Mercury

What is mercury?

Mercury is a naturally occurring metal which has several forms (metallic, organic and inorganic). The metallic mercury is a shiny, silver-white, odourless liquid. If heated, it is a colourless, odourless gas.

Where is it found?

Mercury is released into the environment from a range of natural sources, such as forest fires, flooding or by natural weathering processes. Man-made sources are the incineration of waste and fossil fuels and some industrial processes. The improper disposal of mercury containing products (such as old thermometers, barometers, and energy saving light bulbs) can lead to the release of mercury in the environment. In water, mercury can be absorbed by (shell)fish, which causes food chain accumulation.

Human biomonitoring of mercury

Blood, urine or hair samples can be used to measure exposure to mercury. Blood is often used to determine organic mercury concentrations, whereas urine is most suitable for the detection of inorganic mercury. Hair analysis is an appropriate method to determine a person's history of mercury exposure through fish consumption.

Biomonitoring studies on levels of mercury allow us to determine whether people have been exposed to higher levels of mercury than are found in the general population. Finding a measurable amount of mercury in blood or urine does not mean that these levels cause an adverse health effect.

How are we exposed?

Everyone is exposed to mercury to a small extent from air, water and food. Many people are potentially exposed to elemental mercury from dental amalgam fillings, although the amounts released are very low. Spillages of elemental mercury from broken thermometers or barometers may result in exposure to mercury vapour. Eating fish is a known source of exposure to organic mercury. Nearly all fish contain traces of mercury. In most fish this is not a problem but certain fish contain relatively higher levels of mercury, such as shark, marlin, swordfish and tuna.

How can it affect us?

Exposure to mercury is associated with damage to the central nervous system, kidneys, stomach and also affects the immune system, blood pressure and may cause behavioural problems.

During pregnancy, mercury compounds cross the placenta and can affect the development of the foetus, and cause neurodevelopmental abnormalities.

COPHES
Consortium to Perform Human Biomonitoring on a European Scale

Ways to reduce exposure

- Avoid eating certain types of fish that are known to have higher levels of mercury.
- Properly dispose of broken thermometers, energy-saving light bulbs and other mercury containing products.