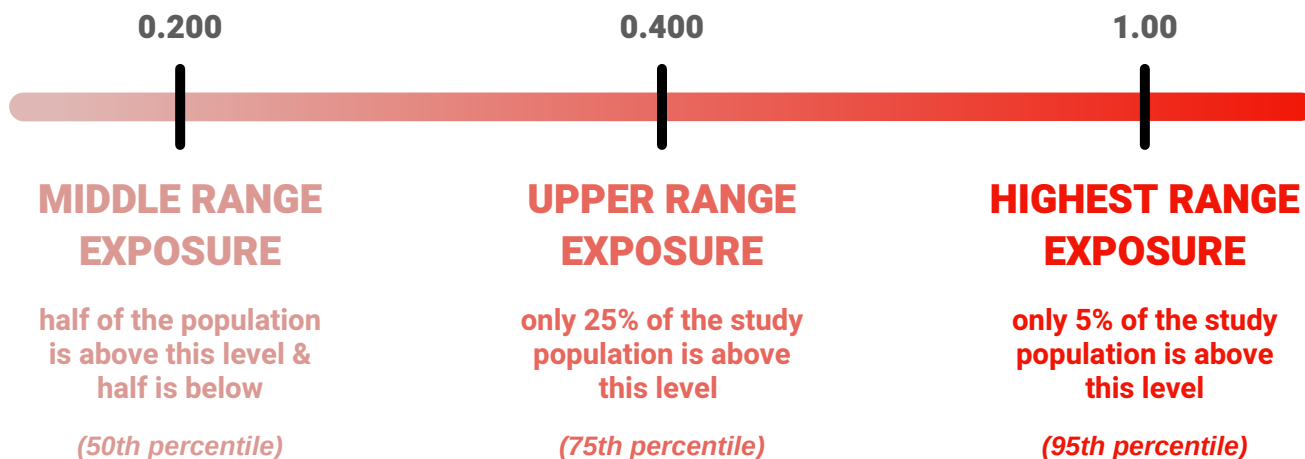
If your PFHpS is marked as "red" on your lab report, then our lab detected it in your blood sample. Find the "Serum" column, and write your Serum Equivalent Value here for reference: _____.

Sample Report	Analyte	Result	Reporting Limit	Serum Equivalent	Unit
	PFHpS	XX.XX	XX.XX	XX.XX	ng/mL

Percentile of the total US population with **PFHpS** in their bloodstream

It's estimated that 98% of the US population has detectable levels of PFAS forever chemicals in their blood. Where do you fall for PFHpS? Find your lab report "serum equivalent value" and compare with the CDC's NHANES 2017-2018 data below.

It is important to note PFHpS is a foreign substance and there is no 'normal range' for detectable levels in human blood. Higher levels of PFAS are associated with several health conditions.



Perfluorohexanesulfonic acid (PFHxS)

CDC Name: Serum Perfluorohexane sulfonic acid (PFHxS)

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What if **PFHxS** is detected in my blood?

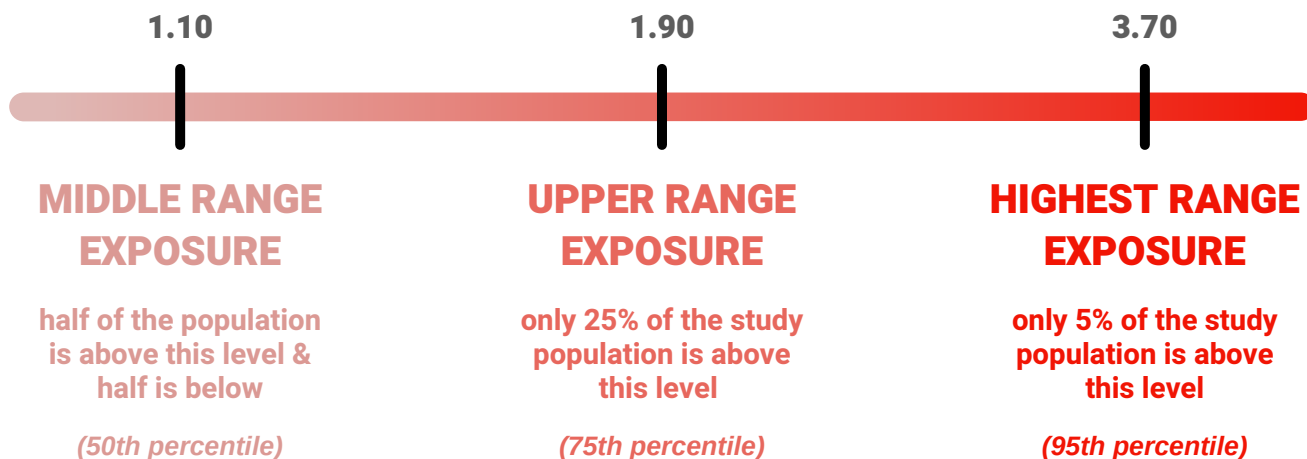
If your PFHxS is marked as "red" on your lab report, then our lab detected it in your blood sample. Find the "Serum" column, and write your Serum Equivalent Value here for reference: _____.

Sample Report	Analyte	Result	Reporting Limit	Serum Equivalent	Unit
	PFHxS	XX.XX	XX.XX	XX.XX	ng/mL

Percentile of the total US population with **PFHxS** in their bloodstream

It's estimated that 98% of the US population has detectable levels of PFAS forever chemicals in their blood. Where do you fall for PFHxS? Find your lab report "serum equivalent value" and compare with the CDC's NHANES 2017-2018 data below.

It is important to note PFHxS is a foreign substance and there is no 'normal range' for detectable levels in human blood. Higher levels of PFAS are associated with several health conditions.



What if **PFNA** is detected in my blood?

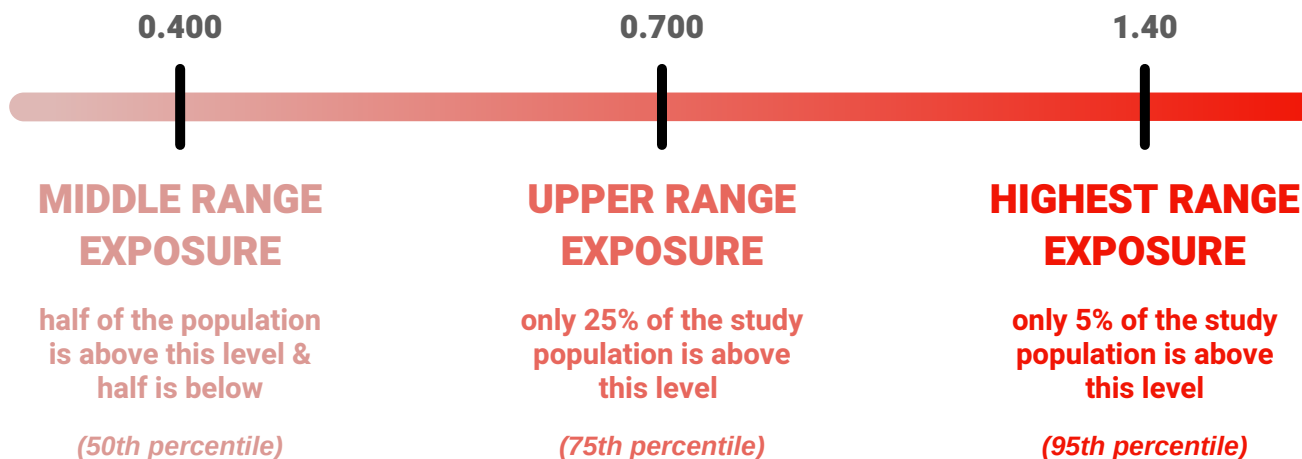
If your PFNA is marked as "red" on your lab report, then our lab detected it in your blood sample. Find the "Serum" column, and write your Serum Equivalent Value here for reference: _____.

Sample Report	Analyte	Result	Reporting Limit	Serum Equivalent	Unit
	PFNA	XX.XX	XX.XX	XX.XX	ng/mL

Percentile of the total US population with **PFNA** in their bloodstream

It's estimated that 98% of the US population has detectable levels of PFAS forever chemicals in their blood. Where do you fall for PFNA? Find your lab report "serum equivalent value" and compare with the CDC's NHANES 2017-2018 data below.

It is important to note PFNA is a foreign substance and there is no 'normal range' for detectable levels in human blood. Higher levels of PFAS are associated with several health conditions.



Perfluoroundecanoic acid (PFUnA)

CDC Name: Serum Perfluoroundecanoic acid (PUFA or PFUnDA)

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What if **PFUnA** is detected in my blood?

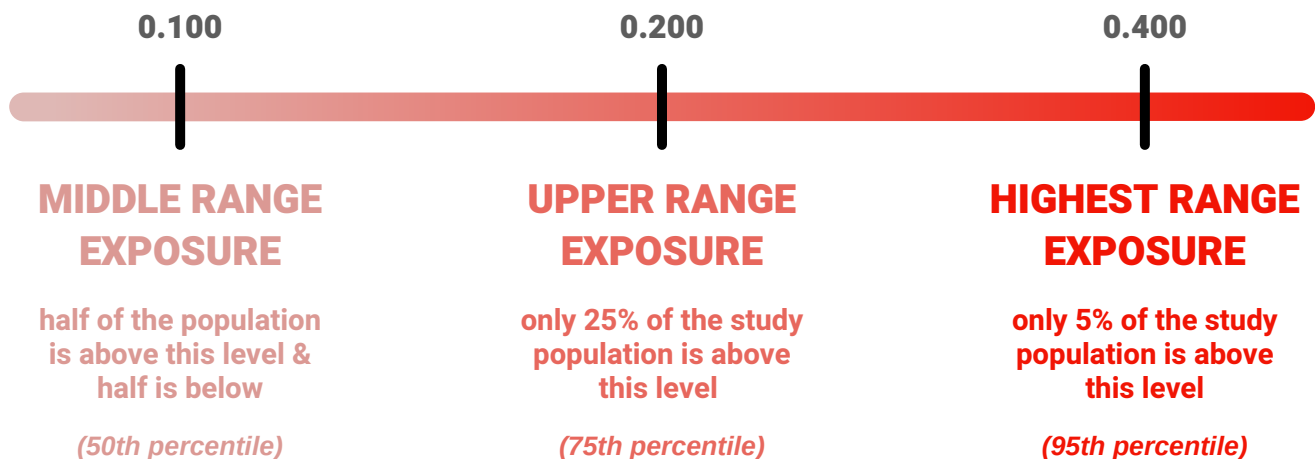
If your PFUnA is marked as "red" on your lab report, then our lab detected it in your blood sample. Find the "Serum" column, and write your Serum Equivalent Value here for reference: _____.

Sample Report	Analyte	Result	Reporting Limit	Serum Equivalent	Unit
	PFUnA	XX.XX	XX.XX	XX.XX	ng/mL

Percentile of the total US population with **PFUnA** in their bloodstream

It's estimated that 98% of the US population has detectable levels of PFAS forever chemicals in their blood. Where do you fall for PFUnA? Find your lab report "serum equivalent value" and compare with the CDC's NHANES 2017-2018 data below.

It is important to note PFUnA is a foreign substance and there is no 'normal range' for detectable levels in human blood. Higher levels of PFAS are associated with several health conditions.



Sources

[1] "Potential Health Effects of PFAS Chemicals." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 24 June 2020, www.atsdr.cdc.gov/pfas/health-effects/index.html.

Additional Resources

[View additional resources](#) regarding sources of exposure and ways to minimize your risk.

empowerDX lab results are intended for informational and educational purposes only, with the exception of infectious disease testing which is diagnostic. Information from empowerDX is not meant to serve as treatment advice or treatment recommendation for any health condition. We strongly recommend you review lab results with your physician.