MAYO CLINIC LABORATORIES

Test Definition: HGNA

Mercury, Nails

Overview

Useful For

Detecting mercury exposure in nail specimens

Special Instructions

- Collecting Hair and Nails for Metals Testing

Method Name

Triple-Quadrupole Inductively Coupled Plasma Mass Spectrometry (ICP-MS/MS)

NY State Available

No

Specimen

Specimen Type

Nail

Necessary Information

Indicate source of nails (fingernails or toenails), if known.

Specimen Required

Supplies: Hair and Nails Collection Kit (T565)

Source: Fingernails or toenails

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.
2. Clippings should be taken from all 10 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)		
	Refrigerated		

	Frozen		

Clinical & 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.

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.

Cautions

No significant cautionary statements.

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. Regul Toxicol Pharmacol. 2007;49(1):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(2):302-306
3. Strathmann FG, Blum LM. Toxic elements. In: Rifai N, Chiu RWK, Young I, Burnham CAD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:chap 44

Performance

Method Description

The metal analytes of interest are analyzed by triple-quadrupole inductively coupled plasma mass spectrometry.(Unpublished Mayo method).

PDF Report

No

Day(s) Performed

Wednesday

Report Available

2 to 14 days

Specimen Retention Time

14 days

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Superior Drive

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

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