

Overview

Useful For

Detecting mercury exposure

Special Instructions

- [Collecting Hair and Nails for Metals Testing](#)

Method Name

InductivelyCoupledPlasma-MassSpectrometry(ICP-MS)

NY State Available

No

Specimen

Specimen Type

Nail

Specimen Required

Supplies: Hair and Nails Collection Kit (T565)

Specimen Volume: 0.2 g

Collection Instructions:

1. Prepare and transport specimen per the instructions in the kit or see [Collecting Hair and Nails for Metals Testing](#) in Special Instructions.
2. Clippings should be taken from all 10 fingernails or toenails.

Additional Information: If known, indicate source of nails (fingernails or toenails).

Specimen Minimum Volume

0.05 g

Reject Due To

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

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Nail	Ambient (preferred)		
	Frozen		
	Refrigerated		

Clinical and Interpretive

Clinical Information

Once absorbed and circulating, mercury becomes bound to numerous proteins, including keratin. The concentration of mercury in nails correlates with the severity of clinical symptoms. If the nails can be segregated by length, such an exercise may be useful in identifying the time of exposure.

Reference Values

0-15 years: not established

> or =16 years: <1.0 mcg/g of nails

Interpretation

Normally, nails contain less than 1 mcg/g of mercury; any amount more than this indicates that exposure to more than normal amounts of mercury may have occurred.

Clinical Reference

1. Marques RC, Dorea JG, Bastos WR, Malm O: Changes in children hair-Hg concentrations during the first 5 years: maternal, environmental and iatrogenic modifying factors. *Reg Toxicol Pharmacol* 2007;49:17-24
2. Canuel R, de Grosbois SB, Atikesse L, et al: New evidence on variations of human body burden of methylmercury from fish consumption. *Environ Health Perspect* 2006;114:302-306

Performance

Method Description

Arsenic, mercury, and lead in nails are analyzed by inductively coupled plasma-mass spectrometry (ICP-MS) in kinetic energy discrimination (KED) mode using gallium, iridium, and lutetium as internal standards, and a salt matrix calibration. (Unpublished Mayo method)

PDF Report

No

Day(s) and Time(s) Test Performed

Tuesday; 3 p.m.

Analytic Time

2 days

Maximum Laboratory Time

7 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

83825

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
HGNA	Mercury, Nails	8204-0

Result ID	Test Result Name	Result LOINC Value
2509	Mercury, Nails	8204-0
HGNSC	Specimen Source	31208-2