Quest Diagnostics

**Report Status: Final**

| Patient Information | Specimen Information | Client Information |
|---|---|---|
| | | |

## Micronutrients

| Test Name | In Range | Out of Range | Reference Range | Population Distribution | Population Percentile | Historical Result |
|---|---|---|---|---|---|---|
| **HEAVY METAL** | | | | | | |
| ARSENIC, BLOOD<br>Lab : | <3 | | <23 mcg/L | | | - |
| CADMIUM, BLOOD<br>Lab : | <0.5 | | <=1.7 mcg/L | | | - |
| COBALT, BLOOD<br>Lab : | <0.5 | | <=1.8 mcg/L | | | - |
| LEAD, BLOOD (VENOUS)<br>Lab : | <1.0 | | <3.5 mcg/dL | | | - |
| MERCURY, BLOOD<br>Lab : | <4 | | <=10 mcg/L | | | - |



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**Comments**

**Analyte Name**

ARSENIC, BLOOD

Arsenic, a naturally occurring metal, can be found in inorganic compounds such as soils, sediments, and ground water, while organic compounds exist mainly in fish and shellfish. The inorganic forms are known carcinogens, whereas organic forms are considered less toxic. Exposure is most commonly from contaminated groundwater and is also used by industrial sectors to process glass, pigments, and wood preservatives.

For more information, visit https://www.cancer.org/cancer/cancer-causes/arsenic

This test was developed and its analytical performance characteristics have been determined by Quest Diagnostics Nichols Institute, Chantilly, VA. It has not been cleared or approved by the FDA. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.

CADMIUM, BLOOD

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Reference Range:
Adults, Non-Smokers:      1.7 mcg/L or less
Adults, Smokers:          5.0 mcg/L or less
OSHA Reference Range:     5.0 mcg/L or less
Toxic Concentration: Early signs of toxicity have
                     been observed at 30 mcg/L.
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Cadmium is a naturally occurring element that is
mined and used in industrial production because of
its durability. Exposure tends to occur in industrial
sectors including manufacturing, construction, and
transportation. Excessive cadmium exposure can damage
lungs, kidneys, and the digestive tract.
```

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For more information, visit
https://www.cdc.gov/niosh/topics/cadmium/
```

```
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performance characteristics have been determined
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assay has been validated pursuant to the CLIA
regulations and is used for clinical purposes.
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COBALT, BLOOD

Cobalt is a naturally occurring metal, is a part of vitamin B12, and plays a role in making red blood cells and maintaining the nervous system. Industrial exposure is the most common source for toxicity. Extreme exposure can cause cardiomyopathy, while lesser amounts can cause enlargement of the thyroid or increase the production of red blood cells which can contribute to congestive heart failure.

For more information, visit https://www.cdc.gov/niosh/topics/cobalt/

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LEAD, BLOOD (VENOUS)

No safe blood lead level (BLL) in children has been identified.

Lead is a naturally occurring element found in small amounts in all parts of our environment. Changes to the soil like mining, smelting, and refining can release lead into the air and eventually settle to the ground, where it may get into water sources. However, most exposure occurs in the industrial sector. Lead affects almost every organ and system in the body and is especially detrimental to children under 6 and pregnant women. Exposure can lead to increased blood pressure, decreased kidney function, memory loss, and reproductive problems.

For more information, visit https://www.epa.gov/lead/learn-about-lead

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**Comments**

MERCURY, BLOOD

Mercury is a naturally occurring metal in the earth's crust and exists in several forms. Exposure commonly occurs by consumption of contaminated fish and shellfish and to a lesser extent through the vapor of burning of coal or other materials that contain mercury. High levels of exposure can harm the brain, heart, kidneys, lungs, and immune system.

For more information, visit https://www.epa.gov/mercury/basic-information-about-mer cury

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**End Notes:**

**Population Distribution Interpretation:**

Quest population data from 1/1/2020 to 3/16/2021 was used to build the population distribution curves. The x-axis represents the biomarker result value and the y-axis represents the patient kernel density estimate, which is a smoothed version of the histogram.

Solid grey lines represent reference interval cutoffs. A data point at the extent of the x-axis may represent a value below/above the lower/upper limits of the x-axis range.

The population percentile indicates where a patient's result is relative to the whole population. For example, a patient result labeled as 45th percentile means 45% of the population has a test result lower than this resulted value.



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SPECIMEN: