Mercury Pollution & You:
How Mercury Affects Human Health

A Factsheet of the National Wildlife Federation's Clean the Rain Campaign

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At high levels mercury can be deadly. At lower levels mercury exposure has been linked to nervous system problems in children, and reproductive and cardiovascular problems in adults.

Risks are Widespread

Early research on the effects of mercury on humans primarily studied the results of accidental high-level exposure. In these cases mercury impacts on adults and children were dramatic, resulting in severe nervous system damage and even death. Documented impacts of high prenatal exposure include cerebral palsy and mental retardation.

While occasional severe mercury poisoning still occurs – from industrial, laboratory, or home accidents – most people are exposed to mercury at lower levels over longer periods of time. The primary way people are exposed to mercury is through eating mercury-contaminated fish. This low level, chronic exposure poses widespread risks to people of all ages.

Impacts on Children

When ingested by pregnant women, methylmercury is absorbed and travels to the developing fetus – affecting the development the brain and nervous system. Infants are also exposed to methylmercury from their mothers through breast milk. Exposures at these early stages of development are especially dangerous, and can result in problems in memory, attention, and

language development. Higher methylmercury exposures have also been associated with deficits in visual-spatial skills and negative impacts on heart rate variability in children.

A recent study released by the Centers for Disease Control and Prevention found that one in twelve women of childbearing age in the U.S. had mercury levels exceeding the level considered safe by the U.S. EPA for the developing fetus. This translates into approximately 320,000 babies born in the U.S. each year at risk of developmental harm due to mercury exposure in the womb.

Impacts on Adults

While pregnant women, children and fetuses are particularly vulnerable to mercury, recent studies suggest that relatively low level exposure can affect adults as well. A study of middle aged men published in 2002 in the New England Journal of Medicine found that mercury exposure may diminish the cardiovascular benefits of eating fish. Another recent study showed links between high blood mercury levels and infertility in both men and women.

Mercury contamination of fish is of particular concern to communities for whom fish is an important part of diet and culture – these include Native Americans and other subsistence anglers, as well as recreational fishers.

How are People Exposed to Mercury?

Mercury accumulates in the food chain. Mercury air pollution from sources like coal-burning power plants falls via rain, snow and other means to land, lakes, and rivers. Once in the water, mercury can be transformed into methylmercury, a toxic form that is more readily absorbed by animals and people. It can then increase in concentration as it works its way up the food chain from plankton to forage fish to predator fish. As a result, large predatory fish (like bass, walleye and ocean fish such as swordfish and tuna) can have levels of mercury more than one million times

A Recent Study in San Francisco Shows How Routine Mercury Exposure Can Become a Problem...

Dining on fish has become recognized for health benefits ranging from heart disease prevention to brain power boosting attributes – and well it should be. It is important to monitor your fish intake, though. In a small-scale study of 123 San Francisco Bay Area residents (a mix of physicians, internet executives, lawyers, bankers and others) with high fish diets, 109 (or 89%) had mercury levels exceeding the level recognized as safe by the U.S. EPA and the National Academy of Sciences. Of 89 patients who were statistically analyzed, 16 had mercury levels nearly four times the safe level, and *four people had mercury levels nearly ten times higher than the safe level.* Patients who had high fish diets or who were exhibiting symptoms of mercury exposure, including fatigue, headache, joint pain, and reduced memory and concentration, were then selected for monitoring. Mercury levels fell dramatically in 67 patients who followed recommendations to eliminate or greatly reduce their fish intake, with a particularly significant drop in the first three weeks. However, some patients were still above the EPA safe level after curtailing their fish consumption for 20 weeks or more.

higher than the surrounding water.

Because mercury contamination poses such a serious public health threat, forty-four states and territories currently have fish consumption advisories warning people to limit their consumption of certain fish.

While it is important to heed fish advisories, in doing so we also forego certain health benefits attained from eating fish. Therefore, the real solution to the problem is to eliminate mercury pollution at the source.

Protecting Our Health Means Phasing Out Mercury Pollution

Specific steps can be taken at the local, state, and federal level to eliminate mercury pollution at the source.

► End the manufacture and use of mercury-containing products. Legislation should be passed at the federal, state, and local level to phase out the sale of mercury-containing products, institute mercury-free purchasing, and mandate manufacturer take-back for products that are still on the market and in use.

► Promote safe disposal of mercury waste. Mercury is found in dozens of household, business and industrial products. To prevent haphazard disposal of these products, resources need to be allocated to communities for comprehensive mercury collection and recycling facilities.

► Enact water quality standards that are consistent and protective of people and wildlife. Mercury monitoring and the process that results in fish consumption advisories needs to be improved in order to more effectively reduce the public's exposure to mercury as well as offer adequate protection to wildlife.

► Eliminate or greatly reduce industrial mercury emissions. Some industrial sources, such as chlorine manufacturers or waste incinerators, can virtually eliminate their mercury emissions by either switching to mercury-free processes or removing mercury from the incinerator feedstock. For other sources, such as coal-fired power plants, stringent emission limits must be set using existing authority under the Clean Air Act, or other legislation that would achieve reductions at a comparable level and timeframe.

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