Mercury, Frequently Asked Questions

Exposure to mercury happens from breathing contaminated air, ingesting (taking in) contaminated water and food. Having dental and medical treatments may also be a cause. Mercury, at high levels, may damage the brain, kidneys, and a developing fetus.

WHAT IS MERCURY?

- Mercury is a naturally occurring metal. It has several forms. The metallic mercury is a shiny, silver-white, odorless liquid. If heated, it is a colorless, odorless gas.
- Mercury combines with other elements, such as chlorine, sulfur, or oxygen, to form inorganic mercury compounds or "salts." These are usually white powders or crystals. Mercury also combines with carbon to make organic mercury compounds. The most common one, methylmercury, is produced mainly by microscopic organisms in the water and soil. More mercury in the environment can increase the amounts of methylmercury that these small organisms make.
- Metallic mercury is used to produce chlorine gas and caustic soda. It is also used in thermometers, dental fillings, and batteries. Mercury salts are sometimes used in skin lightening creams. They may also be in antiseptic creams and ointments.

WHAT HAPPENS TO MERCURY WHEN IT ENTERS THE ENVIRONMENT?

- Inorganic mercury (metallic mercury and inorganic mercury compounds) enters the air from:
  - Mining ore deposits.
  - Burning coal and waste.
  - Manufacturing plants.
- It enters the water or soil from:
  - Natural deposits.
  - Disposal of wastes.
  - Volcanic activity.

Methylmercury may be formed in water and soil by small organisms. These are called bacteria. Methylmercury builds up in the tissues of fish. Larger and older fish tend to have the highest levels of mercury.

HOW MIGHT I BE EXPOSED TO MERCURY?

- Eating fish or shellfish contaminated with methylmercury.
- Breathing vapors in the air from spills, incinerators, and industries that burn mercury-containing fuels.
- Release of mercury from dental work and medical treatments.
- Breathing contaminated workplace air.
- Having skin contact during use in the workplace.
  - Dental.
  - Health services.
  - Chemical.
  - Other industries that use mercury.

HOW CAN MERCURY AFFECT MY HEALTH?

The nervous system is sensitive to all forms of mercury. Methylmercury and metallic mercury vapors are more harmful than other forms. More mercury in these forms reaches the brain. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and developing fetus. Effects on brain function may result in:

- Irritability.
- Shyness.
- Tremors.
- Changes in vision or hearing.
- Memory problems.

Short-term exposure to high levels of metallic mercury vapors may cause effects including:

- Lung damage.
- Nausea, vomiting and diarrhea.
- Increases in blood pressure or heart rate.
- Skin rashes.
- Eye irritation.

HOW LIKELY IS MERCURY TO CAUSE CANCER?

There is not enough human cancer data available for all forms of mercury. Mercuric chloride has caused increases in several types of tumors in rats and mice. Methylmercury has caused kidney tumors in male mice. The EPA has determined that mercuric chloride and methylmercury are possible human *carcinogens*. These are things that cause cancer.

HOW DOES MERCURY AFFECT CHILDREN?

- Young children are more sensitive to mercury than adults. Mercury in the mother's body passes to the fetus and may build up there. It can also pass to a nursing infant through breast milk. But the benefits of breastfeeding may be greater than the possible adverse effects of mercury in breast milk.
- Mercury's harmful effects that may be passed from the mother to the fetus include:
  - Brain damage.
  - Mental retardation.
  - Lack of coordination.
  - Blindness.
  - Seizures.
  - Inability to speak.
- Children poisoned by mercury may develop:
  - Problems of their nervous and digestive systems.
  - Kidney damage.

HOW CAN FAMILIES REDUCE THE RISK OF EXPOSURE TO MERCURY?

- Carefully handle and dispose of products that contain mercury. These include things like thermometers or fluorescent light bulbs. Do not vacuum up spilled mercury. It would vaporize and increase exposure. If a large amount of mercury has been spilled, contact your health department. Teach children to not play with shiny, silver liquids.
- Properly dispose of older medicines that contain mercury. Keep all medicines away from children.
- Pregnant women and children should keep away from rooms where liquid mercury has been used.
- Learn about wildlife and fish advisories in your area. Contact your public health or natural resources department.

IS THERE A MEDICAL TEST TO SHOW WHETHER I'VE BEEN EXPOSED TO MERCURY?

Tests are available to measure mercury levels in the body. Blood or urine samples are used to test for exposure to metallic mercury and to inorganic forms of mercury. Mercury in whole blood or in scalp hair is measured to determine exposure to methylmercury. Your caregiver can take samples and send them to a testing laboratory.

HAS THE FEDERAL GOVERNMENT MADE RECOMMENDATIONS TO PROTECT HUMAN HEALTH?

- The EPA has set a limit of 2 parts of mercury per billion parts of drinking water (2 ppb).
- The Food and Drug Administration (FDA) has set a maximum permissible level of 1 part of methylmercury in a million parts of seafood (1 ppm).
- The Occupational Safety and Health Administration (OSHA) has set limits of 0.1 milligram of organic mercury per cubic meter of workplace air (0.1 mg/m^3) and 0.05 mg/m^3 of metallic mercury vapor for 8-hour shifts and 40-hour work weeks.

WHERE CAN I GET MORE INFORMATION?

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health department. Contact the Agency for Toxic Substances and Disease Registry by phone: 800 232-4636 or web site: www.atsdr.cdc.gov/

Information courtesy of Agency for Toxic Substances and Disease Registry. This is a branch of the CDC.

Document Released: 12/20/2004 Document Re-Released: 03/16/2010
ExitCare® Patient Information ©2011 ExitCare, LLC.