



THALLIUM

I. Protocol Overview

Thallium is a highly toxic heavy metal with no known biological function and is used heavily in manufacturing, chemical industry, fireworks, and medical imaging. Thallium poisonings are usually from ingestion of the colorless, water-soluble, tasteless salts, but inhalation (dusts or fumes) and skin absorption cases have been reported.

Thallium ingestion may cause gastrointestinal signs and symptoms (nausea, vomiting, diarrhea, gastritis, duodenitis, and most commonly abdominal pain). Symptoms (onset of days to weeks) after a substantial or chronic exposure may include severely painful ascending neuropathy (paraesthesia, hyperesthesia, headaches, nystagmus, atrophy, myalgia, myopathy, loss of reflexes, convulsions, coma, optic and acute motor neuropathy), respiratory depression, dementia, delirium, psychosis, ataxia, characteristic loss of hair, cardiac arrhythmias, and skin rash. Thallium poisoning (ingestion) may be diagnosed by x-ray and can be successfully treated using potassium ferrihexacyanoferrate (Prussian blue). Gastric lavage (within six hours of ingestion) and induced emesis may help stop thallium absorption.

For all suspected chemical exposures, consult the Poison Control Center (800-222-1222) located at Children's Hospital of Philadelphia. Information and treatment advice is available to the public and healthcare professionals at no charge.

Inductively Coupled Plasma Mass spectrometry (ICP/MS) methods are used to detect urinary and blood metals present in the sample. Samples are acidified and metals are quantified via elemental separation followed by mass spectrometry analysis. ICP/MS, ICP spectroscopy, and flame atomic absorption spectroscopy (GFAA) methods are used to detect metals in environmental and food samples.

The Delaware Public Health Laboratory does not perform this testing. Contact the CDC or the Poison Control Center.

II. Contact Information

24/7 CDC Emergency Contact Number: 1-888-295-5156

Poison Control Center: 215-386-2100

III. CDC Website

<http://emergency.cdc.gov/agent/thallium/casedef.asp>