

Children's Health and Environment Fact Sheet



Mercury

NATIONAL CONFERENCE of STATE LEGISLATURES

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Summary

Mercury, a toxic metal released through both natural and human activities, has gathered increasing attention among policymakers, activists and industry. Mercury pollution is both a local and global issue, since it can stay in the atmosphere for long periods of time and traverse thousands of miles before settling on water or land. Awareness of mercury exposure has grown in the United States, partially due to EPA and FDA efforts to warn consumers about the risks that mercury-contaminated fish can pose to the developing fetus or child. Because mercury-laden fish have been found in an increasing number of lakes, rivers and coastal waters, states are considering a range of policies to keep children safe from this toxic metal.

More than 300,000 babies born in the United States each year may be at increased risk of adverse developmental effects due to the mercury exposure of their mothers.¹

Key Issues

Concern about mercury exposure has been increasing, in part due to government agency warnings issued about the hazards of mercury in fish. EPA has found that certain fish contain mercury levels that may pose harm to the unborn children of mothers who consume too much mercury-contaminated fish. The fetus is particularly susceptible to mercury exposure because mercury can disrupt critical stages of brain development, resulting in decreased intelligence or mental retardation.

Mercury is used in a host of consumer items, from thermometers to dental fillings. It reaches the environment through both natural and industrial processes, including smelting, incineration and coal-fired power production. According to the U.S. Environmental Protection Agency (EPA), nearly 87 percent of the mercury released by human activity in the United States results from combustion—including burning waste or fossil fuels. The single largest U.S. contributors are coal-fired power plants.²

Mercury comes in different forms, some of which are more hazardous than others. Elemental mercury is used in thermometers and emitted in vapor from coal-fired power plants. Once in the environment, microbes transform some of the elemental mercury into methylmercury, which is very toxic. Methylmercury concentrates in the aquatic food chain, entering our diets in the form of fish and shellfish.

Mercury in Vaccines

Some parents are concerned that thimerisol, the mercury preservative used in certain vaccines, may cause autism in their children. According to both the Centers for Disease Control and Prevention and a May 2004 report by the Institute of Medicine, there is no causal link between thimerisol and autism in children.^{3, 4} The perceived association is merely the result of timing, doctors say, since autism symptoms tend to emerge around the same age that children receive vaccinations. As a precautionary measure, however, vaccine manufacturers have removed the pre-

servative from some vaccines—currently, vaccines used to protect preschoolers against 12 major infectious diseases do not contain thimerisol. The U.S. Food and Drug Administration regulates vaccine safety.

A Legislator's View

“I authored and passed legislation a few years ago to reduce the use of mercury thermometers,” says Senator Beverly Gard of Indiana. “We also banned certain consumer products that contain mercury and passed a law that schools cannot use mercury in their laboratories,” she adds. Regarding power plants, she regards the mercury issue as more complex. Because most of Indiana’s power comes from coal, “we would prefer to see regulation addressed at a national level,” says Gard. What about Indiana’s statewide fish advisory? “We do have a lot of fish advisories, but we also do a lot of testing—if other states did as much testing as we do, they’d likely have more advisories, too.”

Figure 1. Statewide Fish Consumption Advisories

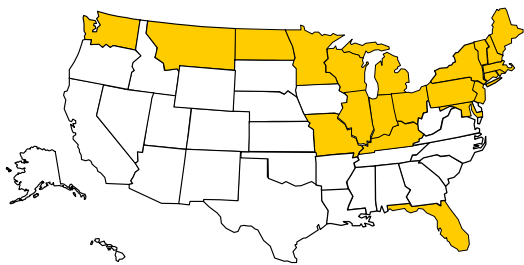
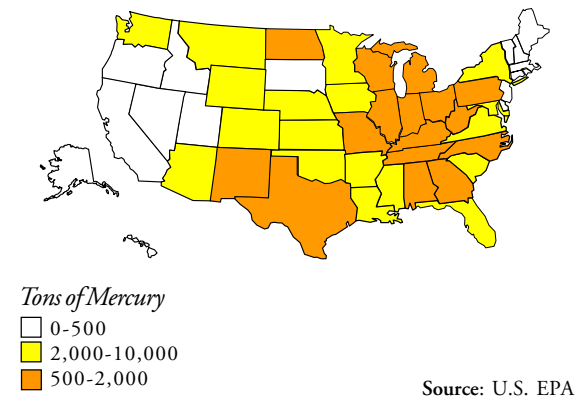


Figure 2. Yearly Mercury Emissions



State Concerns

The importance of the mercury issue varies from state to state. A state's dependence on coal-fired power and whether the state is downwind of coal-burning neighbors may influence the direction of its policies. The importance of sport fishing also plays a role.

Mercury is the primary reason for state fish consumption advisories. Recently released EPA data show that 48 states issued consumption advisories for residents. Thirty-one states have advisories statewide.⁵

What are the best approaches for reducing mercury in the environment? The science is very complex, but researchers at the University of Florida found that mercury levels in the Florida Everglades dropped dramatically after incinerators and battery manufacturers reduced their release of the metal.⁶

State Action

Since 2000, 30 state legislatures have introduced more than 200 bills that deal with mercury; 39 have been enacted. Much of the enacted legislation focuses

on preventing exposure through reducing the use of mercury-containing consumer products, such as mercury thermometers. California, Connecticut, Indiana and Maine are among the states that have restricted the sale of products that contain mercury.

California has posted warnings at stores and restaurants that sell seafood, stating that fish may contain potentially harmful mercury.

The debate over how to reduce mercury in the environment is particularly heated in regard to the largest U.S. contributor of mercury emissions, coal-fired power plants. Currently, mercury emissions from power plants are not regulated by the federal government. The proposed EPA program, which reduces mercury emissions 30 percent by

2008 and 70 percent by 2025, has been criticized because that it doesn't go far enough fast enough and leaves "hot spots," a term for areas where mercury emissions may concentrate.⁷ As a result, many states are considering their own regulations for mercury emissions, and some have introduced legislation

asking EPA to move more quickly.

Connecticut enacted legislation in 2002 (House Bill 6048) requiring coal-fired power plants to reduce mercury emissions by 90 percent, beginning in 2008. Other states—such as Massachusetts, New Jersey, and Wisconsin—have addressed mercury reduction through rulemaking. The Massachusetts Executive Office of Environmental Affairs issued regulations requiring an 85 percent reduction of mercury by 2006 and a 95 percent reduction by 2012. The New Jersey Department of Environmental Protection regulations require a 90 percent reduction by 2007 and also require steel smelters and municipal incinerators to meet significant mercury reduction targets.

On the Horizon

States that feel the federal government is not moving fast enough on the mercury issue are likely to look at regulating emissions from incinerators, power plants and other sources.

Mercury reduction efforts will require cooperation with other nations, since EPA estimates that 40 percent of the mercury that settles in the United States comes from other countries.⁸ Rapidly developing nations such as China, where mercury emissions are increasing, are of particular concern.

Resources

For more information about mercury and other children's environmental health issues, visit NCSL online. Resources include a new video and book on children's health and the environment and many other publications. Visit www.ncsl.org/programs/esnr/toxics.htm or call (303) 364-7700, ext. 1341.

Notes

1. Kathryn R. Mahaffey, et al., "Blood Organic Mercury and Dietary Mercury Intake: National Health and Nutrition Examination Survey, 1999 and 2000," *Environmental Health Perspectives* 112, 5 (April 2004).
2. EPA Mercury Study Report to Congress, 1998: www.epa.gov/ttn/oarpg/t3/reports/merover.pdf.
3. Centers for Disease Control and Prevention Web page: www.cdc.gov/nip/vacsafe/concerns/thimerosal.
4. Institute of Medicine, *Immunization*

Safety Review: Vaccines and Autism (Washington D.C., 2004).

5. U.S. EPA Factsheet: *National Listing of Fish Advisories* (August 24, 2004).

6. University of Florida Web posting: www.napa.ufl.edu/2004news/mercurylevels.htm.

7. Kavan Peterson, "States ahead of EPA in cutting mercury pollution," *Stateline.org* (February 4, 2004).

8. U.S. EPA: www.epa.gov/ttn/atw/combust/utiltox/hgwt1212.html.

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