USEFUL FOR
Determining antimony toxicity

CLINICAL INFORMATION
Antimony is a silvery white metal that is used in alloys for lead batteries, solder, sheet metal, bearings, castings, ammunition, and pewter. It is also used for pigments, abrasives, flame-proofing fabrics, and in medications (i.e., sodium stibogluconate [Pentostam], which is used to treat cutaneous leishmaniasis). Antimony typically enters the environment during mining, processing of ores, emissions from coal-burning power plants, and production of alloys. Exposure to antimony can occur through inhalation, ingestion, or dermal contact with soil, water, foods, or medications that contain it. In the workplace, exposure is usually via inhalation. The Occupational Safety and Health Administration (OSHA) has set a limit of 0.5 mg/m³ of antimony in workroom air to protect workers during an 8-hour work shift (40-hour workweek). Absorption of antimony through the lungs may take days to weeks. Absorption of antimony from ingestion typically enters the blood within a few hours. The amount and form of the antimony affects how much is absorbed. Once in the blood, antimony is then distributed to the liver, lungs, intestines, and spleen. Elimination is primarily through the urine over several weeks. The half-life varies with the chemical form. Trivalent antimony is primarily bound to erythrocytes, while pentavalent antimony is primarily found in plasma, which makes whole blood the preferred specimen to analyze for acute intoxication. Whole blood concentrations in healthy subjects not exposed to antimony averaged 0.7 mcg/L and usually don’t exceed 2 mcg/L. In battery plant workers, median blood antimony concentrations of 2.6 mcg/L were found in metal casters and 10 mcg/L in metal formers.

The effects of acute or chronic antimony poisoning are similar to arsenic and include abdominal pain, dyspnea, nausea, vomiting, dermatitis, and visual disturbances. Additionally, toxicity can include pneumoconiosis, and altered electrocardiograms.

SPECIMEN REQUIRED
Specimen Type
Whole blood

Container/Tube
Covidien-Monoject royal blue-top (EDTA) Vacutainer glass trace element blood collection tube. Other royal blue-top tubes are not acceptable for this testing.

Specimen Volume
0.8 mL

TEST ID: SBWB
ANTIMONY, BLOOD

MOBILE APPS FROM MAYO MEDICAL LABORATORIES

Lab Catalog for iPad and Lab Reference for iPhone and iPod Touch

REFERENCE VALUES
<2 ng/mL (unexposed)
3–10 ng/mL (exposed)

ANALYTIC TIME
1 day

CONTENT AND VALUES SUBJECT TO CHANGE. SEE THE MAYO MEDICAL LABORATORIES TEST CATALOG FOR CURRENT INFORMATION.
INTERPRETATION

Normal blood concentrations are 0.7 to 2 ng/mL unexposed and 2.6 to 10 ng/mL in exposed workers.³

CLINICAL REFERENCE

1. Baselt R: Disposition of Toxic Drugs and Chemicals In Man. 10th edition. 2014, Biomedical Publications. Seal Beach, CA
2. Registry AfT SaD. Toxicology Profile for Antimony and Compounds. In Services USPH, Editor; 1992