Test Definition: HGCU

Mercury/Creatinine Ratio, U

Overview

Useful For

Detecting mercury toxicity using random urine specimens

Special Instructions

- Trace Metals Analysis Specimen Collection and Transport

Method Name

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

HGUCR / Mercury/Creatinine Ratio, Random, Urine

HMUCR / Heavy Metal/Creatinine Ratio, 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:

HGUCR / Mercury/Creatinine Ratio, Random, Urine

HMUCR / Heavy Metal/Creatinine Ratio, 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)	7 days	
	Frozen	7 days	

Clinical and Interpretive

Clinical Information

The correlation between the levels of mercury (Hg) excretion in the urine and the clinical symptoms is considered poor.

It had always been thought that urine was a more appropriate marker of inorganic mercury, because organic mercury represented only a small fraction of urinary mercury.Based on possible demethylation of methylmercury within the body, urine may represent a mixture of dietary methylmercury and inorganic mercury. Seafood consumption can contribute to urinary mercury levels (up to 30%),(1) which is consistent with the suggestion that due to demethylation processes in the human body, a certain proportion of urinary mercury can originate from dietary consumption of fish/seafood.(2).

For additional information, see HG / Mercury, Blood.

Reference Values

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

HGUCR / Mercury/Creatinine Ratio, Random, Urine

HMUCR / Heavy Metal/Creatinine Ratio, with Reflex, Random Urine.

Interpretation

Daily urine excretion of mercury above 50 mcg/day indicates significant exposure (per World Health Organization standard).

Cautions

To avoid contamination by dust, specimen should be collected away from the site of suspected exposure.

Clinical Reference

1. Snoj Tratniid J, Falnoga I, Mazej D, et al: Results of the first national human biomonitoring in Slovenia: Trace elements in men and lactating women, predictors of exposure and reference values. Int J Hyg Environ Health. 2019;222(3):563-582

2. Sherman LS, Blum JD, Franzblau A, Basu N: New insights into biomarkers of human mercury exposure using naturally occurring mercury stable isotopes. Envrn Sci Technol. 2013;47(7):3403-3409

3. Lee R, Middleton D, Caldwell K, et al. A review of events that expose children to elemental mercury in the United States. Environ Health Perspect. 2009 Jun;117(6):871-878

4. Bjorkman L, Lundekvam BF, Laegreid T, et al: Mercury in human brain, blood, muscle and toenails in relation to exposure: an autopsy study. Environ Health. 2007 Oct 11;6:30

Performance

Method Description

Mercury (Hg) 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

Day(s) Performed

Monday through Friday

Report Available

1 day

Specimen Retention Time

14 days

Performing Laboratory Location

Rochester

Fees and 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 Regional Manager. 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. This test has not been cleared or approved by the U.S. Food and Drug Administration.

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
HGCU	Mercury/Creatinine Ratio, U	13465-0

Result ID	Test Result Name	Result LOINC Value
608903	Mercury/Creatinine Ratio, U	13465-0