MAYO CLINIC LABORATORIES

Test Definition: IOD

Iodine, Serum

Overview

Useful For

Determining iodine overload using serum specimens

Monitoring iodine levels in individuals taking iodine-containing drugs

Special Instructions

- Metals Analysis Specimen Collection and Transport

Method Name

Inductively Coupled Plasma Mass Spectrometry (ICP-MS)

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Patient Preparation:

1. Disinfectants (such as Betadine) that contain iodine should not be used during venipuncture.
2. High concentrations of gadolinium and iodine may interfere with inductively coupled plasma mass spectrometry-based metal tests. If either gadolinium- or iodine-containing contrast media has been administered, **the specimen should not be collected for at least 96 hours.**

Supplies:

-Metal Free B-D Tube (No Additive), 6 mL (T184)
-Metal Free Specimen Vial (T173)

Collection Container/Tube: Plain, royal blue-top Vacutainer plastic trace element blood collection tube

Submission Container/Tube: Mayo metal-free, screw-capped, polypropylene vial

Specimen Volume: 1 mL

Collection Instructions:

1. Allow specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction.
2. Remove the stopper. Carefully pour specimen into Mayo metal-free, polypropylene vial, avoiding transfer of the cellular components of blood. Do not insert a pipet into the serum to accomplish transfer, and do not ream the specimen with a wooden stick to assist with serum transfer.
3. See Trace Metals Analysis Specimen Collection and Transport for complete instructions.

Specimen Minimum Volume

0.3 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Ambient	21 days	
	Refrigerated (preferred)	21 days	
	Frozen	21 days	

Clinical & Interpretive

Clinical Information

Iodine is an essential element required for thyroid hormone production. The measurement of iodine serves as an index of adequate dietary iodine intake and iodine overload, particularly from iodine-containing drugs, such as amiodarone.

Reference Values

40-92 ng/mL

Interpretation

Values between 80 ng/mL and 250 ng/mL have been reported to indicate hyperthyroidism.

Values above 250 ng/mL may indicate iodine overload.

Cautions

There are no known analytical interferences with this procedure.

Administration of iodine-containing contrast media will yield elevated results.

Clinical Reference

1. Allain P, Berre S, Krari N, et al. Use of plasma iodine assay for diagnosing thyroid disorders. J Clin Pathol. 1993;46(5):453-455

2. Rifai N, Chiu RWK, Young I, Burnham CAD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023

3. Leung AM, Braverman LE. Consequences of excess iodine. Nat Rev Endocrinol. 2014;10(3):136-142. doi: 10.1038/nrendo.2013.251

4. U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry: Toxicological Profile for Iodine. HHS; 2004. Accessed March 20, 2025. Available at www.atsdr.cdc.gov/ToxProfiles/tp158.pdf

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Iodine, Serum

Performance

Method Description
The metal of interest is analyzed by inductively coupled plasma mass spectrometry.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Tuesday, Friday

Report Available
2 to 4 days

Specimen Retention Time
14 days

Performing Laboratory Location
Rochester

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
83789

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
IOD	Iodine, S	2494-3

Result ID	Test Result Name	Result LOINC® Value
81574	Iodine, S	2494-3