

Methylmercury exposure through ingestion of seafood is the commonest cause of a raised blood Hg concentration. Clinically significant toxicity is relatively rare

Toxicity / Risk Assessment

Methylmercury is the predominant form of organic Hg found within the environment

- Significant concentrations may be present in seafood following biomagnification through the food chain
- Methylmercury is well absorbed from the GI tract
- Pregnant females, children, and individuals with reduced renal function are at increased risk of toxicity

Other forms of organic Hg:

- **Dimethylmercury** – industrial settings, highly toxic
- **Ethylmercury (thiomersal)** – concentrations used in vaccine preservatives considered safe
- **Phenylmercury** – herbicides, fungicides, preservatives

Clinical features:

- Clinical toxicity usually delayed weeks post exposure
- Prenatal exposure: high risk of fetal/neonatal toxicity
- Neurotoxicity: motor / sensory neuropathies, tremor, ataxia, dysarthria, tunnel vision, hearing loss, cognitive impairment, dementia, death
- Other: renal impairment, acrodynia (pinkish discolouration of hands and feet)

Management

Decontamination:

- Gastrointestinal decontamination is not indicated in chronic exposures.
- Consider single dose of activated charcoal following acute oral exposure of methyl / dimethylmercury
- Skin should be washed with soap and water following large dermal exposures

Investigations: (see separate guideline “*Mercury Investigations*” guideline)

- Whole blood Hg is the most useful measure of organic mercury total body burden
- Mildly elevated Hg blood concentrations are commonly related to seafood exposure, rarely signify significant clinical toxicity, and usually do not require specific intervention

Chelation therapy: (please discuss with a clinical toxicologist)

- DMSA and DMPS are both effective at increasing Hg elimination, but are rarely indicated
- N-acetylcysteine (NAC) may be beneficial in increasing elimination of organic Hg
- Chelation therapy should be considered following large acute exposures, or in cases with clinical features of Hg poisoning and a whole blood Hg concentration suggestive of a large body burden

Enhanced elimination:

- Haemodialysis does not increase elimination of Hg to a clinically significant degree
- Renal replacement therapy may be indicated in patients with Hg induced renal failure

Disposition:

- The majority of patients with chronic organic Hg poisoning can be managed in an outpatient setting
- Patients with severe toxicity should be admitted to a ward or critical care environment