Hair Tissue Analysis Report

Lab ID:	0		
Client:	0	Date of Birth:	00-Jan-00
Sampling Date:	14-May-18	Date Received:	14-May-18
Date Received:	14-May-18	Report Date:	18-May-18
Practitioner:	Not Recorded		

labwest
hair tissue analysis

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	Element	Result (µg/g)	Reference Range*
Toxic Elements	Aluminium (Al)	8.2	0-20
	Antimony (Sb)	0.020	0-0.07
	Arsenic (As)	0.037	0-0.15
	Beryllium (Be)	0.001	0-0.005
	Cadmium (Cd)	0.005	0-0.07
	Mercury (Hg)	0.433	0-0.8
	Lead (Pb)	0.590	0-2
	Uranium (U)	0.005	0-0.02
Other Trace Elements	Barium (Ba)	3.44	0-12
	Bismuth (Bi)	0.006	0-0.2
	Germanium (Ge)	0.005	0-0.01
	Lithium (Li)	0.036	0-0.1
	Nickel (Ni)	0.347	0-0.9
	Platinum (Pt)	0.001	0-0.002
	Rubidium (Rb)	0.063	0-0.3
	Silver (Ag)	0.027	0-0.4
	Thallium (Tl)	0.000	0-0.004
	Thorium (Th)	0.002	0-0.015
	Tin (Sn)	0.086	0-1.2
	Titanium (Ti)	2.45	0-7
	Vanadium (V)	0.091	0-0.2
	Zirconium (Zr)	0.034	0-0.3
	Total Rare-Earths	0.036	0-0.2
Nutrient Elements	Boron (B)	2.5	0.2-10
	Calcium (Ca)	2167	200-1800
	Chromium (Cr)	0.36	0.1-0.6
	Cobalt (Co)	0.01	0.002-0.051
	Copper (Cu)	40	10-39
	Iodine (I)	0.425	0.1-1
	Iron (Fe)	19	5-30
	Magnesium (Mg)	112	20-200
	Manganese (Mn)	0.160	0.08-0.8
	Molybdenum (Mo)	0.025	0.015-0.06
	Phosphorus (P)	145	80-200
	Potassium (K)	33	20-130
	Selenium (Se)	0.47	0.25-0.75
	Sodium (Na)	128	50-400
	Strontium (Sr)	4.23	0.5-8
	Sulphur (S)	38	35-50
	Zinc (Zn)	274	110-300
Key Ratios	Sodium:Potassium (Na/K)	3.9	1.4-3.4
	Calcium:Potassium (Ca/K)	65.8	2.2-6.2
	Calcium:Phosphorus (Ca/P)	14.9	1-9
	Calcium:Magnesium (Ca/Mg)	19.4	3-11
	Zinc:Copper (Zn/Cu)	7	4-12
	Copper:Molybdenum (Cu/Mo)	1593	<625

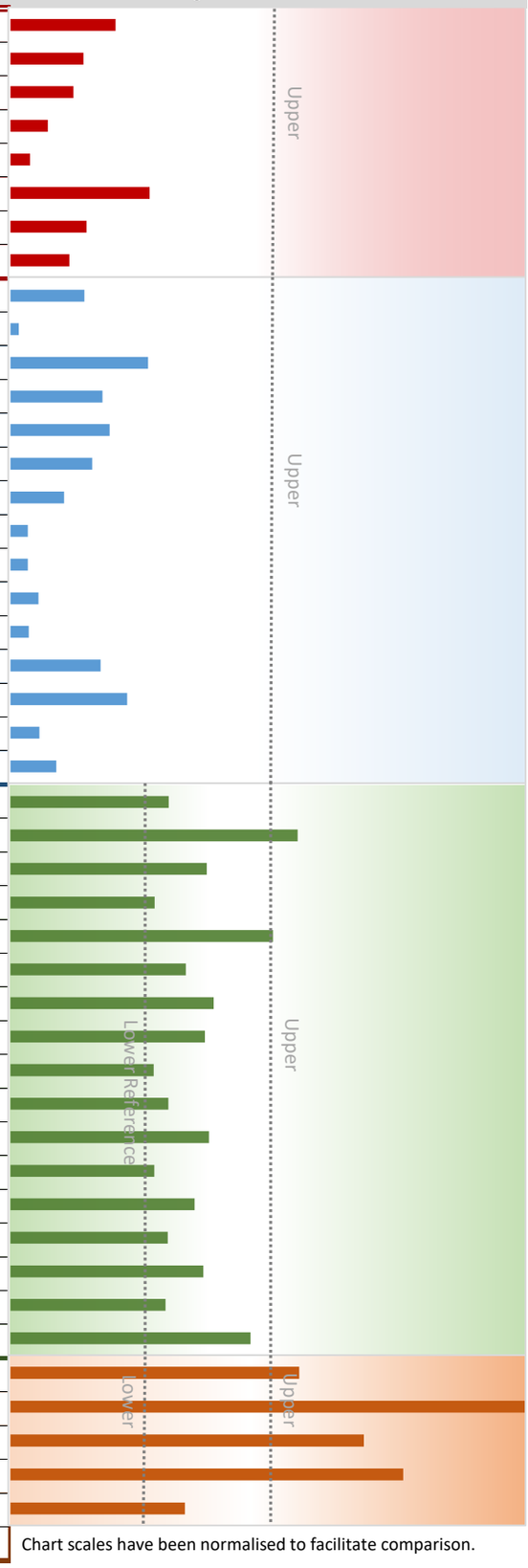

Chart scales have been normalised to facilitate comparison.

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Other Ratios:	Result	Other Ratios:	Result
Selenium:Mercury (Se/Hg)	1.08	Zinc:Iron (Zn/Fe)	14.12
Calcium:Sodium (Ca/Na)	16.95	Zinc:Magnesium (Zn/Mg)	2.45
Calcium:Lead (Ca/Pb)	3674	Zinc:Manganese (Zn/Mn)	1713
Calcium:Iron (Ca/Fe)	111.61	Zinc:Cadmium (Zn/Cd)	51277
Calcium:Copper (Ca/Cu)	54.0	Iron:Copper (Fe/Cu)	0.48
Calcium:Strontium (Ca/Sr)	513	Iron:Mercury (Fe/Hg)	44.89
Calcium:Zinc (Ca/Zn)	7.90	Iron:Manganese (Fe/Mn)	121
Zinc:Mercury (Zn/Hg)	634	Sodium:Magnesium (Na/Mg)	1.14
Zinc:Chromium (Zn/Cr)	756	Iron:Lead (Fe/Pb)	32.92

DISCLAIMER:
LabWest Hair Tissue Analysis (LabWest) provides accurate analysis of hair mineral content; the report is provided on an "information only" basis, and does not contain clinical advice. LabWest encourages users of this information to seek advice from an appropriate health practitioner before making decisions based on any aspect of this report. Never disregard, delay seeking or discontinue medical advice based on information contained in this report.

REFERENCE RANGES:
The reference ranges shown in this report have been established from multiple sources, and result from a combination of information in the public domain, published research papers and LabWest's analysis results. They are provided as an indication only, and diagnosing health practitioners should satisfy themselves independently as to the significance and suitability of reference ranges with respect to the individual's age, gender, etc. Important Note: The reference ranges should not be considered as absolute limits for determining deficiency, toxicity or acceptance

Toxic Elements: These elements are referred to as “toxic” due to their potential to interfere with the body’s normal biological functions. Although present in trace amounts in our environment, accumulation of high levels of these elements is undesirable as it may lead to adverse health effects.
Other Trace Elements: These elements are potentially of interest in assessing biological systems, and may offer supporting evidence in diagnoses. Total Rare Earth Metals Load includes the Lanthanides (La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu) plus Yttrium (Y) and Scandium (Sc).
Nutrient Elements: The major nutrient elements are considered essential to the proper functioning of biological systems and consequently human health. Metabolism is dependent on appropriate supply and balance of these elements.
Key Ratios: With the major nutrient elements, relative concentration ratios may be as important as absolute levels as factors affecting efficient function of biological systems. This is due to the synergistic effect of these elements, for example sodium and potassium.

RETESTING:
Labwest urges users of this data to express caution when determining courses of action based on single data points. A trend in a particular value can be of significantly greater importance than a result from a single point in time, which may be influenced by other factors (e.g. contamination). Therefore Labwest recommends that, in addition to professional healthcare advice, a follow-up test be conducted after six-to-eight-weeks to assess trends in the metal concentrations.

Hair Tissue Analysis Comments

A. Toxic Elements
Aluminium content is within reference range
Antimony content is within reference range
Arsenic content is within reference range
Beryllium content is within reference range
Cadmium content is within reference range
Mercury content is within reference range
Lead content is within reference range
Uranium content is within reference range

B. Other Trace Elements
Barium content is within reference range
Bismuth content is within reference range
Germanium content is within reference range
Lithium content is within reference range
Nickel content is within reference range
Platinum content is within reference range
Rubidium content is within reference range
Silver content is within reference range
Thallium content is within reference range
Thorium content is within reference range
Tin content is within reference range
Titanium content is within reference range
Vanadium content is within reference range
Zirconium content is within reference range
Total rare earth element content is within reference range

Hair Tissue Analysis Comments

C. Nutrient Elements
Boron content is within reference range
Calcium content is above reference range. High hair calcium may result from high dietary intake, or mobilisation of the element in the body. Other nutrient minerals (magnesium, phosphorus) can affect bioavailability of calcium, the lack of which can cause depositions of calcium outside of preferred sites, in tissues such as hair, joints, blood vessels, gall bladder, lymph nodes, etc. Supplementation of dietary Vitamin D may cause increased deposition of calcium in hair. Conditions associated with high hair calcium may include: osteoporosis, hypoglycaemia, hormonal and metabolic imbalances. Note: Hair calcium levels may be altered by perming solutions, dyes or bleaches. Reported calcium levels in treated hair may therefore be higher than actually reflected in metabolism. References: US National Library of Medicine: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3241915/
Chromium content is within reference range
Cobalt content is within reference range
Copper content is above reference range. Increases in copper concentrations have been reported in response to stress, inflammation, and infection; in Parkinson disease and diabetes mellitus; and in conditions involving an obstruction to bile flow. Elevated copper levels are correlated to various mental and neurological illnesses including schizophrenia, depression, autism, tardive dyskinesia, and memory loss. Hepatic and renal dysfunctions may result from the specific accumulation of copper in these tissues. Copper excess may be the largest factor in the etiology of hypertension. Copper contamination of the hair sample may be caused by: permanent solutions, dyes, bleaches, and swimming pools in which copper algaecides have been used. References: "Clinical conditions altering copper metabolism in humans" Donna Beshgetoor and Michael Hambidge, Am J Clin Nutr 1998;67(suppl):1017S–21S. "Excess Copper as a Factor in Human Diseases" Pfeiffer, C. and Mailloux, R. Journal of Orthomolecular Medicine Vol. 2. No. 3, 1987: pp. 171-182
Iodine content is within reference range
Iron content is within reference range
Magnesium content is within reference range
Manganese content is within reference range
Molybdenum content is within reference range
Phosphorus content is within reference range
Potassium content is within reference range
Selenium content is within reference range
Sodium content is within reference range
Strontium content is within reference range
Sulphur content is within reference range
Zinc content is within reference range

Hair Tissue Analysis Comments

D. Key Ratios
Sodium:potassium ratio is above reference range. This is known as the "Stress Ratio".
Calcium:potassium ratio is above reference range. This is known as the "Thyroid Ratio".
Calcium:phosphorus ratio is above reference range. Ca:P is known as the "metabolism ratio".
Calcium:magnesium ratio is above reference range. The Ca:Mg ratio is known as the "Blood Sugar Ratio".
Zinc:copper ratio is within reference range.
Zinc:cadmium ratio is above reference range.
Copper:molybdenum ratio is above reference range.