

Mercury Quick Facts for School Nurses

What is Elemental Mercury?

Elemental (metallic) mercury is the shiny, silver-gray metal found in thermometers, barometers, thermostats and other electrical switches. Mercury:

- Can break into droplets when spilled. The droplets spread easily and can build up in tiny cracks and spaces wherever it is spilled.
- Can vaporize (evaporate) into the air in the school. The vapor cannot be seen or smelled.
- Can be toxic to the nervous system, lungs and kidneys.



How can people be exposed to mercury at school?

When elemental mercury is spilled, or a device containing mercury breaks, the spilled mercury can vaporize and become an invisible odorless toxic vapor. This is especially true in warm, poorly-ventilated rooms or spaces. If mercury is spilled onto a hot surface, such as a hot surface in a laboratory, mercury will vaporize very quickly and can be more dangerous. Exposure can last a long time if the spill is not cleaned up promptly and properly. Breathing mercury vapors is the most common way to be exposed to elemental mercury, and is the most harmful to your health. If mercury is swallowed, most of it passes through your body and very little is absorbed. If you touch mercury for a short period of time, a small amount may pass through your skin, but typically not enough to harm you.



How much mercury spilled in a room will make air in the room unsafe?

Any amount of mercury spilled indoors can be hazardous. The more mercury is spilled, the more its vapor will build up in air and the more hazardous it will be. Even a small spill, such as from a broken laboratory thermometer, can produce hazardous amounts of vapor if the room is small enough, warm enough, and people spend a good deal of time there.

If there is a spill the area should be evacuated quickly and cleaned up properly.



EPA testing air in a school following a mercury spill

Sources of Mercury in Schools

- Glass thermometers
- Thermostats
- Blood pressure devices in medical offices
- Mercury switches
- Gauges: Manometers, barometers, vacuum gauges
- Bulk elemental mercury in science laboratories
- Fluorescent lamps
- Mercury brought to school by students or others



What are the Health Effects of Mercury Exposure?

The health effects that can be caused by breathing mercury depend on how much mercury vapor you breathe and how long you breathe the vapors. Health problems can result from short-term or long-term mercury exposure.

Who is most likely to have health problems after breathing mercury vapors?

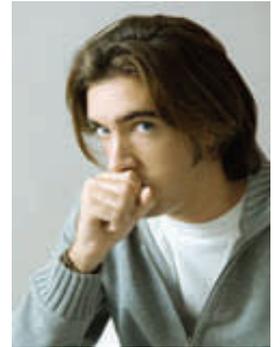
The following groups of people are particularly sensitive to the harmful effects of mercury:



- Young children - They tend to play on floors where mercury may have been spilled, and are more likely to breathe more vapors than an adult because they breathe faster and have smaller lungs.
- Pregnant women - Mercury can pass from a mother's body to her developing fetus.
- Infants - Mercury can also be passed to nursing infants through breast milk.

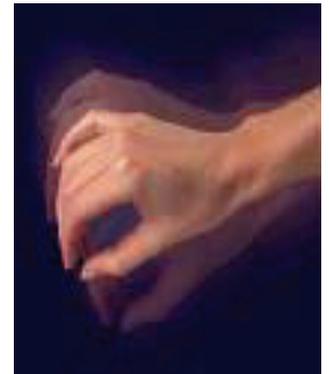
Health effects caused by short-term exposure to high levels of mercury vapors

- Cough, sore throat
- Shortness of breath
- Chest pain
- Nausea, vomiting, diarrhea
- Increase in blood pressure or heart rate
- A metallic taste in the mouth
- Eye irritation
- Headache
- Vision problems



Health effects caused by long-term exposure to mercury vapors

- Anxiety
- Excessive shyness
- Anorexia
- Sleeping problems
- Loss of appetite
- Irritability
- Fatigue
- Forgetfulness
- Tremors
- Changes in vision
- Changes in hearing



What tests are available for elemental mercury exposure?

Urine or blood samples can be tested to see if you have been exposed to too much mercury. A urine test is preferred for measuring elemental mercury. Urine samples may be collected over a 24-hour period, or taken once (preferably in the morning after awakening). A blood test can be used to measure exposure to high levels of mercury if you can be tested within three days of being exposed.

If a test shows you have mercury poisoning (too much mercury in your body), your doctor can give you drugs that will remove the mercury from your body. Call the Poison Control Center toll-free, 1-800-222-1222, if you or your doctor need help understanding your test results.

What to do when Mercury is Spilled in Your School

School staff trained in hazardous material spill cleanups may clean up small mercury spills. If more than two tablespoons of mercury are spilled consider hiring a professional emergency response contractor to clean up the spill.

School nurses should follow these steps when a mercury spill occurs in the school:

Step 1. Assist in evacuation of the spill area.



Be sure all shoes, clothing and other articles that got mercury on them are left in the spill area.

Step 2. Have people who got mercury on their skin wash exposed areas with soap and water.



Exposed people should wash as soon after exposure as possible.

Step 3. If someone has inhaled mercury vapor, or ingested mercury, call the Poison Control Center, 1-800-222-1222.



If you have general health questions about mercury exposure, you may also call the Agency for Toxic Substances and Disease Registry (ATSDR) Region 7 Office at (913) 551-1310 or (913) 551-1312.

Step 4. Notify parents of students who may have been exposed to mercury or mercury vapors during the spill.



Provide copies of the flier, "Mercury Quick Facts - Health Effects of Mercury Exposure" for students to take home.

Step 5. Be sure the air in the spill area is tested prior to reoccupancy.



Be sure mercury vapor levels are lower than levels at which health effects may occur.

Ways School Nurses Can Reduce the Risk of Exposure to Mercury in Schools

- **Identify mercury sources in your office.**
 - **Replace mercury-containing devices with mercury-free devices when possible.**
 - **Take steps to prevent breakage and spills of mercury until mercury-free devices can be purchased. For example, check wall mounts on a mercury sphygmomanometer to be sure they are secure.**
- **Promote the proper management and recycling of mercury and mercury-containing products in the school.**
 - **When disposing of mercury, or devices that contain liquid mercury, place the items in a plastic bag and seal. Place the plastic bag in another plastic bag and seal. Place the plastic bag in a covered, non-breakable container such as a plastic bucket. Label the container "Mercury-Containing Devices." Contact the local solid waste management facility to get directions on proper disposal.**
- **Promote the use of alternative products that do not contain mercury, such as mercury-free laboratory thermometers.**
- **Promote proper spill cleanup.**
- **Participate in a team to inventory all mercury sources at the school.**
 - **Use the results of the inventory to set priorities for proper disposal or recycling and replacement of mercury and mercury-containing items. Prioritize disposal of containers of liquid mercury and items most likely to break.**
- **Work with your team to develop a mercury spill response plan. Make sure school staff know their role and whom to contact in the event of a spill.**
- **Send the message home with students!**
 - **Give students and their families the tools needed to evaluate mercury use in their homes and learn about less toxic alternatives. For example, families can replace mercury-containing thermometers with digital thermometers.**

If you have mercury or health-related questions:

Call the U.S. EPA at (913) 281-0991 for information about mercury spill cleanup. Call the Agency for Toxic Substances and Disease Registry (ATSDR) at (913) 669-3924, or (913) 669-2589 if you have health-related questions.