

Health problems associated with various heavy metals

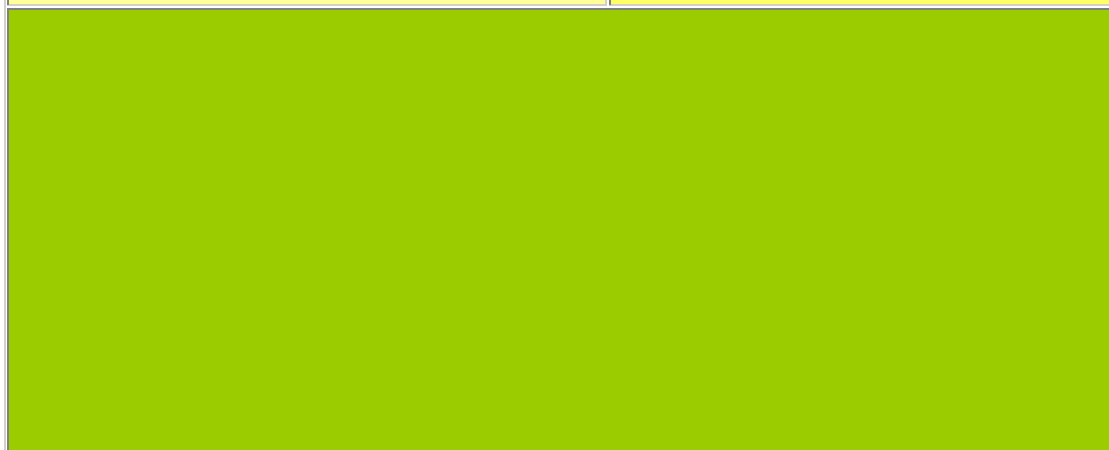
<u>Psychiatric Disturbances</u>	
SYMPTOMS	TOXIC METALS
✚ Social deficits, social withdrawal	Mercury
✚ Repetitive perseverative stereotyped behaviors ✚ OCD-typical behaviors	Mercury
✚ Depression mood swings flat affect impaired facial recognition	Arsenic, Copper, Lead, Mercury
✚ Schizoid tendencies hallucinations delirium	Mercury
✚ Irritability aggressive behaviors temper tantrums	Lead, Mercury
✚ Suicidal Behaviors	Copper, Mercury
✚ Sleep difficulties/ disturbances	Lead, Mercury, Thallium
✚ Chronic fatigue (CFS) weakness malaise	Aluminum, Arsenic, Cadmium, Copper, Lead, Mercury, Thallium
✚ Anorexia symptoms reflecting eating disorders loss of appetite/weight	Arsenic, Lead, Mercury
✚ Anxiety nervous tendencies	Thallium
✚ Attention problems (ADHD) lacks eye contact impaired visual fixation	Lead, Mercury
<u>Speech and Language Deficits</u>	
SYMPTOMS	TOXIC METALS
✚ Speech disorders	Aluminum, Mercury
✚ Loss of speech developmental problems with language	Mercury
✚ Speech comprehension deficits	Mercury
✚ Dysarthria & articulation problems	Mercury

Cognitive Impairments

SYMPTOMS	TOXIC METALS
✚ Mental retardation borderline intelligence	Arsenic, Lead, Mercury
✚ Uneven performance on IQ scores low IQ scores	Copper, Lead
✚ Poor concentration attention deficits (ADHD) response inhibition	Aluminum, Lead
✚ Poor memory (short term verbal and auditory)	Aluminum, Lead
✚ Dementia pre-senile and senile dementia	Aluminum
✚ Stupor	Aluminum, Arsenic
✚ Impaired reaction time lower performance on timed tests	Lead

Sensory Abnormalities

SYMPTOMS	TOXIC METALS
✚ Abnormal Sensations in the mouth and extremities	Arsenic
✚ Hearing loss difficulty hearing	Arsenic, Lead, Mercury
✚ Abnormal touch sensations diminished touch sensations aversion to touch	Arsenic
✚ Blurred vision sensitivity to light	Arsenic, Mercury



Motor Disorders

SYMPTOMS	TOXIC METALS
✚ Choreiform movements myoclonal jerks unusual postures	Copper, Mercury
✚ Difficulty walking swallowing talking	Copper, Mercury
✚ Flapping circling rocking toe walking	Mercury
✚ Problems with intentional movements or imitation	Mercury
✚ Abnormal gait/posture uncoordination loss of balance problems sitting lying crawling and walking	Mercury
✚ Decreased locomotor activity	Aluminum, Arsenic
✚ Convulsions seizure	Aluminum, Arsenic, Copper, Lead, Mercury, Thallium

Physiological Impairment	
<u>Brain and Central Nervous System</u>	
SYMPTOMS	TOXIC METALS
✚ Neurofibrillary tangles	Aluminum
✚ Neuritis retrobulbar neuritis neuropathy	Aluminum, Arsenic, Thallium
✚ Encephalopathy	Aluminum, Arsenic, Lead, Thallium
✚ Alterations in nerve conduction velocity	Lead
✚ Alterations in the spinal cord	Thallium
✚ Accumulates in CNS structures	Aluminum, Mercury
✚ Abnormal EEGs	Arsenic, Lead
✚ Autonomic disturbances	Copper, Lead, Mercury, Thallium
<u>Peripheral Nervous System</u>	
SYMPTOMS	TOXIC METALS
✚ Peripheral neuropathy	Arsenic, Mercury
✚ Alterations in peripheral nerves	Arsenic
✚ Loss of feeling/ numbness in the extremities parasthesia	Arsenic, Mercury, Thallium
<u>Gastrointestinal Tract</u>	
SYMPTOMS	TOXIC METALS
✚ Nausea vomiting diarrhea loss of appetite	Arsenic, Copper, Mercury, Thallium
✚ Abdominal pain stomach cramps burning of the throat and mouth	Arsenic, Copper, Lead, Mercury, Thallium
✚ Esophagitis gastroenteritis colitis	Arsenic, Mercury, Thallium
✚ Cancers (colon pancreatic stomach)	Arsenic

Renal and Hepatic Impairment

SYMPTOMS	TOXIC METALS
✚ Hepatotoxicity Liver dysfunction damage	Arsenic, Copper, Thallium
✚ Cirrhosis of the liver hepatitis	Copper
✚ Kidney disease kidney failure	Arsenic, Lead, Mercury
✚ Renal toxicity tubular proteinosis	Arsenic, Copper, Lead
✚ Kidney Damage histological alterations	Arsenic, Lead

Cardiovascular System

SYMPTOMS	TOXIC METALS
✚ Blood vessel damage	Arsenic
✚ Anemia decreased red blood cell count	Arsenic, Copper, Lead
✚ Hypertension increased heart rate (tachycardia)	Arsenic, Copper, Lead, Thallium

Electrocardiac disorders

SYMPTOMS	TOXIC METALS
✚ Peripheral vascular disease cardiovascular disease vascular collapse	Arsenic, Lead

Respiratory System

SYMPTOMS	TOXIC METALS
✚ Pulmonary Fibrosis - cancers	Aluminum, Arsenic
✚ Pneumonia laryngitis pharyngitis bronchitis	Aluminum, Arsenic, Mercury
✚ Restrictive airway disorders asthmatic conditions pneumoconiosis	Arsenic, Aluminum

<u>Immune System</u>	
SYMPTOMS	TOXIC METALS
✚ Immunosuppression	Lead
✚ Decreased white blood cell count	Arsenic, Thallium
<u>Reproductive System</u>	
SYMPTOMS	TOXIC METALS
✚ Genital abnormalities	Aluminum, Thallium
✚ Disturbances in menstrual cycle menstrual pains	Copper, Mercury
✚ Birth defects premature births Spontaneous abortion	Arsenic, Lead, Mercury
✚ Reproductive dysfunction	Arsenic, Aluminum, Cadmium, Lead
<u>Other Physical Disturbances</u>	
SYMPTOMS	TOXIC METALS
✚ Rashes contact dermatitis eczema itchy/irritating skin	Aluminum, Arsenic, Copper, Mercury
✚ Muscle pain headache acrodynia colic	Arsenic, Copper, Lead, Thallium
✚ Alopecia (hair loss)	Thallium