

---

## Lead Profile Occupational Exposure, Blood

**Test ID:** PBPFD

**Useful for:**

Detecting lead toxicity due to occupational exposure

**Methods:**

PBB: Inductively Coupled Plasma Mass Spectrometry (ICP-MS)

PPFE: High-Performance Liquid Chromatography (HPLC) with Fluorescence Detection

**Reference Values:**

LEAD: <3.5 mcg/dL

The Occupational Safety and Health Administration (OSHA) recommended limit for blood lead level is 40 mcg/dL (OSHA 1978).

The biological exposure index (BEI) for Pb in blood of exposed workers is 20 mcg/dL (ACGIH 2018).

**Critical Values:**

Pediatrics (< or =15 years): > or =20.0 mcg/dL

Adults (> or =16 years): > or =70.0 mcg/dL

**PROTOPORPHYRINS, FRACTIONATION**

Free Protoporphyrin: <20 mcg/dL

Zinc-Complexed Protoporphyrin: <60 mcg/dL

**Specimen Requirements:**

**Container/Tubes:** Metal Free EDTA and Sodium Heparin tubes

**Preferred:** Royal blue-top BD Vacutainer Plus with EDTA blood collection tube (T183)  
**AND** Green top (sodium heparin)

**Acceptable:** Metal Free B-D Tube (EDTA), 6 mL (T183), or Metal Free (Lead only) EDTA Tube, 3 mL (T615)  
**AND**  
Dark blue top (metal free heparin), green top (lithium heparin), or lavender top (EDTA)

**Specimen Volume:** PBB/Lead: 2 mL  
PPFE/ Protoporphyrins: 4 mL

**Collection Instructions:**

1. See Metal Analysis Specimen Collection and Transport for complete instructions.
2. Send whole blood specimen in original tube. Do not aliquot.
3. Refrigerate specimen as soon as possible.

**Minimum Volume:** PBB/Lead: 0.1 mL  
PPFE/Protoporphyrins: 3 mL

**Note:**

Both EDTA whole blood and heparin whole blood specimens are required.

**Specimen Stability Information:**

Specimen Type	Temperature	Time
Whole Blood	Refrigerated	7 days

**Cautions:**

For protoporphyrin testing, patients must abstain from alcohol for at least 24 hours prior to specimen collection. Alcohol suppresses enzyme activity potentially leading to false-positive results.

**CPT Code:**

83655  
82542

**Day(s) Performed:** Monday, Wednesday, Friday    **Report Available:** 2 to 6 days

**Questions**

Contact Rebekah Walsh, Laboratory Resource Coordinator at 800-533-1710.