

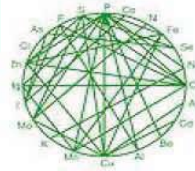
# Australian Biologics Testing Services

**in Cooperation with Micro Trace Minerals Laboratory**

Fayworth House Suite 605; 6th Floor 379-383 Pitt Stre

Sydney, NSW 2000

Tel. (02) 9283 0807 Fax: (02) 9283 0910 E-mail: info@australianbiologics.com



MINERAL ANALYSIS		Hair	
Doctor	Australian Biologics	Lab Number	
Patient Name		Age	35
Test Date	27. May. 11	Sex	m
Essential Macroelements (ppm = mg/kg = mcg/g)			High

	Acceptable Range	Test Value	
Calcium	220.00--1600.0	2078.55	High
Magnesium	20.00--130.00	140.58	High

Essential Trace Elements (ppm = mg/kg = mcg/g)	Low	Acceptable Range	High
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	Acceptable Range	Test Value	
Chromium	0.03--0.68	0.17	
Cobalt	0.02--0.57	0.06	
Copper	10.00--41.00	56.34	High
Iodine	0.05--5.00	0.25	
Iron	4.60--17.70	20.04	High
Manganese	0.12--1.30	1.66	High
Molybdenum	0.02--1.00	0.1	
Selenium	0.21--5.46	1.13	
Vanadium	0.01--0.73	0.03	
Zinc	150.00--272.00	195.7	

Nonessential Trace Elements (ppm = mg/kg)	Low	Acceptable Range	High
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	Acceptable Range	Test Value	
Boron	0.07--9.00	0.27	
Germanium	0.00--1.65	0.01	
Lithium	0.00--0.53	n.n.	<
Strontium	0.65--6.90	4.39	
Tungsten	0.00--0.06	0.01	

Potentially Toxic Elements (ppm = mg/kg = mcg/g)	Low	Acceptable Range	High
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	Acceptable Range	Test Value	
Aluminum	0.00--8.00	13.1	High
Antimony	0.00--0.60	0.09	
Arsenic-total	0.00--1.00	0.22	
Barium	0.00--4.64	3.58	
Beryllium	0.00--0.20	n.n.	<
Bismuth	0.00--0.27	0.01	
Cadmium	0.00--0.20	0.09	
Lead	0.00--3.00	6.51	High
Mercury	0.00--0.60	0.66	High
Nickel	0.00--1.00	0.47	

n.n. = not detected

Accreditation: DIN EN ISO 17025; Quality control: Dr. Rauland PhD; Validation: Dr E.Blaurock-Busch PhD

# SAMPLE HAIR ANALYSIS

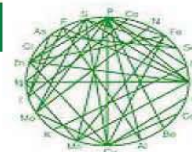
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MINERAL ANALYSIS			Hair	
Doctor	Australian Biologics		Lab Number	
Patient Name			Age	35
			Sex	m
Test Date	27. May. 11			
Palladium	0.00--0.04	n.n.	<	
Platinum	0.00--0.01	n.n.	<	
Silver	0.00--1.00	0.03	*****	
Thallium	0.00--0.01	n.n.	<	
Tin	0.00--0.70	0.52	*****	
Titanium	0.00--2.20	0.28	*****	
Uranium	0.00--0.15	0.02	*****	
Zirconium	0.00--1.47	0.06	*****	

n.n. = not detected

Accreditation: DIN EN ISO 17025; Quality control: Dr. Rauland PhD; Validation: Dr E.Blaurock-Busch PhD

# SAMPLE HAIR ANALYSIS

## Sample

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.

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ALUMINIUM (Al) is commonly ingested with food, medicine and water.

COMMON SOURCES: soft drinks, medications, and certain treated waters. Al is also used in certain covering called Waraq which is another source of silver in India as well as Ayurvedic medicines. Aluminum cooking vessels may also be a cause of excessive Al- intake. For decades, aluminum was considered virtually non-absorbable and was thus freely used in a variety of food additives and over-the-counter drugs such as antacids. New research suggests that Al can cause neurological changes as seen in Alzheimer's and Parkinson's disease, and dialysis dementia. Al can bind to DNA, resulting in abnormal neurofibrillary tangles in the brain. Al inhibits the enzyme, hexokinase. It is absorbed in the intestine and excreted via the kidney. Al can be deposited in bones, particularly in the presence of calcium deficiency.

TOXICITY SYMPTOMS include muscular coordination problems, colic and gastric irritation.

THERAPEUTIC CONSIDERATION: Increased blood levels indicate increased exposure and uptake. To decrease uptake and increase elimination, support digestive and kidney function and check calcium balance. Check hair tissue levels to confirm or rule out longterm exposure. Chelation treatments support the binding and elimination of Aluminum. Comparing pre and post urine levels is a direct reflection on the chelaing agents binding capacity and the body's ability to detoxify.

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CALCIUM (Ca): high tissue levels of chemically untreated hair reflect malabsorption problems and a masked deficiency, which is caused by calcium being drawn from bones and redistributed into other tissues such as hair. Thus, high hair levels reflect bone withdrawal and osteoporotic tendency. Calcium deficiency symptoms such as unhealthy hair, nail and teeths, muscle cramping at night, insomnia, menstrual problems, nervousness and irritability may be present. When such deficiency symptoms are present, moderate calcium supplementation is recommended in combination with a low fat diet and increased activity level. To further support the calcium absorption and to normalize tissue levels, digestive aids and an increased intake of lecithin are recommended.

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COPPER (Cu) Brain and liver are the main storage sites, while the liver is the main organ for excretion. High hair levels of copper suggest elevated liver storage, and the body's inability to complex copper with amino acids such as histidine, threonine and glutamine. This insufficient complexing prevents the transport of copper between the liver and various peripheral tissues. High hair copper levels have been linked to headache, dizziness, depression and mood disorders, migraines, an increased sensitivity to pain, collagen disease, leukemias and other malignancies. Symptoms include nausea, diarrhea, vomiting, and discoloration of skin. High copper levels are often accompanied by zinc deficiency. High copper levels increase the toxic effect of selenium and suppress iron absorption.

SOURCES: shellfish, nuts, organ meats, eggs, cocoa, chocolate, Brewer's yeast and copper-rich drinking water.

THERAPEUTIC CONSIDERATION: To normalize levels, evaluate iron, manganese, zinc and molybdenum levels. These trace elements are natural antagonists of copper, and deficiency in one of those elements may cause increased absorption of the others. Vitamin C increases the copper excretion, especially when used with amino acids and vitamin B6. In cases of chronic copper intoxication, chelation may be recommended.

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31 May 2011

# SAMPLE HAIR ANALYSIS

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## Sample

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**IRON (Fe)** Iron is regulated primarily by absorption rather than by excretion. High hair levels suggest elevated tissue storage and the body's inability to mobilize iron. Signs and symptoms of Iron overload are related to the involved organ systems, esp. the liver. About one-third of body iron is stored in the liver, one third in the bone marrow and the remainder in the spleen and other tissue. Excess iron storage carries the risk of hemochromatosis, liver problems, diabetes, heart disease, and an increase in skin discoloration. Frequent blood transfusion can lead to excess iron storage. High dietary iron intake can cause copper and zinc deficiencies, resulting in anemia, bone and joint disorders, color and taste acuity, and increased susceptibility to infectious disease. Symptoms of iron overload may include anorexia, dizziness, fatigue, headaches. **SOURCES:** iron-rich drinking water, cooking acidic food in iron cookware, excessive iron supplementation, repeated blood transfusion, protein malnutrition. **THERAPEUTIC CONSIDERATION:** support liver functions by supplying sufficient amino acids, vitamin C and the B-vitamins. A vegetarian diet might be considered.

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**MERCURY (Hg):** Circulating metals in blood 'feed' the hair root. Therefore, hair reflects longterm or chronic exposure. Early symptoms of mercury overexposure include insomnia, dizziness, fatigue, drowsiness, weakness, depression, tremors loss of appetite, loss of memory, nervousness, headache, dermatitis, numbness, and tingling of lips and feet, emotional instability and kidney damage. Symptoms of acute toxicity: loss of teeth, extreme tremor, mental and emotional disorders, kidney failure.

**SOURCES:** overexposure may stem from paints, explosives, electrical apparatus, batteries, mercurial diuretics, fungicides, fluorescent lamps, cosmetics, hair dyes, amalgams in dentistry, contaminated seafood, and petroleum products. Vaccines containing thiomersal are another source of exposure. Improper disposal of broken mercury thermometers and other apparatuses that use mercury including button cells and tube lights may also result in mercury exposure.

**THERAPEUTIC RECOMMENDATION:** increased oral intake of cysteine and antioxidant intake, esp selenium and vitamin E can support mercury detoxification. Chelating agents such as DMPS or DMSA effectively bind mercury, resulting in an increased urinary excretion, a sign of the detoxification process.

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**MAGNESIUM (Mg)** 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, esp 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.

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**MANGANESE (Mn)** high tissue levels suggest longterm overexposure due to industrial pollution or high water content. Well water can be rich in manganese, contributing to bacterial growth in water. Plants grown in industrially polluted soil and water can contribute to excess intake, which interferes with the iron metabolism and impairs vitamin B1 metabolism. Toxicity symptoms are central nervous system disorders, neurological and behavioral disorders, depressed appetite, and gait problems. **THERAPEUTIC RECOMMENDATIONS:** low calcium levels increase manganese uptake. High manganese increases the demand for vitamin C and copper.

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31 May 2011

# SAMPLE HAIR ANALYSIS

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## Sample

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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: leaded gasoline, canned goods, lead paint, newsprint, tobacco smoke, air pollution, and contaminated water. THERAPEUTIC CONSIDERATION: Vitamin C, sulfur-bearing amino acids and other oral chelating agents can increase the urinary excretion. In acute cases of exposure, chelation treatments using chelating agents such as EDTA or DMPS. Check with your physician.

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31 May 2011

# SAMPLE HAIR ANALYSIS

## Sample

The following program supports toxic metal elimination. It may be used for 6-9 months as a mild detoxification program, after which a repeat analysis of this test is recommended.

Amino acid complex, 1 capsule 2x daily between meals  
Vitamin B-complex, 1 capsule 1-2x daily with meals  
Vitamin C according to need plus Vitamin E, 200-400 IU

To improve digestion and toxic elimination via fecal matters:  
Probiotic, 1 capsule 2x daily 10min before meals

The addition of a multivitamin/mineral complex supports nutritional demands. You may also ask your doctor about chelation.

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To reduce the aluminum uptake, support digestive function. Increase fiber intake and support intestinal function. Lactobazillus acidophilus improves the intestinal pH and flora, which in turn reduces the aluminum uptake.

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To improve calcium utilization, reduce consumption of dairy products. Avoid fatty foods and increase intake of fiber foods and digestive enzymes to improve digestive function. Physical activity greatly aids calcium utilization.

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To normalize copper levels, support liver function and increase your intake of B-vitamins and antioxidants. Avoid chocolate, meat, oysters and other copper-rich foods. Testing of drinking water may be recommended, provided your drinking water flows in copper pipes.

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To reduce tissue iron levels, support liver function. Avoid iron-rich foods such as meat and reduce alcohol consumption. Digestive enzymes, B-vitamins and lecithin intake support liver function. High iron levels increase the need for antioxidants such as Vitamin E Improved Antioxidants, 1 capsule 1-2x daily

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High magnesium levels of hair may indicate a masked deficiency and an increased need for magnesium.

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To normalize manganese tissue levels, increase intake of free amino acid complex, 1/day. Increase plant protein intake. Avoid black tea and herbal teas.

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31 May 2011