



Manganese Contamination Causing Cancer

Source: DTE

A recent study links **manganese (Mn) contamination** in **groundwater** to rising **cancer** cases in Bihar's **Gangetic plains**. Elevated Mn levels were observed in blood samples (average: 199 µg/L; highest: 6,022 µg/L in a liver cancer patient) and household hand pump water.

- The study examined 1,146 cancer patients from Bihar, with **carcinoma** being most common (84.8%).
 - Household water samples were tested for manganese contamination using **Atomic Absorption Spectrophotometer**.

Manganese:

- It is the **fifth-most abundant metal** on Earth, exists naturally in **oxides, carbonates, and silicates**.
- It is **vital in trace amounts** for maintaining body **homeostasis**, but toxic in excess.
- **WHO-recommended limit for manganese** in drinking water is **400 µg/L**.

Sources of Contamination:

- Major sources include **geogenic deposits** (from **sedimentary/igneous rocks**) and anthropogenic factors like **industrial pollution**. **Groundwater** is a primary medium of exposure.

Health Impact:

- Chronic exposure to high levels of manganese leads to **toxicity**, causing symptoms like **weakness, clumsiness, emotional instability**, impaired movement and cancer in advanced stages.

Regions Affected:

- **India:** Bihar's Gangetic plains, West Bengal (Murshidabad, 24 Parganas), Karnataka (Tumkur).
- **Global:** Reported in **Nigeria, Bangladesh, China, Japan, and Greece**.

Read More: [Groundwater Contamination in India](#)