

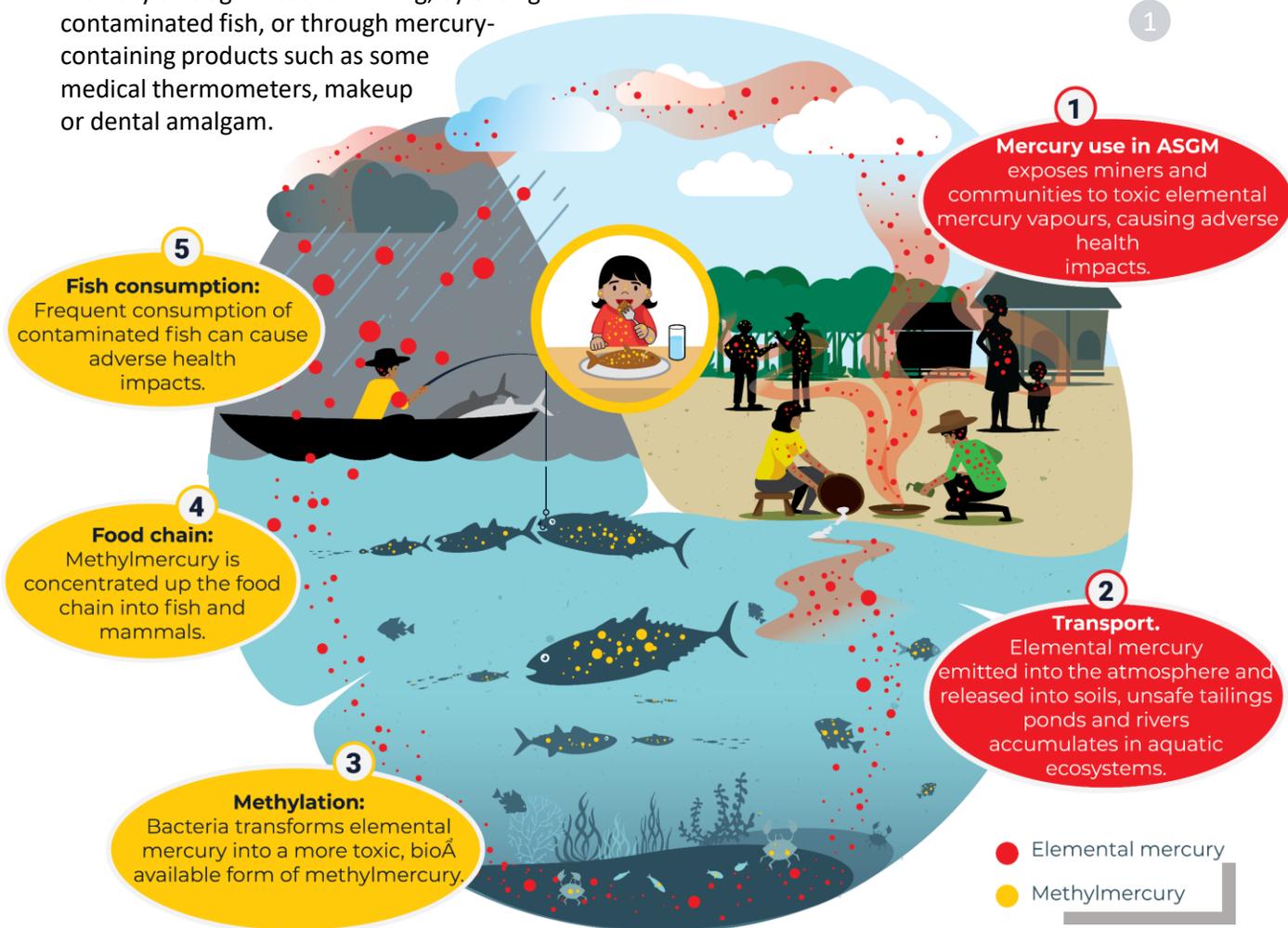
Mercury use in artisanal gold mining

Why is mercury dangerous?

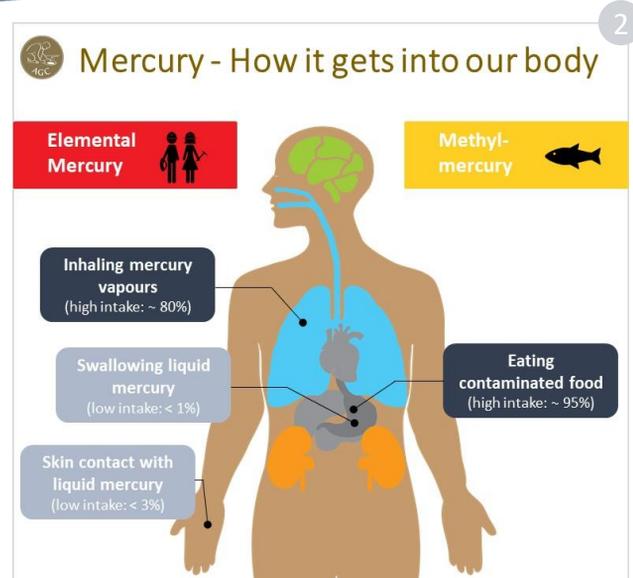


ARTISANAL
GOLD
COUNCIL

- Mercury is a highly toxic chemical that can travel in air and water and can accumulate in fish, shellfish, and other animals (Fig. 1). Once it enters the environment, it stays for a very long time.
- People can be exposed to different forms of mercury through artisanal mining, by eating contaminated fish, or through mercury-containing products such as some medical thermometers, makeup or dental amalgam.
- In pregnant women, mercury can enter the placenta and harm the developing fetus, causing permanent damage to the brain and other organs.



- Some artisanal miners use mercury to process gold. They use mercury in its elemental form: a very dense silver-coloured liquid. It is the only metal that evaporates as low as room temperature and will evaporate even faster when heating the gold-mercury amalgam. When mercury evaporates it becomes a very toxic vapour that has no colour or odour and therefore is difficult to detect.
- Breathing in the vapours can make people sick as it affects our brain and other organs (Fig. 2).
- Mercury vapours can also stick to clothes, tools and the walls. Bringing these items home can harm all members of a household.



Mercury use in artisanal gold mining

How does it affect our health?



ARTISANAL
GOLD
COUNCIL



Elemental mercury - How does it affect our health?

3

High, acute exposure



Low, chronic exposure



Respiratory system: A high, single dose of elemental mercury vapours entering the lungs can initially start with an irritation or burning sensation of mouth, lips, gums and lungs within a few hours after exposure. It can continue with chest pain and shortness of breath. Very high exposure can cause a chemical pneumonitis, which can be fatal.

Stomach: Initial symptoms also include nausea, diarrhoea and vomiting.

Other symptoms can include: Excessive salivation, fever, chills, headache, weakness, high blood pressure, irritation of eyes and skin

Brain: Regular exposure to elemental mercury, even in small amounts, causes mercury to accumulate in the brain. Effects such as tremors or memory issues can be felt weeks to years after exposure.

Kidneys: Elemental mercury leaves the body through the urine, first passing the kidneys. Damage to the kidneys can be difficult to observe and symptoms such as swollen feet or hands often appear at a late stage.

The impact of mercury on an artisanal miner's health depends on how much and how often they use it, and whether they use any type of protection.

A single exposure to high amounts mainly affects the respiratory system (lungs) (Fig. 3); in survivors, most symptoms resolve in time, but the mercury can accumulate in the body, causing chronic symptoms.

Repeated exposure to small amounts of mercury, even just from a retort stored at home, can impact our brain and kidneys (Fig. 3 & 4), esp. in infants and children.

Frequent exposure to elemental mercury can cause chronic symptoms (Fig. 4). Their severity depends on various factors, mainly:

- The frequency and dose of mercury exposure,
- Age: Fetuses, infants and children are most vulnerable as their organs are still developing, and
- Other medical conditions (e.g., kidney disease).

Symptoms from long-term exposure can occur soon after exposure and up to 10 years later. Some of the symptoms such as tremors in our hands can be reversible if the exposure to mercury stops. However, there is no medical cure for chronic mercury intoxication.

For methylmercury, symptoms are similar to those shown in Figure 4, except that methylmercury affects the heart instead of the kidneys. Note that people have to eat a lot of highly contaminated fish to get that sick! Pregnant women are most at risk because it can affect the developing fetus.

Frequent Symptoms of Chronic Elemental Mercury Intoxication

4

