# PFAS CHEMICALS DEMO

Name: PFAS CHEMICALS DEMO
Date of Birth: 01-01-1111
Gender: Male
Age: 01
Height:
Weight:
Fasting: FASTING

Telephone: 000-000-0000
Street Address:
Email:

**FINAL REPORT**

**Accession ID: 2308190002**

## Provider Information

Practice Name: DEMO CLIENT, MD
Provider Name: DEMO CLIENT, MD
Phlebotomist: 0

Telephone: 000-000-0000
Address: 3521 Leonard Ct, Santa Clara, CA 95054

## Report Information

Current Result | Previous Result | In Control | Moderate | Risk

## Specimen Information

| Sample Type | Collection Time | Received Time | Report | Final Report Date |
|---|---|---|---|---|
| Metal Free Urine | 2023-08-31 06:30 (PDT) | 2023-09-01 15:45 (PDT) | PFAS Chemicals - P2 | 2023-09-13 12:04 (PDT) |



VibrantWellness
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# PFAS Chemicals

## INTRODUCTION

Vibrant Wellness is pleased to present to you, 'PFAS chemicals panel', to help you make healthy lifestyle, dietary and treatment choices in consultation with your healthcare provider. It is intended to be used as a tool to encourage a general state of health and well-being.The PFAS chemicals Panel is a test to measure the levels of PFAS chemicals present in your urine. The panel is sub-grouped into Pesticides, Phthalates, Parabens, Acrylic, Alkyl phenols and Volatile Organic Compounds. Reference ranges for tests flagged with ^ were determined based on NHANES data (cdc.gov/nhanes) if available and other reference ranges are established based on urine samples from 1000 apparently healthy individuals.

## Methodology:

The Vibrant PFAS Chemicals panel uses tandem mass spectrometry methodology (LC-MS/MS) for quantitative detection of PFAS in urine samples. Urine creatinine is measured using a kinetic colorimetric assay based on the Jaffé method. All PFAS chemicals are reported as the quantitative result normalized to urine creatinine to account for urine dilution variations.

## Interpretation of Report:

The report begins with the summary page which lists only the PFAS chemicals whose levels are >95th percentile (Red) and 75th-95th percentile (Yellow) of reference range, normalized to Urine creatinine levels. Additionally, the previous value is also indicated for your referral (if available). Following this section is the complete list of the PFAS chemicals and their absolute levels normalized to Creatinine in a quartile format along with the reference ranges. These levels are shown with three shades of color — Green, Yellow and Red. The result in green corresponds to 0 to 75th percentile, the result in yellow corresponds to 75th to 95th percentile and the result in red corresponds to greater than 95th percentile of reference range. All content provided in the report is purely for informational purposes only and should not be considered medical advice. Any changes based on the information should be made in consultation with your healthcare provider.

The Vibrant Wellness platform provides tools for you to track and analyze your general wellness profile. Testing for the PFAS chemicals panel is performed by Vibrant America, a CLIA certified lab CLIA#: 05D2078809. Vibrant Wellness provides and makes available this report and any related services pursuant to the Terms of Use Agreement (the "Terms") on its website at www.vibrant-wellness.com. By accessing, browsing, or otherwise using the report or website or any services, you acknowledge that you have read, understood, and agree to be bound by these terms. If you do not agree to these terms, you shall not access, browse, or use the report or website. The statements in this report have not been evaluated by the Food and Drug Administration and are only meant to be lifestyle choices for potential risk mitigation. Please consult your healthcare provider for medication, treatment, or lifestyle management. This product is not intended to diagnose, treat, or cure any disease.

### Please note:

Pediatric ranges have not been established for this test. It is important that you discuss any modifications to your diet, exercise, and nutritional supplementation with your healthcare provider before making any changes.

# PFAS Chemicals - Summary

## PFAS

| Test Name | Current | Previous | Result (75th / 95th) | Reference |
|---|---|---|---|---|
| GenX/HPFO-DA (ug/g) | 3.854 | | 1.045 / 6.689 | ≤6.689 |

**POSSIBLE SOURCES**

Contaminated water, Firefighting foam

**ASSOCIATED RISK**

Longer exposure GenX tends to cause regenerative anemia, cardiovascular diseases and also prone to cause liver injury. GenX shows thyroid disrupting effects in humans which can cause epigenetic alterations. Epigenetic modification is one of the hallmarks of ageing. Therefore, GenX can lead to age associated conditions in individuals. Sources of exposure: Contaminated water, Firefighting foam.

**DETOX SUGGESTIONS**

Detoxification of GenX involves minimizing exposure by avoiding contaminated water and food, utilizing air purification, and supporting natural detox processes with hydration, antioxidant-rich diet, and exercise. Chelation therapy may be considered under medical supervision for elevated GenX levels, but further research is needed for optimal detox strategies

| Test Name | Current | Previous | Result (75th / 95th) | Reference |
|---|---|---|---|---|
| Perfluorobutanoic acid (PFBA) (ug/g) | 0.094 | | 0.066 / 0.113 | ≤0.113 |

**POSSIBLE SOURCES**

Working in chemicals manufacturing and processing, Contaminated soil, Contaminated water, Personal care products, Cosmetics, Grease-resistant paper, Fast food containers or wrappers, Microwave popcorn bags.

**ASSOCIATED RISK**

Exposure to PFBA can cause peroxisome proliferation, peroxisomal fatty acid oxidation induction, and hepatomegaly. PFBA has the potential to generate oxidative stress and thereby induce DNA damage causing genomic instability. As genomic stability is the hallmark of ageing PFBA can cause age associated conditions.

**DETOX SUGGESTIONS**

To detoxify PFBA, individuals should prioritize reducing exposure by avoiding contaminated water, food, and products containing perfluorinated compounds. Implementing air filtration systems can help minimize inhalation exposure. Supporting the body's natural detoxification mechanisms through adequate hydration, a balanced diet, and regular exercise may assist in eliminating PFBA.

| Test Name | Current | Previous | Result (75th / 95th) | Reference |
|---|---|---|---|---|
| Perfluorododecanoic acid (PFDoA) (ug/g) | 1.167 | | 0.54 / 1.769 | ≤1.769 |

**POSSIBLE SOURCES**

Contaminated drinking water, furniture, carpets. Food packaging.

**ASSOCIATED RISK**

PFDoA has the potential to cause a disruption in the thyroid hormone system homeostasis. PFDoA has an endocrine-disrupting potential by interfering with thyroid hormone (TH) and aryl hydrocarbon receptor (AhR) functions, which need to be taken into consideration when assessing the impact on human health. These key events cause epigenetic modifications, which are the hallmark of aging. As a result, PFDoA toxicity is a causative agent for age-related conditions.

**DETOX SUGGESTIONS**

To detoxify PFDoA, individuals should aim to limit exposure by avoiding contaminated water, food, and products containing perfluorinated compounds. Utilizing air filtration systems can help reduce inhalation exposure. Supporting the body's natural detoxification mechanisms through hydration, a nutrient-rich diet, and regular physical activity may aid in eliminating PFDoA.

# PFAS Chemicals - Summary

## PFAS

| Test Name | Current | Previous | Result (75th / 95th) | Reference |
|---|---|---|---|---|
| Perfluorohexanoic acid (PFHxA) (ug/g) | 0.039 | | 0.01 / 0.156 | ≤0.156 |

### POSSIBLE SOURCES

Contaminated soil, water, air, agricultural crops, household dust, stain-resistant fabrics, paper food packaging, carpets.

### ASSOCIATED RISK

PFHxA exhibits a well-documented persistence in the environment, and its presence has been linked to potential associations with Gilbert Syndrome, a mild genetic liver disorder characterized by the impaired processing of bilirubin within the body. It is important to note that perfluorinated compounds like PFHxA are generally not considered to be acutely toxic at the cellular level.

### DETOX SUGGESTIONS

Detoxification of PFHxA involves reducing exposure by avoiding contaminated water, food, and consumer products, as well as implementing air filtration in polluted areas. Additionally, supporting the body's natural detoxification processes through hydration, a nutrient-rich diet, and regular exercise may aid in eliminating PFHxA. However, specific detox methods tailored to PFHxA are still under investigation, necessitating further research for effective strategies.

| Test Name | Current | Previous | Result (75th / 95th) | Reference |
|---|---|---|---|---|
| Perfluorooctanoic acid (PFOA) (ug/g) | 0.990 | | 0.568 / 2.205 | ≤2.205 |

### POSSIBLE SOURCES

Sources of exposure to perfluorooctanoic acid (PFOA) include contaminated drinking water, non-stick cookware, kitchen utensils, sealants, tapes, waterproof textiles, dental floss, leather goods, upholstered furniture, carpets, and rugs. Groundwater contamination can occur near sewage treatment plants, industrial sites, landfills, and locations where PFOA is used in firefighting foam. Additionally, fish and shellfish can accumulate PFOA from contaminated water, potentially impacting the food chain.

### ASSOCIATED RISK

PFOA is a suspected endocrine disruptor and a common environmental pollutant. PFOA exposure may lead to a variety of adverse effects, including hepatotoxicity, immunotoxicity, and developmental toxicity. PFOA can stimulate cell migration and invasion, showing its potential to induce neoplastic transformation of human breast epithelial cells. Symptoms of PFOA are likely to be conditions like thyroid disease, high cholesterol, ulcerative colitis, pregnancy-induced hypertension, changes in liver function and reduced immune response. Severity of PFOA exposure can lead to cancers especially kidney, testicular, and thyroid cancer .

### DETOX SUGGESTIONS

Regular administration of cholestyramine (CSM) resulted in the gastrointestinal elimination of different PFAS, including PFOA leading to a subsequent decrease in serum levels of all PFAS. However, additional investigation is necessary to grasp thoroughly the efficacy and safety of utilizing CSM therapy for detoxifying PFAS.

# PFAS Chemicals - Summary

## PFAS

| Test Name | Current | Previous | Result | Reference |
|---|---|---|---|---|
| Perfluoropentanoic acid (PFPeA) (ug/g) | 0.692 | | 75th 95th; 0.193 0.731 | ≤0.731 |

### POSSIBLE SOURCES

Contaminated water, fire-fighting foam, stain repellents, paints, and coatings.

### ASSOCIATED RISK

PFPeA can cause serious health effects, including cancer, endocrine disruption, accelerated puberty, liver dysfunction, immune system damage, and thyroid changes. Further, it shows thyroid disrupting effects in humans which can cause epigentic alterations. Epigenetic modification is one of the hallmarks of ageing. Therefore, PFPeA can lead to age associated conditions in individuals.

### DETOX SUGGESTIONS

Detoxification of PFPeA entails minimizing exposure by avoiding contaminated water and food sources, employing air purification, and supporting natural detoxification with hydration, a balanced diet, and exercise. Chelation therapy may be considered under medical supervision for individuals with elevated PFPeA levels.

## Creatinine

| Test Name | Current | Previous | Result | Reference |
|---|---|---|---|---|
| Urine Creatinine (mg/mL) | 0.74 | | 0 0.24 2.16 | 0.25-2.16 |

Patient Name: DEMO DEMO
Date of Birth: 01-01-1111 Accession ID: 2308190002
Service Date: 2023-09-01 15:45 (PDT)

# PFAS Chemicals

## PFAS

| Test Name | Current | Previous | Result (75th / 95th) | Reference |
|---|---|---|---|---|
| GenX/HPFO-DA (ug/g) | 3.854 | | 1.045 / 6.689 | ≤6.689 |
| 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (ug/g) | 0.155 | | 0.472 / 2.75 | ≤2.75 |
| Dodecafluoro-3H-4,8-dioxanoate (NaDONA) (ug/g) | <0.005 | | 0.372 / 1.916 | ≤1.916 |
| Perfluoro-[1,2-13C2] octanoic acid (M2PFOA) (ug/g) | <0.005 | | 0.45 / 2.054 | ≤2.054 |
| Perfluoro-1-[1,2,3,4-13C4] octanesulfonic acid (ug/g) | 0.035 | | 0.645 / 2.68 | ≤2.68 |
| Perfluoro-1-heptane sulfonic acid (PFHpS) (ug/g) | 0.068 | | 0.628 / 3.783 | ≤3.783 |
| Perfluoro-n-[1,2-13C2] decanoic acid (MPFDA) (ug/g) | <0.005 | | 0.94 / 2.907 | ≤2.907 |
| Perfluoro-n-[1,2-13C2] hexanoic acid (ug/g) | 0.007 | | 0.091 / 0.325 | ≤0.325 |
| Perfluorobutanoic acid (PFBA) (ug/g) | 0.094 | | 0.066 / 0.113 | ≤0.113 |
| Perfluorodecanoic acid (PFDeA) (ug/g) | 0.126 | | 0.696 / 2.399 | ≤2.399 |
| Perfluorododecanoic acid (PFDoA) (ug/g) | 1.167 | | 0.54 / 1.769 | ≤1.769 |
| Perfluoroheptanoic acid (PFHpA) (ug/g) | 0.014 | | 0.106 / 0.142 | ≤0.142 |
| Perfluorohexane Sulfonic Acid (PFHxS) (ug/g) | 0.096 | | 0.113 / 1.681 | ≤1.681 |
| Perfluorohexanoic acid (PFHxA) (ug/g) | 0.039 | | 0.01 / 0.156 | ≤0.156 |
| Perfluorononanoic acid (PFNA) (ug/g) | 0.185 | | 0.652 / 1.31 | ≤1.31 |
| Perfluorooctane sulfonic acid (PFOS) (ug/g) | 0.053 | | 0.658 / 3.215 | ≤3.215 |
| Perfluorooctanoic acid (PFOA) (ug/g) | 0.990 | | 0.568 / 2.205 | ≤2.205 |
| Perfluoropentanoic acid (PFPeA) (ug/g) | 0.692 | | 0.193 / 0.731 | ≤0.731 |
| Perfluorotetradecanoic acid (PFTeDA) (ug/g) | 0.811 | | 1.478 / 4.912 | ≤4.912 |
| Perfluorotridecanoic acid (PFTrDA) (ug/g) | 0.186 | | 1.263 / 3.96 | ≤3.96 |
| Perfluoroundecanoic acid (PFUnA) (ug/g) | 0.349 | | 0.695 / 1.267 | ≤1.267 |

# PFAS Chemicals

## Risk and Limitations

This test has been developed and its performance characteristics determined and validated by Vibrant America LLC., a CLIA certified lab. These assays have not been cleared or approved by the U.S. Food and Drug Administration. Vibrant Wellness provides additional contextual information on these tests and provides the report in more descriptive fashion.

PFAS chemicals panel does not demonstrate absolute positive and negative predictive values for any condition. Its clinical utility has not been fully established. Clinical history and current symptoms of the individual must be considered by the healthcare provider prior to any interventions. Test results should be used as one component of a healthcare provider's clinical assessment.

PFAS chemicals panel testing is performed at Vibrant America, a CLIA certified laboratory. Vibrant America has effective procedures in place to protect against technical and operational problems. However, such problems may still occur. Examples include failure to obtain the result for a specific test due to circumstances beyond Vibrant's control. Vibrant may re-test a sample to obtain these results but upon re-testing the results may still not be obtained. As with all medical laboratory testing, there is a small chance that the laboratory could report incorrect results. A tested individual may wish to pursue further testing to verify any results.

The information in this report is intended for educational purposes only. While every attempt has been made to provide current and accurate information, neither the author nor the publisher can be held accountable for any errors or omissions. Tested individuals may find their experience is not consistent with Vibrant's selected peer reviewed scientific research findings of relative improvement for study groups. The science in this area is still developing and many personal health factors affect diet and health. Since subjects in the scientific studies referenced in this report may have had personal health and other factors different from those of tested individuals, results from these studies may not be representative of the results experienced by tested individuals. Further, some recommendations may or may not be attainable, depending on the tested individual's physical ability or other personal health factors. A limitation of this testing is that many of these scientific studies may have been performed in selected populations only. The interpretations and recommendations are done in the context of these studies, but the results may or may not be relevant to tested individuals of different or mixed ethnicities.

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