

## BEHAVIORAL AND FUNCTIONAL ABNORMALITIES ASSOCIATED WITH HEAVY METAL TOXICITY

Reprint from Townsend News Letter for  
Doctors & Patients



Brain and Central Nervous System	Aluminum
Neurofibrillary Tangles	Aluminum
Neuritis retrobulbar neuritis; neuropathy	Aluminum, Arsenic, Thallium
Encephalopathy	Aluminum, Lead Arsenic, Thallium
Cerebrovascular disease	Mixed Metals
Alterations in nerve conduction velocity	Lead
Alterations in the spinal cord	Thallium
Assumulates in CNS structures	Aluminum, Mercury
Abnormal EEG's	Arsenic, Lead
Autonomic disturbances	Copper, Lead, Mercury, Thallium
Peripheral Nervous System	Copper, Lead, Mercury, Thallium
Peripheral Neuropathy	Arsenic, Mercury
Alterations in peripheral nerves	Arsenic
Loss of feeling/numbness in extremities; parathesia	Arsenic, Mercury, Thallium
Gastrointestinal Tract	Arsenic, Mercury, Thallium
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 or rectal)	Arsenic
Renal and Hepatic Impairment	Arsenic
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	Arsenic, Mercury, Thallium
Blood Vessel Damage	Arsenic
Anemia; decreased red blood cell count	Arsenic, Copper
Lead Hypertension; increased heart rate (tachycardia)	Arsenic, Copper, Lead, Thallium
Peripheral vascular disease; cardiovascular disease, vascular collapse	Arsenic, Lead
Respiratory System	Arsenic, Lead
Pulmonary fibrosis	Aluminum, Arsenic
Pulmonary edema	Mixed Metals
Pneumonia, laryngitis, pharyngitis, bronchitis	Aluminum, Arsenic, Mercury
Restrictive airway disorders, asthmatic conditions, pneumoconiosis	Arsenic, Aluminum
Respiratory Tract Disorders	Arsenic, cobalt, nickel
Nasal Ulcers, perforation of the nasal septum	Mixed Metals
Immune System	Mixed Metals
Increased evidence of asthma, auto-immune symptoms, allergies	Mixed Metals
Inhibition of lymphocytes, T-Cells, monocytes	Mixed Metals

Immunosuppression	Lead
Decreased white blood cell count	Arsenic, Thallium
Reproductive system	Arsenic, Thallium
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
Psychiatric Disturbances	Arsenic, Aluminum, Cadmium, Lead
Social Deficits, Social Withdrawal	Mercury
Repetitive, perseverative, stereotyped behaviors, OCD behaviors	Mercury
Depression, mood swings, flat affect, impaired facial recognition	Arsenic, Copper, Lead, Mercury
Scizoid tendencies; hallucinations; delirium	Mercury
Irritability, aggressive behaviors, temper tantrums	Lead, Mercury
Suicidal Behaviors	Copper, Mercury
Sleep difficulties/disturbances	Lead, Mercury, Thallium
Chronic Fatigue syndrome(CFS); weakness, malaise	Aluminum, Arsenic Cadmium, Copper, Lead, Mercury, Thallium
Anorexia; sytoms reflecting eating disorders, loss of appetite/weight	Arsenic, Lead, Mercury
Anxiety; nervous tendencies	Thallium
Attentional problems(ADHD), lacks eye contact, impaired visual fixation	Lead, Mercury
Speech and Language deficits	Lead, Mercury
Speech disorders	Aluminum, Mercury
Loss of speech, developmental problems with language	Mercury
Speech comprehension deficits	Mercury
Dysarthria; articulation problems, slurred speech	Mercury
Cognitive Impairments	Mercury
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
Difficulties understanding abstract ideas ; difficulties carrying out complex commands	Mixed Metals
Dementia; pre-senile and senile dementia	Aluminum
Stupor	Aluminum
Impaired reaction time; lower performance on timed results	Lead
Sensory abnormalities	Lead
Abnormal sensations in the mouth and extremities	Arsenic
Hearing loss and difficulty hearing	Arsenic, Lead, Mercury
Abnormal touch sensations; diminished touch sensations; aversion to touch	Arsenic
Blurred vision; sensitivity to light	Lead, Mercury
Motor Disorders	Lead, Mercury
Choreiform movements, myoclonal jerks, unusual postures	Copper, Mercury
Difficulty walking, swallowing, talking, flapping, circling, rocking, toe walking	Copper Mercury
Problems with intentional movements or imitation	Mercury
Abnormal gait/posture; incoordination; loss of balance; problems sitting, lying, crawling and walking	Mercury
Decreases locomotor activitiy	Aluminum, Arsenic
Convulsions; seizure	Aluminum, Arsenic, Copper, Lead, Mercury, Thallium
Other Physical Disturbances	Aluminum, Arsenic, Copper, Lead, Mercury, Thallium
Hypotonia or hypertonia; decreased muscular strength	Mixed Metals
Rashes, contact dermatitis, eczema, itchy/irritating skin	Arsenic, Copper, Lead , Mercury