

Background Information: "Minamata is everywhere"

The film "Minamata" documents the mercury catastrophe of Minamata (fishing village) in Japan. Over many years, a factory producing acetic acid discharged several hundred tons of mercury-contaminated wastewater into the bay of Minamata, an important local food source. In the early 1950s, animals and in 1956 people, began to show symptoms of an unknown neurological disease, later to be called Minamata disease, which had severe and harmful effects, particularly on the central nervous system. It was finally recognized that the mercury coming from the factory was to blame. Thousands of people suffering from the debilitating effects of Minamata disease still survive today, and hundreds of people have died as a result of this industrial disaster.

However, due to the long persistence of mercury in the environment and massive industrial emissions to the atmosphere, **mercury pollution has, since industrialisation, expanded from a local to a global threat to people and the environment.** Further releases must therefore be urgently avoided and mercury-containing products replaced by alternatives.

Below you will find more information about the global increase in mercury, the resulting threat to the population, policy measures and advice for consumers.

1. Mercury in the environment

Mercury is a naturally occurring element present in the earth's crust, and the only metal that is liquid at room temperature. It is released into the environment either naturally, e.g. through volcanic emissions, or through man-made activities (including small-scale artisanal gold mining, coal-fired power plants, waste disposal and incineration).

Mercury remains in the atmosphere for a relatively long time (up to 2 years), can be transported over long distances, and deposits in soils and waters. About 40% of the surface water bodies in the EU are currently estimated to be contaminated with hazardous quantities of mercury, in Germany it is even 100% (source: Federal Ministry of the Environment, EEA). In the water, mercury is converted by bacteria into the highly toxic methylmercury. Deposited mercury can remain in the soil for decades.

2. Threat to the population

The increase of mercury in the environment is highly problematic. It can lead to excessive (methyl) mercury which is easily absorbed mainly by fish and moves up the food chain until it reaches humans. This is the main way in which humans are exposed to mercury. Food grown in water environments (e.g. rice) can also be highly contaminated.

Mercury and its compounds are harmful to reproduction, damage the central nervous system, the kidneys, liver, thyroid gland, eyes, gums, skin and they disrupt the immune system. They can cause tremors, paralysis, insomnia, headaches and emotional swings, and also have adverse effects on the cardiovascular system, leading to increased mortality. Pregnant women, newborns and infants are most at risk, as mercury passes through the placental barrier and affects the development of fetuses and infants (UN). The toxicity of mercury varies with the form of mercury, the route of exposure and the dose.

Enjoyed once a week, fish is safe for adults. However, for pregnant women, nursing mothers and infants the European Food Safety Authority (EFSA) and the German Federal Institute for Risk Assessment (BfR), recommend that they should avoid large predator fish species, such as butterfish, shark, white halibut, swordfish or tuna, or eat no more than 100g of them per week. Due to mercury's bioaccumulative nature, these species often have high mercury levels. Small fish such as sardines, herrings or mackerel are usually not dangerous.

In the USA, at least 316,000 children are born every year with mercury levels in the umbilical cord blood that are sufficient to cause neurological developmental disorders (Helmholtz). In Europe, a 2012 study found elevated mercury levels in one in three newborns. (Source: Democophes)

3. The International Mercury Agreement, EU measures and Germany.

[The Minamata Convention on Mercury](#) was adopted in October 2013 under the auspices of the United Nations Environment Programme. It entered into force in August 2017. Currently 117 countries have ratified the Convention. The objective of the Convention is to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. The Treaty sets out a range of measures to control the supply and trade of mercury, mercury-added products and manufacturing processes in which mercury or mercury compounds are used, as well as artisanal and small scale gold mining.

After 2020, it prohibits worldwide to manufacture, import and export products containing mercury (e.g. batteries, lamps with high mercury content, thermometers, pesticides, biocides). However, dental amalgam fillings are so far only partially regulated by the agreement, although there are sufficient alternatives. These fillings consist of 50% pure mercury and represent the largest remaining use of mercury in the EU. Although amalgam has little impact on atmospheric deposition, it appears to be the main cause of mercury releases from wastewater treatment plants into European waters. Countries such as Sweden, Norway and Japan have long stopped using amalgam.

The EU has taken many measures to tackle mercury pollution. On 17 May 2017, the EU adopted a [mercury regulation](#) that goes beyond the requirements of the Minamata Convention in many areas. Among other things, it restricts the trade in mercury and regulates the storage of mercury as hazardous waste. The use of dental amalgam for children under 15 and pregnant or breastfeeding women was banned. The European Commission has until June 2020 to examine whether amalgam can be generally phased out in Europe by 2030 or earlier.

In Germany, the coal exit is sealed and mercury waste can only be stored and disposed of under strict regulations. However, Germany is still blocking a general ban on amalgam fillings and mercury-containing energy-saving lamps.

4. How to protect yourself from mercury

Consumers should prefer the consumption of smaller fish. If a product containing mercury breaks, e.g. a mercury thermometer or an energy-saving lamp, the liquid mercury should be collected with a shovel, placed in a glass container and taken to a hazardous waste dealer; the same applies if a fluorescent lamp breaks. The room should be ventilated in both cases and no vacuum cleaner should be used. To protect the environment, consumers should dispose of old batteries, thermometers, energy-saving lamps or blood pressure monitors properly and prefer mercury-free LED lamps, for example, when buying new products. At the dentist, patients should insist on mercury-free alternatives and call on politicians to give preference to alternative fillings and ban amalgam fillings¹.

(Sources: UN, European Commission, European Environment Agency (EEA), Federal Environment Agency, Federal Ministry of Environment, Helmholtz Institute)

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¹ A petition with a corresponding request to Health Minister Jens Spahn can be found under the following link: <https://www.ig-umwelt-zahnmedizin.de/petitionen/mund-auf-gegen-amalgam/>