

INFORMATION FOR HEALTH CARE PROVIDERS ON MERCURY POISONING

HEALTH CARE PROVIDERS SHOULD:

- Consider testing patients for mercury when exposed to significant sources.
- Recognize the different forms of mercury with their distinct sources and health effects.
- Report mercury levels $\geq 5\mu\text{g/L}$ in blood and $\geq 20\mu\text{g/L}$ in urine to NYC Department of Health and Mental Hygiene (DOHMH) by calling 212-788-4290 and faxing test results to 212-788-4299.

Risk Factors for Mercury Exposure

People can be exposed to mercury in three different forms that differ by source, clinical presentation and method of testing.

Elemental Mercury (Also known as: Metallic, Liquid, Quicksilver, Liquid Silver, Azogue, Mercurio, Vidajan)

- Inhaling vapors when certain items break and spill.

Some items that contain elemental mercury include thermometers, barometers, sphygmomanometers, manometers, thermostats and fluorescent bulb. Elemental mercury may also be used in some cultural or spiritual rituals.

Inorganic Mercury Salts

- Ingesting imported health remedies.

For more information, visit <http://www.nyc.gov/html/doh/downloads/pdf/lead/lead-herbalmed.pdf>.

- Skin absorption from topical imported health remedies.

Some imported skin lightening creams and antiseptics contain mercury.

Organic Mercury

- Eating fish contaminated with methyl mercury.

Pregnant/nursing women and young children are at particular risk. Most fish have some methyl mercury. Large predatory fish tend to bioaccumulate mercury. Fish with the highest mercury levels include shark, swordfish, king mackerel, tilefish, tuna steaks and sushi-grade tuna, grouper, orange roughy, marlin, and Chilean sea bass.

Some Signs and Symptoms

Elemental Mercury

- Symptoms of acute exposure: Inhalation of mercury vapors may result in weakness, chills, metallic taste, nausea, vomiting, abdominal pain, diarrhea, headache, tremor, visual disturbances, dyspnea, cough, chest tightness, gingivitis, and stomatitis.
- Symptoms of chronic exposure: May include emotional lability, memory impairment, insomnia, anorexia, shyness, delirium, excessive salivation, excessive sweating, hemoconcentration, progressive tremor, and acrodynia.

Inorganic Mercury

- Symptoms of acute exposure: Ingestion may result in salivation, metallic taste, abdominal pain, bloody diarrhea, proteinuria, and acute renal failure. Dermal exposure can also lead to systemic toxicity.
- Symptoms of chronic exposure: Long term dermal application may result in peripheral neuropathy, nephropathy, erythema and hyperpigmentation of the skin. Additional symptoms are the same as elemental mercury.

Organic Mercury

- Most people are not symptomatic from their exposure to methyl mercury from fish. Chronic exposure to very high amounts may result in neurotoxicity and less commonly gastrointestinal disturbances. The primary concern is with developmental effects from prenatal and early childhood exposure.

Diagnostic Tests

Elemental and Inorganic Mercury

- 24 hour urine test is the gold standard.
Spot urine can be used as a screening test, but if elevated, a 24 hour urine test should be ordered. The interpretation of spot urine samples are most accurate when measured on a first morning void and when corrected for creatinine.
- U.S. population generally has < 10µg Hg/L urine or < 5µg Hg/g creatinine.
- Analysis of blood for elemental mercury is of limited value.

Organic Mercury

- Blood is the best biomarker.
- U.S. population generally has < 5µg Hg/L blood.
In persons who recently ate fish, the blood mercury level can be higher.

Management

- Recommend ways to reduce or remove sources of mercury exposure.
See below "Discuss Ways to Reduce Mercury Exposure with Patients."
- Report all mercury poisonings to NYC DOHMH within 24 hours as required by NYC health code (24 RCNY §11.03).
- Consult a medical toxicologist or the Poison Control Center to discuss different treatment options for symptomatic patients where mercury poisoning is confirmed or suspected. Consult an occupational medicine physician for patients exposed through their work.

Discuss Ways to Reduce Mercury Exposure with Patients

- Carefully handle and dispose of products that contain mercury.
- Do not vacuum spilled mercury because it will vaporize and increase exposure.
- If an amount of mercury larger than that found in a fever thermometer has spilled, call 311.
- Avoid the use of imported products that may contain mercury such as some health remedies and cosmetics.
- Pregnant women and young children should adhere to fish advisories.

Information Resources

- To report mercury levels $\geq 5\mu\text{g/L}$ in blood or $\geq 20\mu\text{g/L}$ in urine to NYC DOHMH, call 212-788-4290 and fax test results to 212-788-4299.
- Call the NYC DOHMH at 212-788-4290 during regular business hours to:
 - Report potential mercury-containing products
 - Obtain guidance on decontamination of mercury spills
 - Receive more information on mercury poisoning
 - Get a referral to a medical toxicologist or an occupational medicine physician
- Call Poison Control at 1-800-222-1222 for urgent consultations on the diagnosis or treatment of mercury poisoning.
- Find a NYS laboratory certified to analyze specimens for mercury by calling 518-485-5378 or visiting www.wadsworth.org/labcert/lep/CategoryPermitLinks/CategoryListing.htm.
- Find recreational fish advisories at <http://www.health.state.ny.us/environmental/outdoors/fish/fish.htm>.
- Find the full EPA/FDA fish advisory, including answers to frequently asked questions about mercury in fish at <http://www.epa.gov/waterscience/fish/MethylmercuryBrochure.pdf>.
- Find more information on mercury poisoning at www.atsdr.cdc.gov/cabs/mercury/mercurycabs_use.html.
- Find more information on mercury poisoning linked with use of skin lightening cream at <http://www.nyc.gov/html/doh/downloads/pdf/cd/05md03.pdf>.