

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.

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

Triple-Quadrupole Inductively Coupled Plasma Mass Spectrometry (ICP-MS/MS)

NY State Available

Yes

Specimen

Specimen Type

Urine

Specimen Required

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

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

Specimen Minimum Volume

1.5 mL

Reject Due To

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

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 measurement is the best test for clinical correlation of toxicity. For more information, see PBDV / Lead, Venous, with Demographics, Blood.

Reference Values

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Biological Exposure Index (BEI): <150 mcg/g creatinine

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(3):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(4):584-590
3. Strathmann FG, Blum LM. Toxic elements. In: Rifai N, Chiu RWK, Young I, Burnham CD, Wittwer CT, eds. *Tietz Textbook of Laboratory Medicine*. 7th ed. Elsevier; 2023:chap 44
4. Hauptman M, Bruccoleri R, Woolf AD. An update on childhood lead poisoning. *Clin Pediatr Emerg Med.* 2017;18(3):181-192. doi:10.1016/j.cpem.2017.07.010

Performance

Method Description

The metal of interest is analyzed by triple-quadrupole inductively coupled plasma mass spectrometry.(Unpublished

Mayo method)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

2 to 4 days

Specimen Retention Time

14 days

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Superior Drive

Fees & Codes

Fees

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact [Customer Service](#).

Test Classification

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

CPT Code Information

83655

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