



INFORMATION FOR HEALTH CARE PROVIDERS ON MERCURY POISONING

HEALTH CARE PROVIDERS SHOULD:

- Recognize three forms of mercury and their associated exposure risks and health effects
- Order appropriate laboratory tests when exposure occurs or symptoms are suggestive of mercury poisoning
- Guide patients to appropriate patient education materials to help prevent mercury exposure

Mercury exists in three forms: elemental, inorganic, and organic. Because mercury occurs naturally in the environment, everyone is exposed to low levels of mercury in air, water, and food. Health effects from mercury exposure depend on the form of mercury, dose, duration and route of exposure, and age of the person exposed.

Elemental Mercury (also called metallic mercury, quicksilver, liquid silver, azogue, mercurio, vidajan)

Sources:

- Mercury-containing devices such as thermometers, barometers, sphygmomanometers, thermostats and fluorescent bulbs can release mercury when broken.
- Occupational exposures in, dental offices, thermometer factories, and other industrial settings.
- Some cultural or spiritual practices use elemental mercury.
- Dental amalgam fillings release elemental mercury but there is no evidence of associated toxicity.

Exposure route: Elemental mercury vaporizes into the air at room temperature and is well absorbed by inhalation. Ingestion presents minimal health risk because gastrointestinal absorption is poor. Dermal absorption is also limited but exposure may cause skin and eye irritation.

Health effects

- Acute exposure: weakness, chills, dyspnea, nausea, vomiting, diarrhea, visual disturbances
- Chronic exposure: tremor, gingivostomatitis, anxiety, emotional lability, forgetfulness, insomnia, anorexia and erethism. Young children may develop acrodynia.

Laboratory testing

- 24 hour urine mercury level

- Screening can be performed with spot urine sample from a first morning void. Results should be corrected for creatinine. If elevated, perform 24 hour urine collection.
- Blood testing for elemental mercury is of limited value.

Prevention

- Handle mercury-containing products carefully and dispose of them properly.
- Do not vacuum spilled mercury. Vacuuming will cause the mercury to vaporize and increase exposure.
- Call 311 for mercury spills larger than the amount found in a fever thermometer.

Inorganic Mercury Salts

Sources: Some imported health remedies, skin lightening creams, and antiseptics.

Exposure route: Ingestion or skin absorption. Many inorganic mercury salts are corrosive to the skin or gastrointestinal tract.

Health effects

- Acute exposure: nausea, vomiting, severe abdominal pain and bloody diarrhea
- Chronic exposure: proteinuria, acute tubular necrosis, nephrotic syndrome, metallic taste, gingivostomatitis, rash, paresthesia, irritability, difficulty concentrating, tremors, memory loss, depression, insomnia, weight loss and fatigue.

Laboratory testing: as for elemental mercury above

Prevention: Avoid imported health remedies and cosmetics that may contain mercury. See “Resources” for more information on contaminated consumer products.

Organic Mercury (also known as methyl mercury)

Sources: Most fish and shellfish contain some methyl mercury. Large predatory fish such as shark, swordfish, king mackerel, tilefish, tuna steaks and sushi-grade tuna, grouper, orange roughy, marlin and Chilean sea bass accumulate high methyl mercury levels in their bodies.

Exposure route: Ingestion through seafood

Health effects: Most people do not experience symptoms from organic mercury ingestion. Chronic exposure to very high amounts can cause neurotoxicity including perioral paresthesia, visual field constriction, deafness and ataxia. The fetus and young children are more sensitive and very high levels may cause irreversible damage even if the pregnant mother shows no signs of toxicity.

Laboratory testing: Blood mercury level. Blood mercury can be elevated up to 5 days after a seafood meal so results should be interpreted in the context of recent diet.

Prevention: Pregnant or breastfeeding women and young children are encouraged to eat fish as an excellent source of nutrition but should avoid fish containing the highest levels of mercury. They should

use the [Eat Fish. Choose Wisely brochure](#) to select appropriate types of fish and serving sizes and adhere to local fish advisories when consuming locally-caught fish (see “Information for Patients”).

Management of Mercury Poisoning

- Symptoms generally resolve once the exposure is stopped.
- For urgent consultation on diagnosis or treatment of mercury poisoning, call the Poison Control Center (PCC) at 1-800-222-1222.
- Chelation therapy is warranted in some severe cases but is unlikely to benefit most patients and may cause harm. Consult with a medical toxicologist, occupational medicine physician or PCC before initiating chelation.
- Call the NYC Health Department at 646-632-6102 during regular business hours for guidance on decontamination of mercury spills or referral to medical toxicology or occupational medicine.
- Laboratories are mandated to report mercury levels $\geq 5\mu\text{g/L}$ in blood and $\geq 20\mu\text{g/L}$ in urine to the New York State Heavy Metals Registry https://www.health.ny.gov/environmental/workplace/heavy_metals_registry/. Follow up with your patient may occur.

Resources

- Mercury poisoning <http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=24>
- Contaminated consumer products <http://www.nyc.gov/html/doh/html/environmental/lead-consumer-products.shtml>
- Mercury poisoning linked with skin-lightening products <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm294849.htm>
- Find a New York State certified laboratory to analyze mercury specimens by calling 518-485-5378 or visit <http://www.wadsworth.org/labcert/clep/CategoryPermitLinks/CategoryListing.htm>

Information for Patients

- [Eat Fish, Choose Wisely brochure](#) for pregnant and breastfeeding women and young children [[Español](#)][[中文](#)][[한국어](#)][[日本語](#)]
- Fish Consumption Advisories <http://water.epa.gov/scitech/swguidance/fishshellfish/fishadvisories/index.cfm>
- Health advice on eating fish you catch http://www.health.ny.gov/environmental/outdoors/fish/health_advisories/
- Mercury in Soaps and Creams <http://www1.nyc.gov/site/doh/health/health-topics/mercury-in-soaps-and-creams.page>