Overview

Useful For
Detecting exposure to cadmium, a toxic heavy metal

Method Name
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

NY State Available
Yes

Specimen

Specimen Type
Whole blood

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: Metal Free B-D Tube (EDTA), 6 mL (T183)

Container/Tube: Royal blue-top (EDTA) plastic trace element blood collection tube

Specimen Volume: Full tube

Collection Instructions: Send specimen in original tube.

Additional Information: If ordering the trace element blood collection tube from BD, order catalog #368381.

Specimen Minimum Volume
0.3 mL

Reject Due To

Gross hemolysis OK
Gross lipemia OK
Gross icterus OK

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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</thead>
<tbody>
<tr>
<td>Whole blood</td>
<td>Refrigerated (preferred)</td>
<td>28 days</td>
<td></td>
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<tr>
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<td>Ambient</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
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Clinical and Interpretive

Clinical Information
The toxicity of cadmium resembles the other heavy metals (arsenic, mercury, and lead) in that it attacks the kidney; renal dysfunction with proteinuria with slow onset (over a period of years) is the typical presentation.

Breathing the fumes of cadmium vapors leads to nasal epithelial deterioration and pulmonary congestion resembling chronic emphysema.

The most common source of chronic exposure comes from spray painting of organic-based paints without use of a protective breathing apparatus; auto repair mechanics represent a susceptible group for cadmium toxicity. In addition, another common source of cadmium exposure is tobacco smoke.

Reference Values
<5.0 ng/mL

Reference values apply to all ages.

Interpretation
Normal blood cadmium is <5.0 ng/mL, with most results in the range of 0.5 to 2.0 ng/mL.

Acute toxicity will be observed when the blood level exceeds 50 ng/mL.

Cautions
No significant cautionary statements

Clinical Reference


Performance

Method Description
Cadmium (Cd) is analyzed by inductively coupled plasma-mass spectrometry (ICP-MS) in kinetic energy discrimination (KED) mode using helium as a non-reactive gas to collide with polyatomic interferences such as argon chloride (ArCl). Internal standard used is rhodium (Rh). A salt matrix calibration is used.(Unpublished Mayo method)

PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Saturday; 2 p.m.

Analytic Time
1 day
Maximum Laboratory Time
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
82300

LOINC® Information

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<td>Cadmium, B</td>
<td>5609-3</td>
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