Body requirement – essential elements
• Zinc, copper, chromium, iron and manganese
• Required by body in small amounts
• High conc = toxic

Heavy metal sources
• Food (fish)
• Water
• Air
• Skin absorption
→ Compete with and deplete essential elements – this interferes with normal tissue function.

Symptoms
• N & V
• Diarrhoea
• Stomach pain
• Sweating
• Headache
• Metallic taste in mouth
• Blue black lines in gum
• Impairment of cognitive, motor and language skills

Detection
• Urinalysis
• Blood tests
• Hair and tissue analysis – arsenic accumulates here
• X rays
→ Levels needed to poison are lower in children than in adults due to less levels of smooth muscle. Type of metal can cause poisoning at lower conc then other metals.

Diagnosis – Arsenic poisoning
• Quickly cleared from the blood
• >50micrograms/dL in the urine
• X rays – Arsenic opaque to X rays – detected in abdomen
• Remains in hair and nails for months

Treatment
*Usually painful and lengthy and requires hospitalisation
• Chelation agent specific to metal – binds to metal, forms a complex, travels to blood stream, filtered to kidney and cleared in urine.
→ Calcium disodium edetate
→ Dimercaprol
→ Penicillamine
• Oral, IM or IV administration
• Types of poisoning
→ Lead, Arsenic, Mercury