

Action Steps for School Nurses

- Identify mercury sources in your office. Decide whether you need to use the mercury-containing items until mercury-free replacements can be obtained. If they are used, take necessary steps to prevent breakage and spills. Protect mercury-containing devices (for instance, check wall mounts on a mercury sphygmomanometer to be sure they are secure) until a mercury-free replacement can be installed. (See “Facility-Wide Inventory of Mercury and Mercury-Containing Devices,” for suggestions.)
- If they are to be discontinued, double bag any item containing liquid mercury by placing it in two plastic bags, one inside the other. Securely tape each plastic bag closed and place the item in a covered, non-breakable container such as a plastic bucket. Label the container “Mercury-Containing Devices” and store it in a locked cabinet or room until it can be properly disposed of or recycled.
- When available, replace your instruments with mercury-free alternatives. If mercury-containing fever thermometers or sphygmomanometers break, the spill can result in significant exposure to mercury vapors and costly cleanups. Sphygmomanometers can contain up to several pounds of elemental mercury. Mercury thermometers are NOT required for students with disabilities or any special student population.
- Be part of a team to conduct an inventory of mercury sources in the school. A school-based team might include representatives from the school nurse’s office, buildings and grounds, science classrooms, Board of Cooperative Educational Services (BOCES), your school’s Parent Teacher Association (PTA) and the school’s health and safety committee. An inventory tool has been developed for your use (see “Facility-Wide Inventory of Mercury and Mercury-Containing Devices”). When conducting an inventory, make a special effort to search for containers of liquid mercury. They may have been used for demonstrations and might be found in science classrooms or storerooms. Use the results of the inventory to set priorities for proper disposal/recycling and replacement of mercury items most vulnerable to breaking and spilling.
- Work with your team to develop a mercury spill response plan. While not required, a spill response plan might fit well as an appendix to your school’s building-level emergency plan. Make sure school staff know their role and whom to contact in the event of a spill. Even a few drops of mercury need to be cleaned up properly.
- Never use a vacuum cleaner, mop or broom to clean up a mercury spill!** If you do not know the cleanup protocol, do not attempt the cleanup because you might spread the contamination. (Refer to “Guidelines for Cleanup of Mercury Spills”.)
- Participate in health fairs, science fairs, and other school-based and community activities to help raise awareness among staff, parents and others about mercury exposure and health concerns.



Contact names and numbers

For health questions or to get more brochures:

New York State Department of Health (NYSDOH)
(800) 458-1158 or e-mail at ceheduc@health.state.ny.us
<http://www.health.state.ny.us/nysdoh/envIRON/hsees/mercury/index.htm>

For questions about recycling and disposal:

New York State Department of Environmental Conservation (NYSDEC)
Division of Solid and Hazardous Materials
(518) 402-8633
NYSDEC Small Quantity Generator Helpline
(800) 462-6553
www.dec.ny.gov

To report a spill:

NYSDEC Spill Cleanup and Reporting Hotline
(800) 457-7362

For additional information:

NYSDEC Division of Environmental Permits, Pollution Prevention Unit
(518) 402-9469
www.dec.ny.gov

In New York City:

To report a mercury spill in a NYC Public School or to get more information about mercury, call the Department of Education Office of Environmental Health and Safety at (718) 361-3808.

To report a mercury spill in a private NYC school call 3-1-1 and ask to be connected to the Department of Environmental Protection (DEP) HazMat.

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NOTE:

These brochures are intended to provide information and lessons learned. They are not intended to replace school district requirements for training and personal protective equipment.



This is a true story. It could happen in your school or your community.

A 14-year-old boy developed a rash. Several weeks later he couldn't sleep well, had back spasms, painful urination, a sore throat and night sweats. Medical specialists were consulted, but they couldn't make a definite diagnosis. The boy was admitted to the hospital...



...During discharge, his mother mentioned he'd be happy to play with his mercury again. This chance comment was a breakthrough. A urine sample showed severe mercury poisoning. It took four rounds of chelation therapy to remove the mercury from his body. The boy had taken mercury from a middle school science lab, played with it, and given it to several friends. During play, the children spilled the liquid in several homes and in a minivan. Vacuuming had spread it further. The US Environmental Protection Agency (EPA) and contractors evaluated five homes, the minivan, a doctor's clinic, the school and the hospital for contamination. Special disposal was required and carpeting, bedding and personal items replaced. Twenty-three people, ages 2-49, were identified as potentially exposed. Six people showed signs of mercury poisoning; five required chelation. One person was hospitalized for pain management. While the last medical follow-up on these patients showed normal urine mercury levels and no further symptoms, the long-term health consequences for these people are not known.

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Reducing mercury in schools is an important goal for school nurses, science teachers, buildings and grounds personnel, health and safety committees, superintendents, school boards, principals, parents and students. This brochure will help you find mercury sources in your school and avoid potential spills.

Brochures in this series

- Mercury and Schools: A Risky Combination
- Reducing Mercury in Schools: Superintendents, Principals, and School Boards
- Reducing Mercury in Schools: Science Teachers
- Reducing Mercury in Schools: Buildings and Grounds Superintendents
- Reducing Mercury in Schools: Health and Safety Committees
- Reducing Mercury in Schools: School Nurses
- Facility-Wide Inventory of Mercury and Mercury-Containing Devices
- Guidelines for Cleanup of Mercury Spills
- Disposal and Recycling Options for Mercury and Mercury-Containing Devices

What is Mercury?

Mercury is an element that occurs naturally in the earth's surface. The form of mercury that poses an exposure concern in schools is known as elemental mercury, or simply, mercury. Mercury is a silvery, liquid metal that releases mercury vapor into the indoor air at room temperature. It is fascinating to children because it easily breaks up into many smaller droplets.

Mercury is a concern for human health and for the environment. It does not degrade and is not destroyed by burning, which is why proper disposal and recycling are essential.

Mercury Exposure is a Health Concern

Spilled liquid mercury is a health concern. The central nervous system is probably the most sensitive target organ for mercury vapor exposure. Mercury vapors can affect different areas of the brain, resulting in a variety of symptoms. Some symptoms from exposure to high levels of mercury vapor, or from long-term exposure to low levels, can include memory loss, headache, sleeplessness, irritability and tremors. Short-term exposure to high levels can also cause coughing, shortness of breath, chest pain, nausea, vomiting, diarrhea, fever, high blood pressure and skin rashes. Young children's exposure to mercury is of particular concern because their nervous systems are still developing.

Exposure to elemental mercury can occur by breathing mercury vapors, eating or swallowing contaminated food or drinks, or having skin contact with liquid mercury. After a spill, people can be exposed by breathing in mercury vapors. The body absorbs relatively little mercury from eating or through skin contact. Inhaled mercury vapor is readily absorbed from the lungs into the bloodstream. It is then transported to other parts of the body, including the brain and kidneys. Just a few drops of mercury can produce harmful vapor levels in enclosed spaces such as rooms or vehicles. Exposure can last a long time if the spill is not properly cleaned. Since mercury vapor is colorless and odorless, people are not aware that the air contains mercury or that they are breathing mercury vapor. If there is a spill, the area should be evacuated quickly and cleaned up properly. There is little reason to expect an adverse health outcome from a short-term exposure to low levels of mercury.

Pediatricians can help parents determine if biological sampling is needed. Pediatric environmental health physicians and clinics can help interpret sampling results because they have more experience with heavy metals exposure. Children who have had mercury poisoning should undergo periodic follow-up neurological examinations.

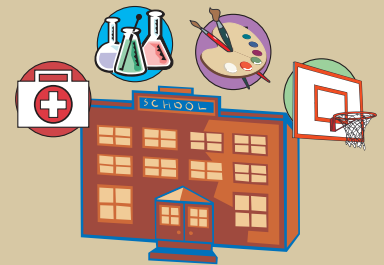
The New York State Heavy Metals Registry is a program that monitors mercury exposures. The State Sanitary Code requires every doctor, clinical laboratory and health facility in New York State to report to the State Health Department, within

10 days, a patient's blood or urine mercury test result that is greater than or equal to 5 nanograms mercury per milliliter in blood, or 20 nanograms mercury per milliliter in urine.

Usually, but not always, mercury exposures are occupational. Chelation therapy is a medical treatment used to remove heavy metals from body tissues. Chelation itself poses some health risks. It should be considered only when appropriate specialists determine it is necessary to reduce immediate and significant health risks due to high levels of mercury in the body.

Mercury Sources in Schools

Instruments containing mercury can be found virtually anywhere on school property – in the nurse's office, science rooms, gymnasiums, art rooms and boiler rooms. Liquid mercury is used in instruments that measure temperature (thermometers), pressure (barometers or sphygmomanometers), humidity (hygrometers), vacuum (laboratory manometers), flow (water meters) and air speed (anemometers). Mercury can also be found in lights (particularly gymnasium and fluorescent lights), thermostats, heating/ventilation and air conditioning (HVAC) systems, plumbing systems, cafeteria equipment, medical devices, regulators, gauges and science room equipment.



The State Health Department recommends that containers of elemental mercury identified by staff or found during an inventory be given the highest priority for removal. Should a spill occur, many individuals could be exposed resulting in health effects, significant cleanup costs and widespread environmental contamination. Legislation banning the purchase or use of elemental mercury in primary and secondary schools in New York State became effective September 4, 2004. Check with the Office of Facilities Planning in the State Education Department (518-474-3906) or, in NYC, the Office of Environmental Health and Safety in the Department of Education (718-361-3808) for the latest information about this and other initiatives for removing mercury from schools.

Sometimes, children or adults bring mercury into the school. Children might find it in storage areas or other places and bring it into school as a novelty. Elemental mercury is used by some cultures in folk medicines and for cultural and religious practices. Some religions in Latin American and Caribbean cultures use mercury called *azogue* or *vi dajan* in their rituals. It is sold in stores, such as botanicas, that specialize in certain religious items used in Espiritismo, Santeria and Voodoo. Typically *azogue* is worn as an amulet of liquid mercury or sprinkled on personal possessions. Some traditional Asian (including Chinese and Indian) and Mexican-American remedies for stomach disorders contain mercury. These cultural, medicinal and religious uses of mercury can lead to mercury exposure and possibly to health effects.