Test Definition: PBNA

Lead, Nails

Overview

Useful For

Detecting lead exposure using 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
Nail analysis of lead can be used to corroborate blood analysis.

Reference Values
<4.0 mcg/g of nails

Reference values apply to all ages.

Interpretation
Normally, the nail lead content is below 4.0 mcg/g. While nail lead content above 10.0 mcg/g may indicate significant lead exposure, nails are also subject to potential external contamination with environmental lead. Ultimately, the nail lead content needs to be interpreted in addition to the overall clinical scenario including symptoms, physical findings, and other diagnostic results when determining further actions.

Cautions
Blood lead analysis has the strongest correlation with toxicity.

Clinical Reference
1. Strumylaite L, Ryselis S, Kregzdyte R. Content of lead in human hair from people exposed to lead. Int J Hyg Environ Health. 2004;207(4):345-351
2. Barbosa F, Tanus-Santos J, Gerlach R, Parsons P. A critical review of biomarkers used for monitoring human exposure to lead: advantages, limitations, and future needs. Environ Health Perspect.2005;113(12):1669-1674
3. Sanna E, Liguori A, Palmes L, Soro MR, Floris Ge Blood and hair lead levels in boys and girls living in two Sardinian towns at different risks of lead pollution. Ecotoxicol Environ Saf. 2003;55(3):293-299
4. 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

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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
83655

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
PBNA	Lead, Nails	8202-4

Result ID	Test Result Name	Result LOINC® Value
2506	Lead, Nails	8202-4
PBNSC	Specimen Source	31208-2