

P: 1300 688 522  
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16 HARKER STREET  
BURWOOD VIC 3125

Dr.SAMPLE REPORT  
TEST HEALTH CENTRE  
123 TEST STREET  
BURWOOD VIC 3125

LAB ID : 3814150  
UR NO. :  
Collection Date : 09-May-2022  
Received Date:09-May-2022



3814150

### ENVIRONMENTAL ANALYSIS

HAIR	Result	Range	Units	
<b>Hair Mineral Analysis</b>				
Hair Description	BROWN			
<b>Nutrient Mineral Levels</b>				
Chromium (hair)	<DL (a) *L	0.020 - 0.210	ppm	
Copper (hair)	49.620 *H	10.000 - 41.00	ppm	
Iron (Hair)	8.130	4.600 - 17.700	ppm	
Manganese (hair)	0.389	0.050 - 0.920	ppm	
Selenium (hair)	1.120	0.400 - 1.700	ppm	
Zinc (hair)	197.000	150.000 - 272.	ppm	
Calcium (Hair)	749.640	220.000 - 1600	ppm	
Magnesium (hair)	83.410	20.000 - 130.0	ppm	
<b>Toxic Mineral Levels</b>				
Aluminium (hair)	3.210	0.000 - 8.000	ppm	
Arsenic (hair)	0.530 *H	0.000 - 0.200	ppm	
Cadmium (hair)	0.160	0.000 - 0.200	ppm	
Lead (hair)	0.980	0.000 - 3.000	ppm	
Mercury (Hair)	1.120 *H	0.000 - 0.600	ppm	
Nickel (hair)	0.653	0.000 - 1.000	ppm	
Silver, Hair	0.084	0.000 - 1.000	ppm	
Tin, Hair	0.220	0.000 - 0.700	ppm	
<b>Hair Mineral Ratios</b>				
Calcium/Copper Ratio	15.11	5.50 - 292.00	RATIO	
Calcium/Iron Ratio	92.2	16.1 - 293.0	RATIO	
Calcium/Magnesium Ratio	9.0	4.9 - 26.1	RATIO	
Calcium/Zinc Ratio	3.8	0.9 - 11.3	RATIO	
Iron/Copper Ratio	0.2	0.1 - 2.5	RATIO	
Iron/Manganese Ratio	20.9	5.5 - 195.0	RATIO	
Zinc/Chromium Ratio	197000 *H	383.00 - 2254.	RATIO	
Zinc/Copper Ratio	4.0 *L	8.2 - 13.2	RATIO	
Zinc/Iron Ratio	24.2	10.4 - 45.4	RATIO	
Zinc/Magnesium Ratio	2.36	1.09 - 12.40	RATIO	
Zinc/Manganese Ratio	506.43	142.00 - 3542.	RATIO	

(\* ) Result outside normal reference range

(H) Result is above upper limit of reference rang (L) Result is below lower limit of reference range



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### Hair Minerals Analysis Comments

The measured hair analysis results never reveal exactly how much to supplement when a level is abnormal. What we are measuring is the tissue (hair) saturation of each particular mineral.

When nutritionally essential elements are low or deficient, the Reference Daily Intake (RDI) levels provide guidance for supplementation. The RDI's for elements or minerals are the daily intakes recommended for essential body functions.

ELEMENT	RDI**
Calcium	1000 milligrams***
Chromium	120 micrograms
Copper	2 milligrams
Magnesium	400 milligrams
Manganese	2 milligrams
Selenium	70 micrograms
Zinc	15 Milligrams

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### Nutrient Minerals Comment

#### LOW Chromium (Hair) Comment:

Chromium is the key element in glucose utilisation potentiating normal insulin response via GTF form. Adult onset diabetics have significantly lower hair chromium levels. Has influence on lipoprotein lipase. Therefore, it can raise HDL cholesterol. Hypo and hyper glycaemia improve with chromium supplementation. May be deficient in cardiovascular disease and prolonged stress.

Recommended Daily Intake: 120mcg. Jejunum is site of absorption, which is some 2% of dietary intake. The GTF form may be better absorbed. Amino Acids, oxalate and nicotinic acid act to improve absorption. Chromium lowers insulin need.

Dietary Sources: Organ meat, Brewer's Yeast, whole grains, cheese, mushrooms, prunes, nuts, asparagus.

HIGH Copper (Hair): - Unbound copper is known to be an even more reactive prooxidant than iron, especially in the presence of strong reducing agents such as ascorbate or homocysteine. High levels of copper can induce oxidative damage. Small amounts are required for CuZnSOD and ceruloplasmin.

Toxic levels cause nausea, behaviour problems, vomiting and diarrhoea (250mg CuSO<sub>4</sub>). Elevated levels of copper often reflect exposure to swimming pool water treated with algacide. Occasionally, elevated copper occurs from hair treatments, perm, dye, or bleach. If these conditions do not apply to your patient, then look for possible sources of copper in the environment that may be causing the elevated level.

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### Toxic Hair Metals Comment

HIGH Arsenic (Hair) - is a well-known poison that inhibits respiration.

Sources: Seafood (mussels, food oysters) pesticides, defoliants, chemical, electronic & phyto-electric processes, specialty glass, water.

Synergistic for Uptake/Retention: Selenium or Iodine deficiency.

Antagonistic for Uptake/Retention: Adequate Selenium and Iodine.

Physiological Interactions: Organic forms readily absorbed, those inorganic forms in water are also easily absorbed. Deposits in liver, kidney, skin, spleen. Disables alpha-lipoic acids. Potential co-carcinogen and/or carcinogen. Binds to sulphhydryl and phosphatide groups.

Symptoms of excessive exposure: Hair loss, white streaked nails, myalgia, garlic odor, anorexia, hypopigmentation, skin rashes, hypotension, chest pain, diarrhea, muscle weakness.

### Mercury (Hair) Comment:

Mercury is a well-known neuro-toxin that has no known human need. 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.

Chronic mercury ingestion may be a risk factor for cardiovascular disease. This increased risk has been proposed to be due to the promotion of lipid peroxidation by mercury. Elevated levels of mercury in hair have been associated with inducement of autoimmune diseases, multiple sclerosis.

Sources: Shellfish, large fish, dental amalgams, electrical relays, fungicides, mining, paints, explosives, batteries, mercurial diuretics, fungicides, fluorescent lamps, cosmetics, hair dyes, and petroleum products. Vaccines containing thimerosal 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.

Physiological Interactions: Accumulates in kidney, liver. Organic mercury has a ½ life of 2 months & binds to enzymes, proteins, and glutathione. MAO, catalase, P-450, and mitochondrial functions are affected.

Symptoms of excessive exposure: Headache, fine tremor, increased salivation, excitability, poor mental concentration, metallic taste, fatigue, anorexia, psychoses, hypertension with renal dysfunction.

Synergistic for Uptake/Retention: Selenium Deficiency.

Antagonistic for Uptake/Retention: Adequate Selenium.

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**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.

#### RECOMMENDED TESTING:

QUICKSILVER TRI-TEST, in order to determine the type of mercury present (methyl mercury or inorganic mercury) and how capable the body is in mobilising and clearing it,

#### Hair Elements Ratios Comments

Zinc/Copper ratio is LOW:

Suggestive of the need for Zinc supplementation.

Zinc deficiency relative to copper is frequently seen in strict vegetarians, with the degree of imbalance often directly proportional to the rigidity of the vegetarian diet. A low zinc-to-copper ratio is usually seen with the following;

Viral Infections, Liver Dysfunction, Estrogen Therapy, Gallbladder Obstruction.

Thyroid - frequently indicative of a trend toward reduced thyroid activity or expression as a result of a potassium deficit.

Mental Health - often associated with excess mental activity with thoughts and ideas racing. Sometimes this will affect concentration and attention span. Sleep disturbances may also occur.

A high ratio is reflected by emotional steadiness whereas a low ratio, reflective of copper dominance and perhaps toxicity is usually associated with emotional instability.

Glucose metabolism - has been associated in the past with an increased frequency and intensity of blood sugar fluctuations. This is partially due to the requirement and role of zinc in the storage of insulin in the pancreas.

Tests ordered: HAIR,IMPEI

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