

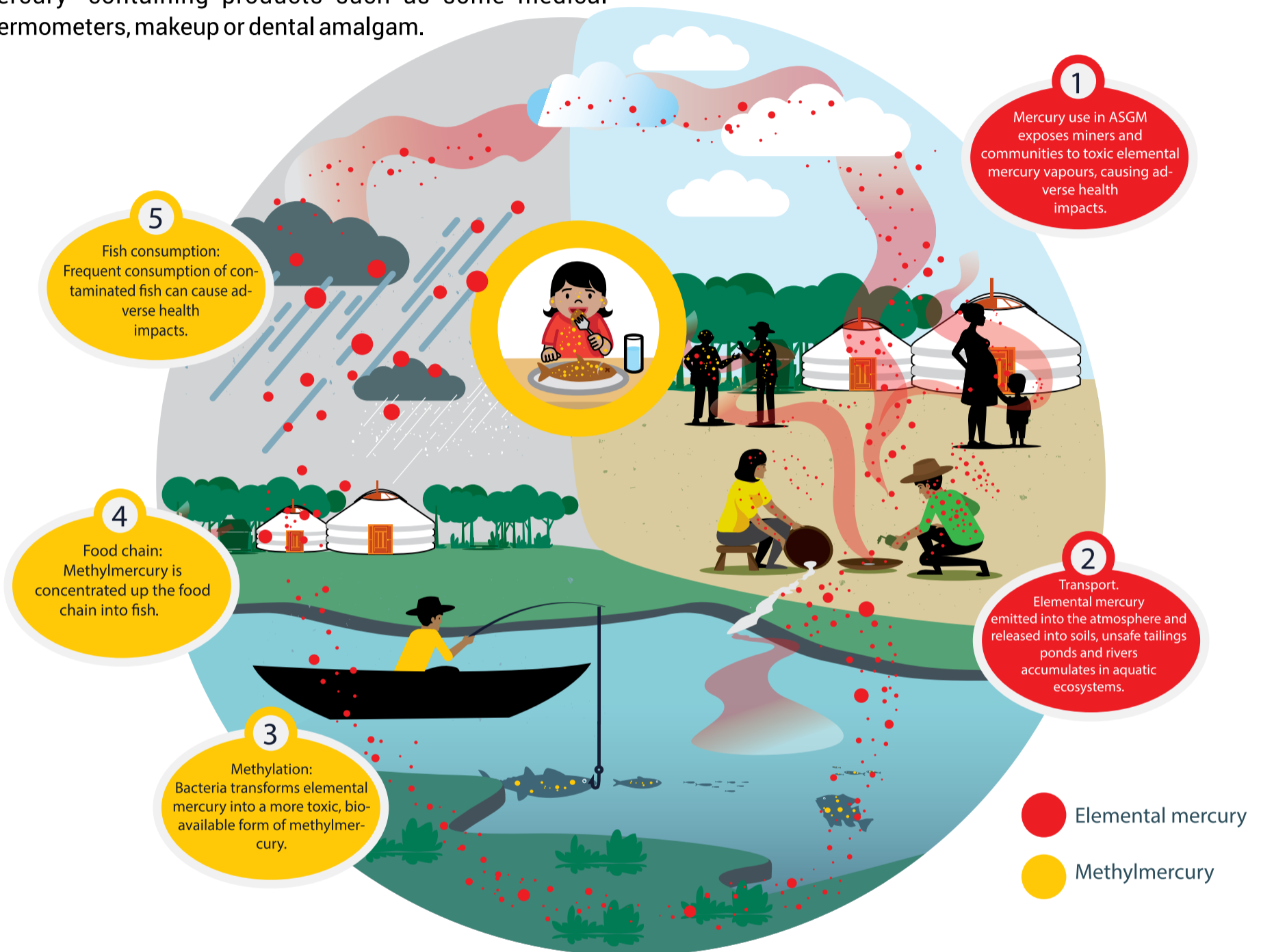
# Mercury use in artisanal gold mining

## Why is mercury dangerous?

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.

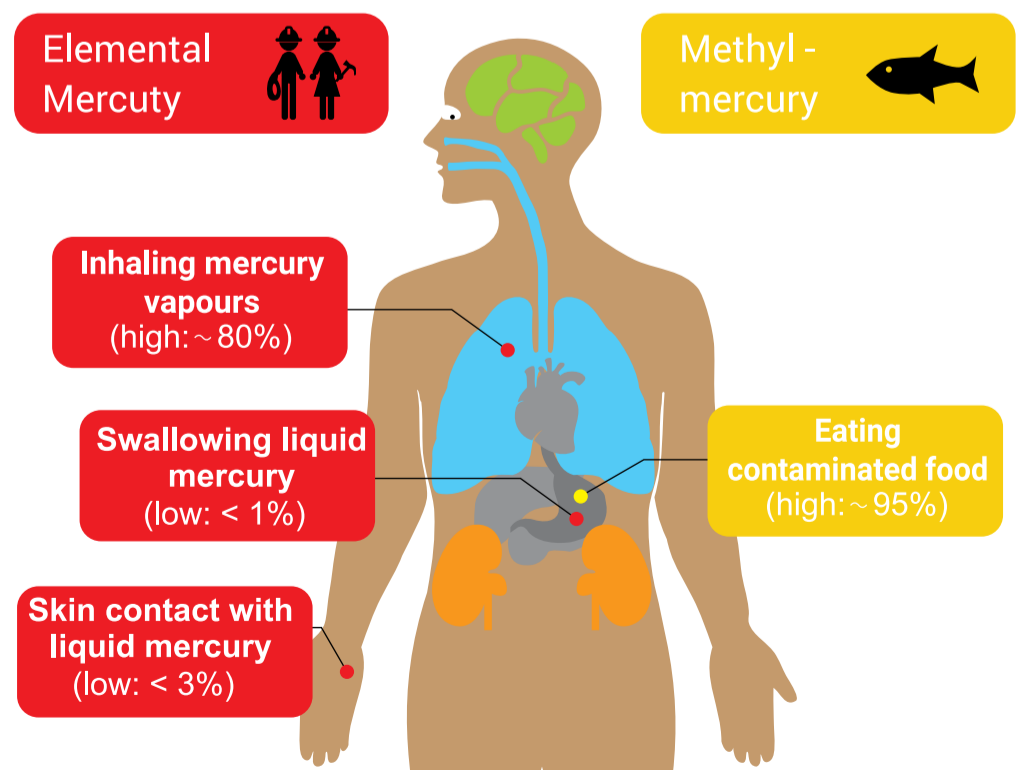
In pregnant women, mercury can enter the placenta and harm the developing fetus, causing permanent damage to the brain and other organs



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

## Elemental mercury - How does it affect our health?



**High, acute exposure**



**Low, chronic exposure**



**Respiratory system:** A high, single dose of elemental mercury vapours entering the lungs can initially start within a few hours after exposure with an irritation or burning sensation of mouth, lips, gums and lungs. It can

**Brain:** Regular exposure to elemental mercury, even in small amounts, causes mercury to accumulate in the brain. Effects can be felt weeks to years after exposure, and include for example memory, issues and movement control.

**Stomach:** Initial symptoms also include

Other symptoms can include: excessive salivation, fever, chills, headache, weakness, high

**Kidneys:** Elemental mercury leaves the body through the urine, first passing the kidneys. Damage to the kidneys can be difficult to observe; it can include swollen hands or feet.

The impact of elemental mercury use in artisanal mining depends on how often and how much people are exposed to it.

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

The repeated exposure to small amounts of mercury, even just from a retort stored at home, can impact our brain and the kidneys.

### Brain / Nervous System

The severity of the symptoms depends on various factors:

The frequency and dose of mercury exposure,

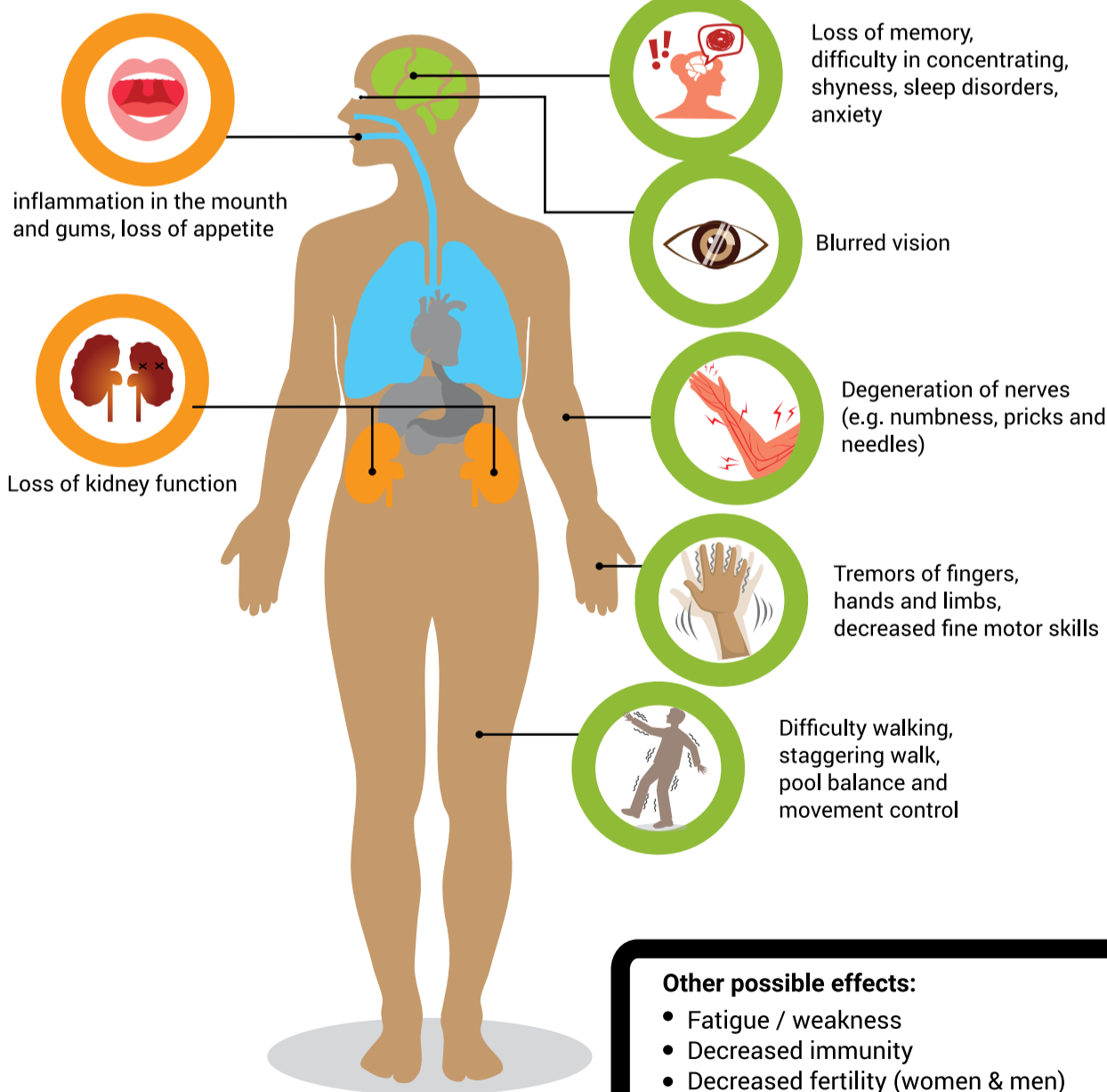
Age: the unborn fetus in the mother's womb, infants and children are most vulnerable as their organs are still developing,

Other medical conditions (e.g., kidney disease), and

Genetic factors.

Symptoms from long-term exposure can occur soon after exposure, or even 5 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 treatment for chronic mercury intoxication!

Symptoms for poisoning from methyl-mercury (e.g., through contaminated fish) are similar as shown. However, methylmercury does not affect the kidneys, but the heart. High exposure can cause high blood pressure, damage to our coronary arteries, and even heart attack.



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