Test Definition: ICRU

Iodine/Creat Ratio, Random, U

Overview

Useful For

Assessment of iodine toxicity or recent exposure when a 24-hour urine cannot be collected

Monitoring iodine excretion rate as index of replacement therapy when a 24-hour urine cannot be collected

Profile Information

Test ID	Reporting Name	Available Separately	Always Performed
ICR	Iodine/Creat Ratio, U	No	Yes
CDCR	Creatinine Concentration	No	Yes

Special Instructions

- Trace Metals Analysis Specimen Collection and Transport

Method Name

ICR: Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

CDCR: Enzymatic Colorimetric Assay

NY State Available

Yes

Specimen

Specimen Type

Urine

Ordering Guidance

Due to the significant variation in the rate of secretion over the course of a day, a 24-hour collection is preferred. For more information see UIOD / Iodine, 24 Hour, Urine.

Specimen Required

Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

Supplies: Urine Tubes, 10 mL (T068)

Collection Container/Tube: Clean, plastic urine collection container

Submission Container/Tube: Plastic, 10-mL urine tube or a clean, plastic aliquot container with no metal cap or glued insert

Specimen Volume:3 mL

Collection Instructions:

1. Collect a random urine specimen.

2. SeeTrace Metals Analysis Specimen Collection and Transport in Special Instructionsfor complete instructions.

Specimen Minimum Volume

1 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)	30 days	
	Ambient	30 days	
	Frozen	30 days	

Clinical and Interpretive

Clinical Information

Iodine is an essential element for thyroid hormone production.

The measurement of urinary iodine serves as an index of adequate dietary iodine intake.

Reference Values

0-17 years: not established

> or = 18 years: <584 mcg/g creatinine

Interpretation

Measurement of urinary iodine excretion provides the best index of dietary iodine intake and deficiency is generally indicated when the concentrations are below 100 mcg/L. For deficiency, 10 repeat random urines are recommended.

Cautions

Administration of iodine-based contrast media and drugs containing iodine, such as amiodarone, will yield elevated results.

Clinical Reference

1. Nader R, Horwath AR, Wittwer CT: Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. Sixth edition. St. Louis. Elsevier 2017

2. Knudsen N, Christiansen E, Brandt-Christensen M, et al: Age- and sex-adjusted iodine/creatinine ratio. A new standard in epidemiological surveys? Evaluation of three different estimates of iodine excretion based on casual urine samples and comparison to 24 h values. Eur J Clin Nutr 2000;54:361-363

3. Liberman CS, Pino SC, Fang SL, et al: Circulating iodine concentrations during and after pregnancy. J Clin Endocrinol Metab 1998;83:3545-3549

4. Pfeiffer CM, Sternberg MR, Schleicher RL, et al: CDCâ€™s Second National Report on Biochemical Indicators of Diet and Nutrition in the US Population is a valuable tool for researchers and policy makers. J Nutr 2013;143(6):938S-947S

Performance

Method Description

Iodine in urine is analyzed by inductively coupled plasma-mass spectrometry (ICP-MS) in standard mode using tellurium (Te), as an internal standard, and an aqueous acidic calibration.(Unpublished Mayo method)

Creatinine is measured using an enzymatic method based on the determination of sarcosine from creatinine with the aid of creatininase, creatinase, and sarcosine oxidase. The liberated hydrogen peroxide is measured via a modified Trinder reaction using a colorimetric indicator.(Package insert: Roche Diagnostics, Indianapolis IN, 2018)

PDF Report

No

Day(s) Performed

Monday, Wednesday, Friday

Report Available

1 to 3 days

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.

CPT Code Information

83789

82570

LOINC® Information

Test Definition: ICRU

Iodine/Creat Ratio, Random, U

Test ID	Test Order Name	Order LOINC Value
ICRU	Iodine/Creat Ratio, Random, U	55928-6

Result ID	Test Result Name	Result LOINC Value
CDCR	Creatinine Concentration	2161-8
32874	Iodine/Creat Ratio, U	55928-6