

Minamata Disease

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Minamata disease

- A crippling deformity caused by methylmercury poisoning that was first described in the inhabitants of Minamata Bay, Japan in 1956.
- Results from eating fish contaminated with mercury industrial waste.
- Signs and symptoms include ataxia, numbness in the hands and feet, general muscle weakness, loss of peripheral vision, and damage to hearing and speech.
- In extreme cases, insanity, paralysis, coma, and death follow within weeks of the onset of symptoms.
- A congenital form of the disease can also affect fetuses in the womb.

How does Mercury enter the Food Chain ?

- Atmospheric mercury dissolved in freshwater and seawater.
- A type of mercury called methylmercury is most easily accumulated in the body and dangerous.
- Organic mercury in a human body comes from eating fish and shellfish, and 75 to 90 percent of organic mercury existing in fish and shellfish is methylmercury,
- Inorganic mercury and methylmercury are first consumed by phytoplankton,
- Phytoplankton are consumed by small animals such as zooplankton.
- The methylmercury is assimilated and retained by the animals, while the inorganic mercury is shed from the animals as waste products,
- Small fish that eat the zooplankton are exposed to food-borne mercury that is predominantly in the methylated form.

- Small fish are consumed by larger fish, and so on until it gets to humans.
- Methylmercury displays evidence of biomagnification.

Biomagnification

- Biomagnification stands for Biological Magnification, which means the increase in concentration of contaminated substances or toxic chemicals that take place in the food chains.

Note: Methylmercury is very different to ethylmercury. Ethylmercury is used as a preservative in some vaccines and does not pose a health risk.

Minamata Convention

- The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury and its compounds.
- Objective to protect human health and environment from the anthropogenic emissions and releases of mercury and mercury compounds.
- It was agreed at the fifth session of the Intergovernmental Negotiating Committee in Geneva, Switzerland 2013.
- More than 140 countries including India have ratified the Convention