Mercury Poisoning

Background:

- Mercury is a natural element that can be found in the environment and live in many forms. It can be liquid, solid, or gas form.
- "These forms can be organized under three headings: metallic mercury (elemental mercury), inorganic mercury, and organic mercury" (1). According to the ATSDR, metallic mercury is a shiny, silver-white metal that is a liquid at room temperature.
- Within the three style of mercury, Acrodynia. Acrodynia is a disease that affecting children 18 and younger.
- Mercury poisoning is caused by contact to the mercury or the compounds.
- One of the three parts of Mercury is Inorganic, which like the other three forms of mercury that is ban from certain states and countries around the world. The ATSDR stated in public health statement, "Inorganic mercury compounds occur when mercury combines with elements such as chlorine, sulfur, or oxygen. These mercury compounds are also called mercury salts" (2).
- Mercury is a heavy metal poison that mainly affects the central nervous system, liver, and the brain. An element can be found in the environment, cars, homes, and schools.
- Some of the symptoms of mercury poisoning are vision, hearing, and speech loss.
- Mercury is mostly found in fish and other seafood meals that most people eat on a daily basic. The ATSDR talks how mercury enters the food chain through the form of methyl mercury. "When small fish eat the methyl mercury in food, it goes into their tissues" (5).

Environment

- Mercury is a heavy metal that was found throughout the environment. Mercury is present in fuel, water, wind, homes, and other materials that people use on a daily basic. "Estimates of the total annual mercury releases that result from

human activities ranges from one-third to two thirds of the total mercury release" (4). The amount of mercury that is found in the air does not affect the average person. The people that are affected are coil miner, factory workers, and people that eat a large amount of seafood.

- Mercury poisoning can is found in most people that have a diet that mostly includes fish, shellfish, and marine mammals. These mammals and other sea life creatures come from mercury-contaminated water. This on mercury poisoning comes from the ATSDR report on mercury poisoning. That I researched on the CDC website. The eating of seafood and other mammals is a big issue to the FDA and EPA.
- In March 2004, the FDA and EPA issued a jointed consumer advisory about mercury in fish and shellfish. "The advice was for: women who might become pregnant: women who are pregnant; nursing mothers; and young children […] the purpose of the advisory was to get positive health benefits from eating fish and shellfish, while minimizing their mercury exposure"(1).
- The FDA and EPA came together to decrease the number of people getting mercury poising. Together both agencies came up with three to reduce the in take of mercury. "(1) Do not eat shark, Swordfish, King Mackerel, or Tilefish because they contain high levels of Mercury. (2) Eat up to 12 ounces a week of a variety of fish and shellfish that are lower in mercury. (3) Check local advisories about the safety of fish cause by family and friends in your local lakes rivers, and coastal areas. If no advice is available, eat up to 6 ounces per week" (1).
- Looking at the table 5.1, 5.3, and 5.5 shows the amount of mercury products at solid waste, atmospheric, and manufactures. The tables shows, how much mercury affected the environment as a whole. Also on the back of this paper is a formula that tells the break down of chemicals in air, water, body.

Affects the body

- People are exposed to mercury through breathing the air, drinking water, working at a factory, eating seafood, and having contact with the metal.

- Mercury can stay within the body for weeks. "When you breathe in mercury vapors, however, most of the mercury enters your bloodstream directly from your lungs, and then rapidly goes to other parts of your body, including the brain and kidneys. The form of mercury that is found with the body is Metallic, inorganic, and Methyl mercury. Each form of mercury can affected the brain, kidneys, and lungs for a long period.
- The nervous system is one of the most sensitive to mercury. Mercury poisoning is found around the world. However, one of the leading causes is fish that is contaminated with large amount of Methyl mercury. "Permanent damage to the brain has also been shown to occur from exposure to sufficiently high levels of metallic mercury" (13). With the rise of mercury poison in children, other symptoms that people should look for is "constipation, worms, teething discomfort, swollen red gums, excessive salivations, weight loss, diarrhea and abdominal pain"(16).
- Acrodynia, which is known as pink disease, is another type of mercury poison that affects children and some adults. The affects of Acrodynia are, "sever leg cramps; irritability; and abnormal redness of the skin, followed by peeling of the hands, nose and soles of the feet. Itching, swelling, fever, fast heart rate, sleeplessness, and/or weakness may also be present" (17).

A Health Future

- **General Assembly State of Connecticut** (http://search.cga.state.ct.us/2005/tob/h/2005HB-06522-R00-HB.htm)

Proposed Bill No. 6522-LCO No. 2520

An act concerning labeling of fluorescent Light Bulbs Containing Mercury. Be it enacted by the Senate and House of Representatives in General Assembly Convened: That the general statutes are amended to require labeling of fluorescent light bulbs containing mercury.

- **General Assembly State of Connecticut** (http://search.cga.state.ct.us/2005/tob/s/2005SB-01187-R00-SB.htm)

Proposed Bill No. 1187-LCO No. 3992

Sec 2. (a) No motor vehicle manufacturer may sell a motor vehicle manufactured on or after January 1, 2007, that contains a mercury switch or mercury headlamp. (b) On and after January 1, 2007, no person may sell or distribute a mercury switch or mercury headlamp for installation in a motor vehicle.

- **8 Environnemental Health**
  (http://healthypeople.gov/Document/HTML/Volume1/08Environmental.htm)
  8-25. (Developmental) Reduce exposure of the population to pesticides, heavy metals, and other toxic chemicals, as measured by blood and urine concentration of the substances or their metabolites.

  8-27. Increase or maintain the number of Territories, Tribes, and States and the District of Columbia that monitor diseases or conditions that can be caused by exposure to environmental hazards.

  Number of Jurisdictions

  1997 Baseline-14 2010 Target-20

- **2004 FDA/EPA Consumer Advisory: What You need to Know**
  http://www.fda.gov/oc/opacpm/hottopics/mercury/backgrouder.html

FDA and EPA are planning a comprehensive educational campaign to reach: women who might become pregnant; pregnant women; nursing mothers; and young children. The agencies will work with state, local tribal health departments to get information out into their communities. Physicians, other health professionals, and health care associations will be sent information to distribute thought their office. Extensive outreach thought the media is also planned. Radio and television stations, health editors at newspapers, magazines, and other popular media will be contacted to encourage them to carry the public service message. The methyl mercury advisory will also be an important part of a comprehensive food safety education program to be used by educators of pregnant women.

Bibliography

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Mercury Poisoning (Class Handout)

- Mercury is a natural element that can be found in the environment and live in many forms. It can be liquid, solid, or gas form.
- Mercury poisoning is caused by contact to the mercury or the compounds.
- Mercury is a heavy metal poison that mainly affects the central nervous system, liver, and the brain. An element can be found in the environment, cars, homes, and schools.
- Mercury poisoning can is found in most people that have a diet that mostly includes fish, shellfish, and marine mammals.
- In March 2004, the FDA and EPA issued a jointed consumer advisory about mercury in fish and shellfish.
- Looking at the table 5.1, 5.3, and 5.5 shows the amount of mercury products at solid waste, atmospheric, and manufactures. The tables shows, how much mercury affected the environment as a whole.
- People are exposed to mercury through breathing the air, drinking water, working at a factory, eating seafood, and having contact with the metal.
- The nervous system is one of the most sensitive to mercury. Mercury poisoning is found around the world. However, one of the leading causes is fish that is contaminated with large amount of Methyl mercury.
- Dental Amalgams-Effects the heart and also have been observed in children after they accidentally swallowed mercuric chloride.
- In case of emergency one should call the local (city, or state health department) and tell them of a spill mercury, or Agency for Toxic Substances and Disease Registry. Also call 1-888-422-8737 or 1-888-Seafood
- Can be found in:
    - Heating and cooling systems
    - Jewelry
    - Thermostats
    - Dental Amalgam-is use to fill cavities in teeth.
    - Automotive Parts
    - Skin Cream & Nasal spray.

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