

Mercury and Developmental Disabilities in Maine's Children

A Briefing Report from:
State Environmental Leadership Program
Natural Resources Council of Maine
Learning Disabilities Association of
Maine

OVERVIEW

The American public is warned on a regular basis that mercury – including, in particular, mercury pollution from power company smoke stacks – is a major public health threat. The danger posed by mercury is of greatest concern when it comes to pregnant women and the risk of developmental disabilities in their offspring. **But what has not yet been discussed is that pregnant women and children in certain states – including Maine – may face an above-average risk of unsafe mercury levels and resulting childhood learning problems.**

This backgrounder report explores what is understood about mercury and the danger posed to pregnant women and children in Maine.

THE EXTENT OF THE MERCURY PROBLEM IN THE U.S.

The Center for Disease Control and Prevention (CDC) conducted a recent study that for the first time measured mercury levels in the blood of women and children across the country and found that about one in six –nearly 16 percent – of women of childbearing age have mercury levels above what is considered safe by the U.S. Environmental Protection Agency. This translates to 4.7 million women of childbearing age nationwide with potentially unsafe levels of mercury and approximately 630,000 newborns in the nation who are at risk of neurological and developmental health impacts each year. *Schober, S.E. et al. "Blood Mercury Levels on US Children and Women of Childbearing Age, 1999-2000." 2003. JAMA Vol.289, No13 (April 2, 2003): 1667-1674.*

Based on surveys of fish consumption, the National Academy of Sciences National Research Council estimated in 2000 that 60,000 newborns each year may be at risk for adverse neurological effects from in utero exposure to mercury. "The population at



highest risk is the children of women who consumed large amounts of fish and seafood during pregnancy. The committee concludes that the risk to that population is likely to be sufficient to result in an increase in the number of children who have to struggle to keep up in school and who might require remedial classes or special education.” *National Academy of Sciences. Toxicologic effects of methylmercury. Washington DC: National Research Council. 2000.*

WHY THE CONCERN ABOUT MERCURY IN MAINE?

While no research has been done to show the percentage of pregnant women with unsafe mercury levels in Maine, there are a number of reasons to be concerned that this national problem may pose an above-average risk in this state. Consider the following factors:

- **Maine’s lakes and streams are subject to a mercury pollution advisory. This is not a theoretical problem for Maine.** In August 2004, the U.S. Environmental Protection Agency (EPA) confirmed again that mercury pollution in Maine is a serious problem on an across-the-board basis, highlighting the fact that Maine has a statewide advisory for mercury in its freshwater lakes and rivers.
- **People who fish – and family members and others who catch the fish they eat – are in a high risk category when it comes to mercury.** In its 1997 Mercury Study Report to Congress, the EPA stated that sport anglers, Native Americans, children and the urban poor are “subpopulations of particular concern because of (mercury) exposure patterns.” The EPA report surveyed many studies and concluded that “Data on fish consumption for these groups indicate that exposures for these subgroups exceed those of the general population of adults.”
- **Maine faces an above-average risk of mercury exposure since twice as many people in Maine fish as the nationwide average.** US Fish & Wildlife surveys show that in certain states more people are engaged in recreational and subsistence fishing and therefore, are likely to eat more locally caught fish from mercury contaminated waters. The FWS 2001 statistics show that 10.34 percent of all people in the nation fish, compared to the higher level of 20.36 percent in Maine. *U.S. Department of Interior Fish and Wildlife Service and U.S. Department of Commerce, U.S. Census Bureau. 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation.*

HEALTH WOES POSED TO MAINE CHILDREN

It has been recognized for many decades that mercury is a potent neurotoxin, meaning that it affects the brain and nervous system, especially those of the fetus, infants and young children. The EPA, Centers for Disease Control and Prevention, National Academies of Sciences and World Health Organization all agree that mercury exposure can present unacceptable public health risk to certain segments of the population. The primary source of mercury poisoning is through eating fish. Developing fetuses are at greatest risk when their mothers eat fish while pregnant. However, the brain continues

to develop in children up to approximately 15 years old.

The most severe effects of mercury on the development of the brain in humans were documented in two catastrophic mercury poisoning episodes in Japan and Iraq. In these cases children exposed to mercury in utero suffered effects including mental retardation, cerebral palsy, deafness, blindness and dysarthria (a speech impediment). Two large, long-term studies found that children exposed to mercury in utero, due to their mother's fish consumption, later displayed reduced attention spans, impaired language development, reduced fine motor function and reduced memory abilities.

The March of Dimes reports that "At high ingested doses, (mercury) can disrupt organization of nerve cells in the brain before and after birth, leading to severe mental retardation, blindness, deafness, and chronic seizure disorders. Chronic, moderate to low-level methyl mercury exposure before birth is associated with developmental delays and decreases in attention, memory, intelligence, language ability and motor skills."

March of Dimes. March of Dimes Urges EPA to Cut Mercury Emissions. March of Dimes Website.

DIETARY RECOMMENDATIONS FOR MAINE

The Maine Bureau of Health states:

"Warning: Mercury in Maine freshwater fish may harm the babies of pregnant and nursing mothers, and young children.

SAFE EATING GUIDELINES

* Pregnant and nursing women, women who may get pregnant, and children under age 8 SHOULD NOT EAT any freshwater fish from Maine's inland waters. Except, for brook trout and landlocked salmon, 1 meal per month is safe.

* All other adults and children older than 8 CAN EAT 2 freshwater fish meals per month. For brook trout and landlocked salmon, the limit is 1 meal per week.

It's hard to believe that fish that looks, smells, and tastes fine may not be safe to eat. But the truth is that fish in Maine lakes, ponds, and rivers have mercury in them. Other states have this problem too. Mercury in the air settles into the waters. It then builds up in fish. For this reason, older fish have higher levels of mercury than younger fish. Fish (like pickerel and bass) that eat other fish have the highest mercury levels.

Small amounts of mercury can harm a brain starting to form or grow. That is why unborn and nursing babies, and young children are most at risk. Too much mercury can affect behavior and learning. Mercury can harm older children and adults, but it takes larger amounts. It may cause numbness in hands and feet or

changes in vision. The Safe Eating Guidelines identify limits to protect everyone.”

ABOUT THE GROUPS

The Natural Resources Council of Maine is the leading environmental advocacy organization working to protect Maine’s air, water, forests and wildlife for future generations.

Learning Disabilities Association of Maine is a statewide volunteer non-profit made up of parents of children with learning disabilities, adults with learning disabilities and the professionals who work with this population.

Located in Madison, WI, the **State Environmental Leadership Program (SELP)** is an alliance of more than 50 independent, nonprofit, public interest, multi-issue environmental advocacy organizations that focus on state-level policy. The program’s goal is to strengthen state environmental movements by enhancing the organizational capacity and policy work of SELP’s member organizations through network collaboration.