

Mercury in the Environment

Mercury contamination of fish is a widespread problem. Some species of salt and freshwater fish often contain enough mercury to pose a health risk to consumers, especially pregnant women and children.

What is mercury?

Mercury is a naturally occurring, highly toxic metal. It exists in two forms -- organic and inorganic. As an element, it never breaks down or decomposes. The most common form of organic mercury is known as methylmercury, the form that is most dangerous to humans. Almost all of human exposure to methylmercury comes from fish consumption.

What is a Fish Consumption Advisory?

A fish consumption advisory is a warning targeted to either the general population or specific groups in the population not to eat fish or to limit consumption as spelled out in an advisory. Pregnant and nursing women and children under the age of 7 are the most susceptible to the effects of mercury. Advisories are based on conservative estimates of how much fish you can eat without the likelihood of experiencing any adverse health effects. Advisories vary and it is important to read each one carefully, as many apply to only certain species of fish.

How widespread is the problem?

All the New England states and Eastern Canadian Provinces have lakes and ponds with fish that have elevated levels of mercury. In Massachusetts, almost half of the lakes and ponds tested have one or more types of fish with unsafe levels of mercury. Over 40 states have issued fish consumption advisories due to mercury.

Where does mercury come from?

Mercury is a natural element and can be found at low levels almost everywhere. However, human activities such as coal burning and trash incineration have significantly increased mercury levels in the environment. Many common products contain mercury and can pollute the environment when they are incinerated, landfilled, broken or disposed of down drains.

Why is mercury in fish?

In lakes, ponds and the ocean, mercury can be transformed by natural processes into a more toxic form called methylmercury. Methylmercury is absorbed by small organisms which are then eaten by fish. The mercury becomes concentrated in the fish. In fact, the level of methylmercury in fish can be up to a million times higher than in the water the fish lives in. Thus, the fish may be unsafe to eat even though the water is safe to swim in or even drink.

How Does Mercury Affect Wildlife?

Eagles, osprey, loons, turtles, mink, otters, and other fish-eating creatures are at risk from eating mercury contaminated fish. Mercury in their diets can cause early death, weight loss, and problems with their ability to reproduce.

Why is the problem so widespread?

Once released into the environment, mercury persists for long periods of time and does not degrade into harmless chemicals. Mercury can have local impact or be carried across whole continents by the wind. Even remote lakes and ponds may be polluted with mercury.

When will the fish be safe to eat?

Because mercury persists for so long, it will be many years before mercury levels in our fish decrease significantly. It is important to be aware of and follow fish consumption advisories.

Is it safe to buy fish from vendors or grocery stores?

Fish consumption advisories are directed towards sports and subsistence fishermen. Consumers are advised to buy fish only from reputable sources and to question grocers/suppliers as to the source of the catch and to follow the species-specific language in the advisories.

What is being done to eliminate mercury pollution?

In order to reduce the risk of further mercury contamination, mercury use is being phased out of certain products, like batteries and children's light-up shoes. Industrial discharges and air emissions permit limits are becoming more stringent, and better control technologies are being developed. As a result, mercury discharges into air, streams and lakes have been greatly reduced in the past few decades.

Massachusetts, other northeastern states and eastern Canadian provinces developed a [regional action plan](#) to reduce mercury uses and releases. Specifics of the activities which have taken place in Massachusetts are provided on the MassDEP web page under the heading "[Mercury Management Act](#)".