NutriPATH
Integrative Pathology Services
P: 1300 688 522
E: info@nutripath.com.au
A: PO Box 442 Ashburton VIC 3142

TEST PATIENT

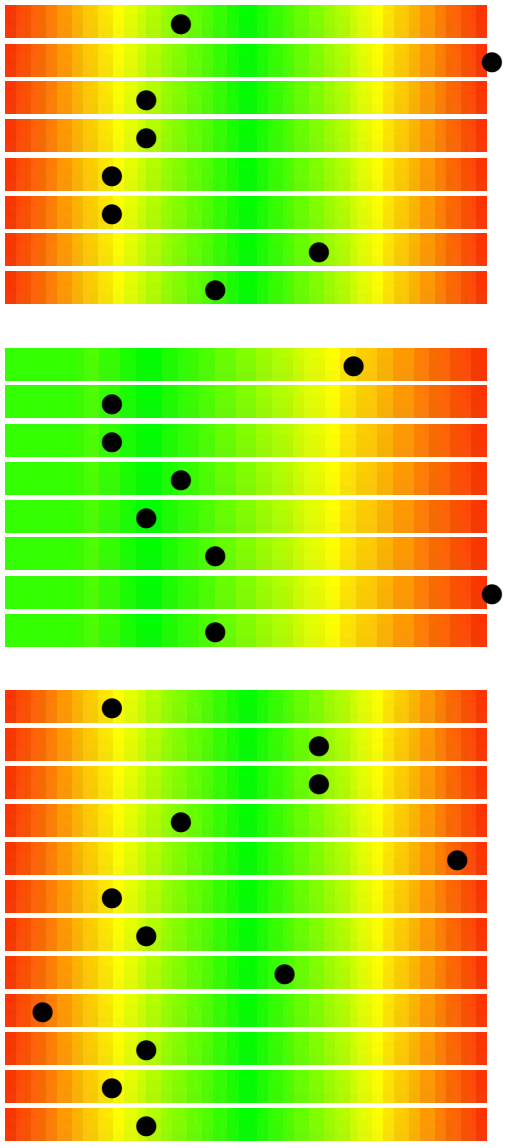
Sample Test Name
Sex : F
Date Collected : 00-00-0000
111 TEST ROAD TEST SUBURB
LAB ID: 00000000 UR#:0000000

TEST PHYSICIAN

DR JOHN DOE
111 CLINIC STREET
CLINIC SUBURB VIC 3000

INTEGRATIVE MEDICINE

HAIR	Result	Range	Units
Hair Mineral Analysis			ppm
Nutrient Mineral Levels			ppm
Hair Description	Brown		
Chromium (hair)	**0.06**	0.02 - 0.21	ppm
Copper (hair)	***54.82*** ***H**	10.00 - 41.00	ppm
Iron (Hair)	**6.08**	4.60 - 17.70	ppm
Manganese (hair)	**0.19**	0.05 - 0.92	ppm
Selenium (hair)	**0.41**	0.40 - 1.70	ppm
Zinc (hair)	***90.00*** ***L**	99.00 - 450.00	ppm
Calcium (Hair)	**1271.54**	220.00 - 1600.	ppm
Magnesium (hair)	**63.02**	20.00 - 130.00	ppm
Toxic Mineral Levels			ppm
Aluminium (hair)	**7.46**	0.00 - 8.00	ppm
Arsenic (hair)	**<0.01**	0.00 - 0.20	ppm
Cadmium (hair)	**0.01**	0.00 - 0.20	ppm
Lead (hair)	**0.57**	0.00 - 3.00	ppm
Mercury (Hair)	**0.06**	0.00 - 0.60	ppm
Nickel (hair)	**0.32**	0.00 - 1.00	ppm
Silver, Hair	***2.86*** ***H**	0.00 - 1.00	ppm
Tin, Hair	**0.27**	0.00 - 0.70	ppm
Hair Mineral Ratios			ppm
Calcium/Copper Ratio	**23.19**	5.50 - 292.00	RATIO
Calcium/Iron Ratio	**209.1**	16.1 - 293.0	RATIO
Calcium/Magnesium Ratio	**20.2**	4.9 - 26.1	RATIO
Calcium/Strontium Ratio	**1116.8**	40.7 - 5517.0	ppm
Calcium/Zinc Ratio	***14.1*** ***H**	0.9 - 11.3	RATIO
Iron/Copper Ratio	***0.1*** ***L**	0.1 - 2.5	RATIO
Iron/Manganese Ratio	**32.0**	5.5 - 195.0	RATIO
Zinc/Chromium Ratio	**1500.00**	383.00 - 2254.	RATIO
Zinc/Copper Ratio	***1.6*** ***L**	8.2 - 13.2	RATIO
Zinc/Iron Ratio	**14.8**	10.4 - 45.4	RATIO
Zinc/Magnesium Ratio	**1.43**	1.09 - 12.40	RATIO
Zinc/Manganese Ratio	**473.68**	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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Nutrient Minerals Comment

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 CuSO4). Elevated levels of copper often reflect exposure to swimming pool water treated with algaecide. 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.

LOW Zinc (Hair) Comment:
Low levels of Zinc in hair have been reported in lung cancer. They have also been reported in children with Pica, anorexia, and poor growth.
Deficiency may result in poor wound healing, poor sense of smell and taste, hypochlorhydria, night blindness, and immune dysfunction.
Zinc - is necessary for spermatogenesis, protein synthesis and degradation, haeme synthesis, CO2 transport, metabolism, RNA polymerases and the cytosol component of SOD. Because it has a fixed outer electron valence of +2 it can inhibit many iron based free radical reactions by displacing iron from its binding site. Zinc can be toxic at high levels.
Recommended Daily Intake: 15mg, however keep in mind that only 20-30% of zinc ingested is absorbed, therefore suggest doses of 50mg/day. Competition with Calcium, Iron and Copper can significantly impair absorption, as can high phytate foods and folic acid supplementation.
Dieatary Sources include: Meats, crustaceans, nuts, seeds, leafy and root vegetables.

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Toxic Hair Metals Comment

ALUMINIUM (Al):
Despite being a recognized neurotoxin, Al is used widely in everyday living

COMMON SOURCES:
Oral Al bioavailability from water appears to be about 0.3%, so food is the primary common source. However, Al bioavailability from food has not been adequately determined.
Industrial and medicinal exposure and perhaps antiperspirant use, can significantly increase absorbed aluminium. Inhalation bioavailability of airborne Al particles appears to be about 1.5% in the industrial environment but may be considerably higher in the vicinity of bauxite mines.
Habitual underarm antiperspirant application may result in aluminium absorption. All intramuscularly injected Al, e.g. from vaccines, may be absorbed over time. Al distributes unequally to all tissues. Distribution and renal excretion appear to be enhanced by citrate. Brain uptake of Al may be mediated by Al-transferrin and Al-citrate complexes. Aluminium is deposited in bone tissue and elimination half-lives of several years have been reported. Al elimination is primarily renal with ~ 2% excreted through the bile.

Most ingested aluminum comes from food and drink, while additional amounts may come from pharmaceuticals. Whilst the gastrointestinal absorption of aluminium is fairly minimal, its absorption is typically decreased by the presence of dietary phosphates (from animal protein sources), but may be increased by the presence of citric or malic acids (carboxylic acids) present in foods or drink. Excretion of aluminum from the bloodstream is predominantly by urine.

Once in the body, aluminum binds to the iron-bearing protein transferrin in the bloodstream, together with citrate & malic acid. Once inside a cell, aluminium may bind to DNA, ATP, NADP, NADPH or phosphorylated proteins. Th

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

Tests ordered: HAIR