Don’t Mess With Mercury

Ana Pomales-Schickli
Health Educator

National Conference of State Legislators
October 16, 2015
Presentation Objectives

After this presentation, the participant should be able to discuss:

– Elemental mercury
  • Properties
  • Where mercury can be found
  • Public health issues

– Mercury spill response in a school

– Don’t Mess With Mercury Website
  • School mercury policies
WHAT DO YOU KNOW ABOUT MERCURY?
Elemental mercury

- Heavy metal, liquid at room temperature
- Evaporates into a colorless, odorless vapor
- Toxic to the brain, kidneys, and other organs
- More toxic to children than adults

(National Geographic Society, 1972)
WHERE IS MERCURY FOUND?
Where is elemental mercury found?

- Thermometers
- Sphygmomanometers (blood pressure machines)
- Thermostats
- Barometers
- Electrical switches
- Flow meters
- Mercury gauges
- Batteries
- Science labs
- High pressure sodium lamps
- Compact fluorescent light bulbs
MERCURY HEALTH EFFECTS
Elemental Mercury Exposure

• Inhalation
  – Easily inhaled
  – Crosses blood/brain barrier
  – Crosses placental barriers
  – Enters breast milk

• Dermal
  – Little absorbed

• Ingestion
  – Little absorbed
4 Year Old Who Drank Mercury

Mercury in Intestines

Mercury in Lungs
Symptoms of Short Term High Level Exposure

- Cough
- Sore throat
- Shortness of breath
- Nausea and vomiting
- Diarrhea
- Fast heart rate
- Headache
- Vision problems
- Metallic taste in mouth
Symptoms of long term exposure

- Anxiety
- Excessive shyness
- Insomnia
- Loss of appetite
- Irritability
- Fatigue
- Forgetfulness
- Tremors
- Changes in vision and hearing
WHAT I HAVE LEARNED RESPONDING TO MERCURY SPILLS IN SCHOOLS
Mercury Spills in Schools

- Most frequent chemical in school incidents
- Exposure to mercury vapors
- Other consequences:
  - Expensive clean-ups
  - Evacuations
  - School closures
- Contamination
  - School
  - School buses
  - Houses
Ballou High School Mercury Spill

- 1 cup of mercury spilled
- Contamination
  - School
  - School buses
  - Houses
- School closed 35 days
- Cleanup cost
  $1,500,000
Mercury contaminated school bus
Kitchen contaminated with mercury

Before Cleanup

After Cleanup
DON’T MESS WITH MERCURY WEBSITE
Mercury Free School Policies

- Mercury audit
- Mercury-free alternatives
- Disposal
For Students Page
www.atsdr.cdc.gov/dontmesswithmercury/students

- Designed for 6-8 grade
- Interactive
- Social media links
Brain & Nervous System

Mercury may cause damage to the nervous system, especially the brain. Brain damage from mercury poisoning can cause people to have:

- Trouble remembering things
- Difficulty sleeping
- Changes in mood, like feeling cranky, nervous, tired, or shy
- Numbness in the hands and feet
- Trembling (shaking)
- Problems with muscle coordination (tripping, dropping things, falling down)
Video Game

DON'T MESS WITH MERCURY

LEVEL 1

AVOID MERCURY POISON TOUCHING STUFF
Teachers DMWM Lesson Plans

• Teacher-led learning
  – student public service announcements

• Computer-based learning
  – Student PowerPoint presentations
  – Student public service announcements

• Standards
  – Next Generation Science Standard
  – Common Core Language Arts Standards
  – Grades 6-8
DMWM Contact information

Ana Pomales-Schickli
apomales@cdc.gov

Dr. Michelle Watters
aax6@cdc.gov

http://www.atsdr.cdc.gov/dontmesswithmercury/