

Micro Trace Minerals Laboratory

environmental & clinical laboratory

Röhrenstrasse 20, 91217 Hersbruck, Germany
P.O.Box 4613; Boulder, CO 80306-4613, USA



MINERAL ANALYSIS			Stool					
			Lab Number		1St180434			
Doctor					Test Date		6/09/2016	
Patient Name		John Hargrave		Sex		m	D.O.B.	31/10/1973
Clinical Information		stool before detoxification				Page		1/4
		Acceptable Range	Test Value					
Essential Trace Elements (mcg/kg)								
Chromium	< 270.000	312.854	↑					
Cobalt	< 423.800	275.693						
Copper	< 10,000.000	25,443.511	↑					
Iodine	41.000 --- 487.000	138.663						
Manganese	10,000.000 --- 48,500.000	89,639.469	↑					
Molybdenum	165.000 --- 813.000	719.222						
Selenium	21.000 --- 440.000	291.603						
Vanadium	10.000 --- 264.000	49.779						
Zinc	44,000.000 --- 247,000.000	160,470.878						
Trace Elements (mcg/kg)								
Strontium	4,450.000 --- 41,650.000	47,044.280	↑					
Tungsten	< 90.000	1.829						
Potentially Toxic Elements in mcg/kg								
Aluminum	< 14,000.000	10,020.377						
Antimony	< 80.000	4.385						
Arsenic-total	< 300.000	110.542						
Barium	< 6,786.000	87,408.147	↑					
Beryllium	< 10.000	< 10.000						
Bismuth	< 50.000	< 10.000						
Cadmium	< 50.000	202.887	↑					
Cerium	< 188.500	28.101						
Cesium	< 33.210	135.102	↑					

n.n. = not detected

Accreditation: DIN EN ISO 17025; Quality control: Dipl. Ing. Friedle, Ing. J. Merz, Dr. Rauland; Validation: Dr. E. Blaurock-Busch PhD

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	Acceptable Range	Test Value				
Potentially Toxic Elements in mcg/kg						
Gallium	< 395.000	17.141				
Lead	< 50.000	66.427	↑			
Mercury	< 40.000	< 20.000				
Nickel	< 1,000.000	3,191.677	↑			
Platinum	< 113.000	< 5.000				
Silver	< 10.000	< 10.000				
Tantalum	< 1.100	< 0.560				
Thallium	< 20.000	25.892	↑			
Tin	< 10.000	57.475	↑			
Titanium	< 250.000	23.779				
Uranium	< 120.000	3.503				

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MINERAL ANALYSIS

Stool

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Stool is a transport medium. The concentrations of essential and toxic elements found in stool are influenced by food intake and the digestive breakdown of food. A factor influencing the metal concentration of stool may be the frequency of elimination. The information contained in this elemental analysis report is designed as an interpretive adjunct to normally conducted diagnostic procedures. The findings are best viewed in the context of a medical examination and history.

The reference ranges listed represent a statistical reference range in the 95percentile.

For more information, please contact us: info@microtraceminerals.com or www.microtraceminerals.com

CADMIUM (Cd):

Cadmium is toxic to virtually every system of the body. It has been implicated in bronchial, lung and kidney disease, prostate and other cancers, high blood pressure, and anemias. It inhibits enzyme and nutrient utilization, and is readily stored in the kidney where it competes with zinc for binding sites in various enzymes and other proteins. Zinc, vitamin C, iron and/or calcium intake can partially protect against cadmium overload. Smoke increases the susceptible to toxicity, and tissue levels are known to increase with age.

SOURCE: Pollution, smoking.

THERAPEUTIC CONSIDERATION: Antioxidant therapy with emphasis on vitamin C, zinc and vitamin B6; increased amino acid intake. Water contamination is a recognized source of cadmium toxicity.

CHROMIUM (Cr) An excess intake of nutritional chromium supplements may be considered as a possible cause for elevated stool chromium levels. Whole grain, brewer's yeast, molasses, wheat germ and mushrooms are high in chromium.

CESIUM (Cs):

We tested Cs-133, which is a nonessential rare earth element. We did not test for the radioactive Cs-137 which received much attention after the Chernobyl nuclear disaster. Of the known 39 Cesium isotopes, only Cs-133 is stable. Due to its biological half-life, the human body will excrete it within approximately 110 days.

Cs-133 is in close physiological relationship to potassium and their extracellular ionic concentration influences nerve and muscle function, including ECGs. Studies indicate that the cesium content of injured tissue of myocardial infarcted heart is reduced. There are no clinical indications that cesium is toxic; however it is suggested that overexposure may have similar effects than excess potassium.

Cesium is used in the electronic industry for the manufacture of photoelectric cells, cesium lamps and photomultiplier tubes.

LABORATORY INFORMATION: Red blood cells contain 6x the amount as found in serum or plasma. And whole blood can be used for the diagnosis of an immediate or acute exposure. Research indicates that hair contains relatively high levels of cesium; thus hair can be used to evaluate long-term cesium exposure.

Copper in stool may be due to high food or supplemental intake. Sources of copper include shellfish, liver, kidney and nuts.

NICKEL (Ni):

Nickel is naturally found in a variety of foods, including algae products. Nickel-rich foods include chocolate, nuts, and beans. Nickel intake from the Danish diet is estimated as 150 microgram/person/day on average. Roots and vegetables, meal, grain and bread relatively supply the average diet with much nickel. Certain food items, e.g. cocoa and chocolate, soya beans, oatmeal, nuts and almonds, fresh and dried legumes, have very high nickel contents. Consumption of these items in larger amounts may increase the nickel intake to 900 micrograms/person/day or more and consequently raise the nickel content of stool. Nickel allergy may be the cause of chronic urticaria or angioedema, pruritus or atopic dermatitis and a nickel-reduced diet may improve conditions. A recent study found that a low nickel diet was effective in controlling nickel-allergy symptoms in 39.28% of the patients tested.

Nickel is also found in cigarette smoke, contributing to the overall nickel load.

Sources:

(1) Allergy Asthma Proc 1999 Jul-Aug;20(4):235-42

Antico A, Soana R Allergology Department, Asola Hospital, Mantova, Italy.

(2) Toxicol Lett 1999 Sep 5;108(2-3):185-9

Christensen JM, Kristiansen J, Nielsen NH, Menne T, Byrialsen K

National Institute of Occupational Health, Lersoe Parkalle 105, Copenhagen, Denmark.

(3) Z Lebensm Unters Forsch. 1984 Dec;179(6):427-31. Flyvholm MA, Nielsen GD, Andersen A. Nickel content of food and estimation of dietary intake.

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LEAD (Pb):

Occupational and environmental exposure are the common causes of exposure. Lead reduces the body's ability to utilize calcium, magnesium, zinc, iron and other important nutrients. This heavy metal greatly affects health. It is a known cause of anemia, and children are easily affected by lead exposure.

TOXICITY SYMPTOMS: Include abdominal pain, anorexia, anxiety, constipation, fatigue, headaches, impaired coordination, indigestion, irritability, muscle pains, learning and neurological disorders, incl. tremors, severe anemias and immune deficiencies, learning disabilities, hyperactivity and violent behavior. **SOURCES:** Canned goods, lead paint, newsprint, tobacco smoke, air pollution, and contaminated water.

THALLIUM (TI):

Thallium salts are readily absorbed and tissue accumulation increases with age. Thallium can be found combined with other elements such as bromine, chlorine, fluorine and iodine. It enters the environment primarily from coal burning and smelting, and is used as radioactive thallium-201 in certain medical procedures. Thallium salts are used to poison rodents. Signs of intoxication are autonomic dysfunction, tachycardia and hypertension. Early signs of exposure are numbness of fingers and toes, vomiting, diarrhea, temporary hair loss, and effects on the nervous system, lungs, heart, liver and kidneys.

THERAPEUTIC CONSIDERATION: Because Thallium remains in the blood for a short time only, the US government recommends hair and urine analysis as the test of choice. To reduce levels, increase amino acid and antioxidant intake.

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