## Iron

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| **Pathophysiology** | Direct caustic effect on GI mucosa → hemorrhagic necrosis; multisystem toxicity 2/2 mitochondrial poison; iron absorbed at duodenum/jejunum |
| **Symptoms** | If no significant GI symptoms w/i first 6 hrs after overdose, very low likelihood of significant toxicity |

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| **Phase I (30min – 6h)** | **GI sx**: vomiting, diarrhea, GI bleeding |
| **Phase II (6h – 24h)** | Latent period: apparent improvement |
| **Phase III (4h-4days)** | **Hepatotoxicity**: hepatocellular injury, AG metabolic acidosis (↑ lactic acid), coma, seizures, multi-organ failure, shock<br>**Labs**: ↑ bili, ↑ LFTs, ↑ glucose, ↑ PT/INR, ↑ BUN |
| **Phase IV (2-8 wks)** | **Late effects**: possible bowel obstruction |

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| **Evaluation** | KUB (radio-opaque pills), Fe level, VBG/ABG, lytes, BUN/Cr, glucose, LFTs, PT/INR, CB |
| **Management** | Support ABC's, replace fluid/blood losses, GI decontamination, IV deferoxamine (severe sx, iron level > 500 mcg/d w/ clinical symptoms, sig AG met acidosis) |

## Lead*

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| **Toxic Dose** | No safe lead level exists |
| **Pathophysiology** | Interferes w/ interactions of divalent cations and sulfhydryl groups leading to widespread physiologic effects and clinical toxicity. |
| **Symptoms** | • Lower levels: Abdominal pain, constipation, anorexia, vomiting, dev delays, aggression, hyperactivity<br>• Higher levels: drowsiness, clumsiness, ataxia<br>• Severe levels: decreased consciousness, coma, seizures, death (usually 2/2 cerebral edema) |
| **Evaluation** | Lead levels, CBC (microcytic anemia + basophilic stippling of RBC), FEP (free erythrocyte protoporphyrin), BUN/Cr, AST/ALT, x-ray (radio-opaque flecks) |
| **Management** | • Prevention is key: screening and lead levels at WCC (9-12 mo, 2 years)<br>• Gastric decontamination: whole bowel irrigation<br>• Chelation therapy (depending on lead levels)<br>• See: https://www.cdc.gov/nceh/lead/acclpp/actions_blls.html<br>• **Seminal Article**: CDC. Managing elevated blood lead levels among young children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention, Atlanta: CDC; 2002<br>• BCH has a separate Environmental Health clinic and service that can assist w/ management |

## Drugs of Abuse

### Ethanol

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| **Hx/PE** | Euphoria, loss of coordination, ataxia, slurred speech, nystagmus, nausea, vomiting, hypoglycemia (especially in young children), seizures, coma, respiratory depression |
| **Dx** | Blood ethanol level, D-stick |
| **Management** | Supportive; secure airway if unresponsive, no gag reflex |

**Drugs of Abuse continued on next page →**