

Overview

Useful For

Detecting mercury exposure in hair specimens

Special Instructions

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

Method Name

Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

NY State Available

No

Specimen

Specimen Type

Hair

Specimen Required

Supplies: Hair and Nails Collection Kit (T565)

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](#).

Additional Information: If known, indicate source of hair (axillary, head, or pubic).

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) | | |
| | Frozen | | |
| | Refrigerated | | |

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. 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.

Reference Values

0-15 years: Not established

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

Interpretation

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. *Reg Toxicol Pharmacol* 2007;49:17-24
2. Canuel R, de Grosbois SB, Atikessé L, et al. New evidence on variations of human body burden of methylmercury from fish consumption. *Environ Health Perspect.* 2006;114:302-306
3. Strathmann FG, Blum LM. Toxic elements. In: Nader R, Horwath AR, Wittwer CT, eds. *Tietz Textbook of Laboratory Medicine*. 7th ed. Elsevier; 2023:chap 44

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

Report Available

2 to 8 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

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 |