



The Great Plains Laboratory, Inc.

METALS

Heavy Metals and Your Health

Metals Testing: Hair, Blood, Urine, and Fecal

GENERAL DESCRIPTION

In our modern world, with ever-increasing pollution levels, the presence of toxic metals in the environment is constantly growing. Chemical products, fertilizers, industrial paint, building materials, fish, silver dental fillings, and vaccines are just some of the sources of heavy metals in everyday life. Toxic metals may normally be present in the body in very low levels, but acute or continuous exposure, as well as metabolic abnormalities can cause accumulation of heavy metals in body tissues, and subsequently, in the brain.

Many symptoms of heavy metal poisoning are identical to symptoms of neurological and psychiatric disorders; therefore, it is difficult, if not impossible to identify their cause without expert laboratory testing. Test results frequently show high heavy metal levels coupled with low mineral levels in people with developmental and neurological disorders and chronic fatigue, as well as otherwise healthy individuals who do not feel well.

CLINICAL SIGNIFICANCE

Metals testing is important for measuring toxic metals that can impede development and normal brain functioning, as well as measuring levels of minerals essential for normal growth and good health. It is equally important to measure levels of minerals, which play an essential part in numerous physiochemical reactions within body cells. These reactions include absorbing nutrients and vitamins, transforming energy, eliminating toxins, and many others. Toxic overload and metabolic imbalances are more apt to happen when minerals are depleted.

RECOMMENDED FOR PATIENTS WITH:

- AD(H)D
- Alzheimer's Disease
- Anemia
- Anxiety or Excessive Stress
- Autism Spectrum Disorders
- Chronic Fatigue
- Depression
- Digestive Disorders
- Food Allergies
- Migraines & Spasms
- Mood Swings
- Movement Disorders
- OCD
- Psychosis
- Reproductive Problems
- Skin Problems & Acne
- Sleep Disorders
- Tic Disorders / Tourette Syndrome
- Weak Nails



IMPORTANT MARKERS IN METALS TESTING

Mercury can cause depression, fatigue, developmental disorders, neurological and behavioral disorders, and more.

Aluminum can be an important factor in Alzheimer's disease.

Lead can cause depression, nausea, fatigue, communication and concentration problems, developmental problems, neurological and behavioral disorders, and more.

Zinc deficiency can be responsible for allergies, developmental problems, hair loss, acne, weight problems, and more.

Magnesium deficiency can cause anxiety, depression, spasms, behavioral disorders, and more.

Copper deficiency can cause increasing cholesterol levels, anemia and chronic infections, and more.

Cobalt deficiency can be responsible for bad circulation, migraines, and spasms.

DETERMINING THE BEST TESTING METHOD

The Great Plains Laboratory, Inc. can check metal levels in hair, blood, urine and fecal matter, using samples appropriate for each specific situation. Hair is ideal for the initial evaluation because of easy sample collection procedures, accuracy, and economy of price. As blood transports metals to body tissues and hair follicles, toxic elements get incorporated and excreted in the hair tissue. The hair test also provides exact ratios between nutrients and toxic metals. The results show levels of 39 toxic and essential elements and 5 ratios. The blood test is best for detecting recent heavy metal poisoning and for measuring levels of minerals in the body. Urine and fecal tests are most sensitive after taking a chelating agent. Chelating agents help extract heavy metals deposited in the tissues and bone. These tests are also important for evaluating the efficiency of chelating treatments, since they measure levels of metals excreted from the tissues during the chelation. Urine and fecal element tests are not recommended unless a chelating agent is used before sample collection. For the specific requirements of each test type, see the metals test pages on our website.

SAMPLE REPORT AND INTERPRETATIONS

POTENTIALLY TOXIC ELEMENTS							
TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			68 th		95 th		
Aluminum	40	< 8.0	[Bar chart showing result at 68th percentile]				
Antimony	0.14	< 0.008	[Bar chart showing result at 68th percentile]				
Arsenic	0.067	< 0.080	[Bar chart showing result at 68th percentile]				
Beryllium	< 0.01	< 0.020	[Bar chart showing result at 68th percentile]				
Bismuth	0.034	< 2.0	[Bar chart showing result at 68th percentile]				
Cadmium	0.64	< 0.15	[Bar chart showing result at 68th percentile]				
Lead	1.9	< 1.0	[Bar chart showing result at 68th percentile]				
Mercury	< 0.03	< 0.40	[Bar chart showing result at 68th percentile]				
Platinum	0.003	< 0.005	[Bar chart showing result at 68th percentile]				
Thallium	0.005	< 0.010	[Bar chart showing result at 68th percentile]				
Thorium	< 0.001	< 0.005	[Bar chart showing result at 68th percentile]				
Uranium	0.011	< 0.060	[Bar chart showing result at 68th percentile]				
Nickel	0.66	< 0.40	[Bar chart showing result at 68th percentile]				
Silver	68	< 0.20	[Bar chart showing result at 68th percentile]				
Tin	1.0	< 0.30	[Bar chart showing result at 68th percentile]				
Titanium	1.0	< 1.0	[Bar chart showing result at 68th percentile]				
Total Toxic Representation			[Bar chart showing total toxic representation]				
ESSENTIAL AND OTHER ELEMENTS							
ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			2.5 th	16 th	50 th	84 th	97.5 th
Calcium	653	125- 370	[Bar chart showing result between 50th and 84th percentiles]				
Magnesium	61	12- 30	[Bar chart showing result between 50th and 84th percentiles]				

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