

Micro Trace Minerals Laboratory

environmental & clinical laboratory

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

Phone: +49 (0) 9151/4332
Facsimile: +49 (0) 9151/2306
<https://microtrace.de>
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MINERAL ANALYSIS

Hair

		Lab Number		1H271241	
Doctor/Clinic	Dr. Iva Keene MRMed. ND.			Test Date	13/06/2023
Patient Name	Veronique Fritz	Sex	f	D.O.B.	04/07/1988
Clinical Information				Page	1/4

	Acceptable Range	Test Value	
Essential Trace Elements (ppm = mg/kg = mcg/g)			
Chromium (Cr)	0,020 --- 0,210	0,029	
Cobalt (Co)	0,010 --- 0,300	0,091	
Copper (Cu)	10,000 --- 41,000	25,540	
Iodine (I)	0,050 --- 5,000	0,194	
Iron (Fe)	4,600 --- 17,700	10,516	
Manganese (Mn)	0,050 --- 0,920	0,637	
Molybdenum (Mo)	0,030 --- 1,100	0,041	
Selenium (Se)	0,400 --- 1,700	0,769	
Vanadium (V)	0,010 --- 0,200	0,012	
Zinc (Zn)	150,000 --- 272,000	292,691	
Essential Macroelements (ppm = mg/kg = mcg/g)			
Calcium (Ca)	220,000 --- 1 600,000	1 031,803	
Magnesium (Mg)	20,000 --- 130,000	168,012	
Nonessential Trace Elements (ppm = mg/kg = mcg/g)			
Boron (B)	< 0,840	< 0,250	
Germanium (Ge)	< 1,650	0,011	
Lithium (Li)	< 0,300	0,003	
Strontium (Sr)	0,650 --- 6,900	6,331	
Tungsten (W)	< 0,010	< 0,001	
Potentially Toxic Elements (ppm = mg/kg = mcg/g)			
Aluminum (Al)	< 8,000	4,216	
Antimony (Sb)	< 0,300	0,007	

n.n. = not detected, < x = below Detection Limit

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

Analytical method: ICP-MS with collision cell technique

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Potentially Toxic Elements (ppm = mg/kg = mcg/g)						
Arsenic-total (As)	< 0,200	0,077				
Barium (Ba)	< 4,640	3,854				
Beryllium (Be)	< 0,100	< 0,010				
Bismuth (Bi)	< 0,200	< 0,010				
Cadmium (Cd)	< 0,200	0,006				
Cerium (Ce)	< 0,100	0,007				
Cesium (Cs)	< 0,010	< 0,005				
Dysprosium (Dy)	< 0,006	< 0,001				
Erbium (Er)	< 0,005	< 0,001				
Europium (Eu)	< 0,005	< 0,001				
Gadolinium (Gd)	< 0,100	< 0,001				
Gallium (Ga)	< 0,200	n.n.				
Iridium (Ir)	< 0,006	n.n.				
Lanthanum (La)	< 0,032	0,004				
Lead (Pb)	< 3,000	0,576				
Lutetium (Lu)	< 0,010	< 0,001				
Mercury (Hg)	< 0,600	0,516				
Nickel (Ni)	< 1,000	0,214				
Palladium (Pd)	< 0,100	< 0,050				
Platinum (Pt)	< 0,010	< 0,005				
Praseodymium (Pr)	< 0,013	< 0,005				
Rhenium (Re)	< 0,005	< 0,005				
Rhodium (Rh)	< 0,007	< 0,005				

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Potentially Toxic Elements (ppm = mg/kg = mcg/g)						
Ruthenium (Ru)	< 0,100	< 0,001				
Samarium (Sm)	< 0,011	< 0,001				
Silver (Ag)	< 1,000	0,019				
Tantalum (Ta)	< 0,011	n.n.				
Tellurium (Te)	< 0,010	n.n.				
Thallium (Tl)	< 0,010	< 0,001				
Thorium (Th)	< 0,010	< 0,010				
Thulium (Tm)	< 0,002	< 0,001				
Tin (Sn)	< 0,700	0,037				
Titanium (Ti)	< 1,500	0,149				
Uranium (U)	< 0,100	0,004				
Ytterbium (Yb)	< 0,010	< 0,001				
Zirconium (Zr)	< 0,500	< 0,050				

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Your Analysis Determined The Following Mineral Deficiencies And Excesses. Since it is difficult to distinguish treated samples from untreated ones, it is assumed that the spectroanalytical analysis was performed on chemically untreated hair as requested in our laboratory brochure. Chemically treated hair does not provide reliable results and TMI does not assume responsibility for data obtained from treated hair. 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.

MAGNESIUM (Mg):

Magnesium is an essential element with both electrolyte and enzyme-activator functions. High hair tissue levels reflect early bone withdrawal and maldistribution into tissue such as hair. In most cases, high hair levels are signs of a masked deficiency and can be confirmed with deficiency symptoms such as weakness, confusion, personality changes, muscle tremor and spastic tendencies during mild exercise, bizarre muscle movements, especially in the face, swollen gums, skin lesions, lack of coordination and digestive disorders.

GOOD FOOD SOURCES: All fruit and dark green vegetables, nuts, legumes, wholegrain cereals and breads.

THERAPEUTIC CONSIDERATION: B-Vitamins aid magnesium absorption.

ZINC (Zn):

High hair tissue levels of this important trace element may be due to long-term overexposure such as long-term supplementation of nutritional zinc or inhaling zinc oxide as in certain industries. High hair zinc levels are also found in the presence of a disturbed hair growth pattern as is seen in people suffering from hair loss. When hair loss is severe, these high hair zinc levels reflect a masked deficiency that is best treated with the supplementation of amino acids, the B-complex vitamins and some zinc. Since zinc uptake can be competitive with that of iron and copper, it is important to evaluate iron and copper tissue levels. When iron and copper levels are low in the presence of high hair zinc levels, a multimineral may be recommended instead of zinc supplementation. The daily recommended intake is 3-30 mg/day, depending on age and status.

The following nutritional program is aimed at providing optimum health. The program is suitable for patients 12 years and older. It is recommended for 3-4 months, after which a repeat analysis is recommended. A follow-up test would evaluate and determine your body's ability to digest and absorb nutrients. If any questions or problems arise, consult your medical doctor or health care provider.

Magnesium (Mg)

To evaluate extent of exposure, check blood and/or urine levels, and kidney function.

High magnesium levels of hair rarely correlate with blood levels, but may indicate a masked deficiency and an increased need for magnesium. Chemical hair treatment causes falsely elevated hair magnesium values.

Zinc (Zn)

High hair zinc levels are found in the presence of hair loss problems or when hair growth patterns are disturbed. High hair zinc levels may also be due to prolonged zinc therapy or frequent use of zinc oxide lotion or cream on scalp. High zinc levels in the presence of hair loss problems may reflect a masked deficiency. Check blood levels to confirm zinc status. Increase vitamin B intake.

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