MAYO CLINIC LABORATORIES

Test Definition: HGHAR

Mercury, Hair

Overview

Useful For

Detecting mercury exposure in hair 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

Hair

Necessary Information

Indicate source of hair (axillary, head, or pubic) if known.

Specimen Required

Supplies: Hair and Nails Collection Kit (T565)
Source: Head, beard, mustache, chest, pubic
Specimen Volume: 0.2 g
Collection Instructions: Prepare and transport specimen per the instructions in the kit or see Collecting Hair and Nails for Metals Testing.

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
Hair	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 hair correlates with the severity of clinical symptoms. If the hair 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 hair

Interpretation

Hair grows at a rate of approximately 0.5 inch/month. Hair keratin synthesized today will protrude through the skin in approximately 1 week. Thus, a hair specimen collected at the skin level represents exposure of 1 week ago, 1 inch distally from the skin represents exposure 2 months ago, etc.

Normally, hair contains 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

Cosmetic and hair dyes can be a potential source of heavy metal contamination.

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
HGHAR	Mercury, Hair	5686-1

Result ID	Test Result Name	Result LOINC® Value
31900	Mercury, Hair	5686-1
HGHSC	Specimen Source	31208-2