

## Overview

### Useful For

Detecting clinically significant lead exposure due to occupational exposure in random urine specimens

This test is **not a substitute** for blood lead screening.

### Special Instructions

- [Trace Metals Analysis Specimen Collection and Transport](#)

### Method Name

Only orderable as part of profile. For more information see:

-PBUOE / Lead Occupational Exposure, Random, Urine

-HMUOE / Heavy Metal Occupational Exposure, with Reflex, Random, Urine

Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

### NY State Available

Yes

## Specimen

### Specimen Type

Urine

### Specimen Required

Only orderable as part of profile. For more information see:

-PBUOE / Lead Occupational Exposure, Random, Urine

-HMUOE / Heavy Metal Occupational Exposure, with Reflex, Random, Urine

### Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

### Specimen Minimum Volume

1.5 mL

### Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Urine	Refrigerated (preferred)	28 days	
	Ambient	28 days	
	Frozen	28 days	

## Clinical & Interpretive

**Clinical Information**

Lead toxicity primarily affects the gastrointestinal, neurologic, and hematopoietic systems. Increased urine lead concentration per gram of creatinine indicates significant lead exposure. Measurement of urine lead concentration per gram of creatinine before **and** after chelation therapy has been used as an indicator of significant lead exposure. An increase in lead concentration per gram of creatinine in the post-chelation specimen of up to 6 times the concentration in the pre-chelation specimen is normal.

Blood lead is the best clinical correlation of toxicity. For additional information, see PBDV / Lead, Venous, with Demographics, Blood.

**Reference Values**

Only orderable as part of profile. For more information see:

-PBUOE / Lead Occupational Exposure, Random, Urine

-HMUOE / Heavy Metal Occupational Exposure, with Reflex, Random, Urine

**Interpretation**

Urinary excretion of less than 4 mcg/g creatinine is not associated with any significant lead exposure.

Urinary excretion of more than 4 mcg/g creatinine is usually associated with pallor, anemia, and other evidence of lead toxicity.

**Cautions**

No significant cautionary statements

**Clinical Reference**

1. Kosnett MJ, Wedeen RP, Rotherberg SJ, et al: Recommendations for medical management of adult lead exposure. *Environ Health Perspect.* 2007;115:463-471
2. De Burbane C, Buchet JP, Leroyer A, et al: Renal and neurologic effects of cadmium, lead, mercury, and arsenic in children: evidence of early effects and multiple interactions at environmental exposure levels. *Environ Health Perspect.* 2006;114:584-590
3. Strathmann FG, Blum LM: Toxic elements. In: Rafai N, Horwath AR., Wittwer CT, eds. *Tietz Textbook of Clinical Chemistry and Molecular Diagnostics.* 6th ed. Elsevier; 2018:chap 42

**Performance****Method Description**

Lead (Pb) in urine is analyzed by inductively coupled plasma-mass spectrometry (ICP-MS) in kinetic energy discrimination (KED) mode using gallium (Ga), rhodium (Rh), and iridium (Ir) as internal standards and a 5% nitric acid salt matrix calibration.(Unpublished Mayo method)

**PDF Report**

No

**Specimen Retention Time**

14 days

---

**Performing Laboratory Location**

Rochester

**Fees & Codes****Test Classification**

This test was developed, and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

**LOINC® Information**

Test ID	Test Order Name	Order LOINC Value
PBOU	Lead Occupational Exposure	13466-8

Result ID	Test Result Name	Result LOINC Value
608894	Lead Occupational Exposure	13466-8