



# BIO-MEDICALS PTY. LTD.

Australia / New Zealand Analytical & Nutraceutical Health Systems

*"Developing the Future of HealthCare, Naturally... Today."*

Ph: 61-7-5575-9595 Fax: 61-7-5575-9508

P.O. Box 154, Bond University, Qld. 4229

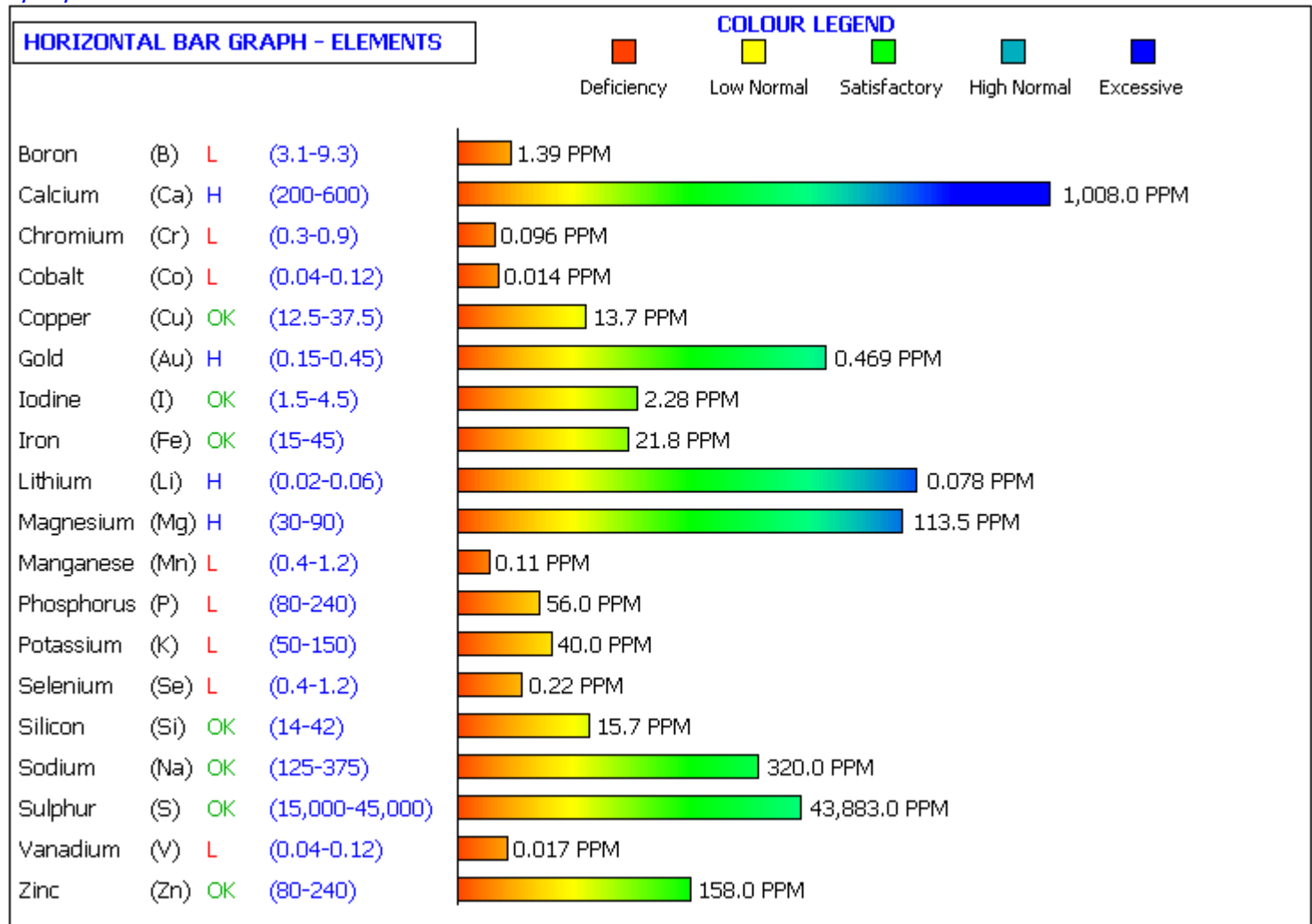
Email: info@bio-medicals.com

## **BIO-MEDICALS TISSUE MINERAL ANALYTICAL REPORT**

<u>Client Name:</u>	Jill Talbot			
<u>Client Address:</u>	P.O. Box 154 Bond University			
<u>City:</u>	Gold Coast		<u>Postal Code:</u>	4229
<u>State:</u>	Qld		<u>Country:</u>	Australia
<u>Ph:</u>	5575-9595		<u>Mobile:</u>	-
<u>Fax:</u>	htma@bio-medicals.com		<u>Test No:</u>	658
<u>Date of Test:</u>	3/03/2005		<u>Sample Type:</u>	Human Hair
<u>Location:</u>	Nape		<u>Hair Condition:</u>	Natural
<u>Occupation:</u>	Director		<u>Pregnant:</u>	No
<u>Rx:</u>	Nature's Boost		<u>Shampoo:</u>	-
<u>Conditioner:</u>	-		<u>Gen Health:</u>	N/A
<u>Colour Agent:</u>	-		<u>Colour:</u>	Blonde
<u>Colour Date:</u>	N/A		<u>Hair Spray:</u>	-
<u>Practitioner:</u>	Howard Talbot			

## BIOCHEMICAL ELEMENTS

3/03/2005



### **Boron (B)**

The elemental amount of Boron is **1.39 PPM** this amount is below the normal range of **3.1 to 9.3 PPM** for B. A depressed sample level of Boron is evidence for impaired Calcium and Magnesium utilisation, tendon / ligament problems, disordered bone metabolism and endocrine function. Screen for osteoporosis. Check growth rates in children. Alkaline phosphatase (ALP) may be elevated.

## **Calcium (Ca)**

The amount for Calcium is **1,008.0 PPM** this represents a level above the normal range of **200 to 600 PPM** for Ca. Surplus Calcium suggests possible fatigue, depression or apathy. If there is hypercalcaemia there can be loss of appetite, nausea, headache, fever, vomiting or epigastric pain, muscle weakness, enhanced thirst / xerostomia cardiac arrhythmia / tachycardia and possibly a urinary tract infection. Calcification of soft tissues can result in arthritis, arteriosclerosis and renal and biliary calculi. Constipation may be present. Check for sample contamination by hair preparations, perms, dyes, shampoos or bleaches, which could indicate artefactual elevation of Calcium to above the normal range.

## **Chromium (Cr)**

Jill's sample amount for Chromium is **0.096 PPM** that is below the normal range of **0.3 to 0.9 PPM** for Cr. The analysis showing a low hair level of Chromium may mean fatigue, impaired glucose tolerance, (with or without hypoglycaemia or diabetes) and lowered HDL cholesterol that may develop into atherosclerosis. Consider also failure to thrive (FTT) in children as evidenced by low percentile growth rates. Glucose tolerance factor is assembled with Cr<sup>3+</sup> in the molecular structure. Glucose tolerance factor is needed to facilitate the transport of ergogenic glucose into the human cells. Additionally attention deficit disorder (ADD) and attention deficit / hyperactivity disorder (ADHD) in children can be seen with Cr deficits as nervous tissue including the brain depend primarily on glucose as an energy source. Chromium deficiency is etiological in neuropathy, manifest as reduced tactile sensation in the hands and feet. Anxiety can be present and balance can be compromised. The clinical diseases associated with Chromium deficiency are aggravated by Vanadium deficiency

### **GOOD SOURCES OF CHROMIUM:**

- |              |              |                        |
|--------------|--------------|------------------------|
| * Oysters    | * Kelp       | * Grape Juice          |
| * Alfalfa    | * Wheat Germ | * Certain Animal Liver |
| * Vegetables | * Nuts       | * Egg Yolk             |
| * Molasses   | * Fruit      | * Black Pepper         |
| * Spirulina  | * Wheat      | * Peanuts              |

## **Cobalt (Co)**

Jill's assay result for Cobalt is **0.014 PPM** that is below the normal range of **0.04 to 0.12 PPM** for Co. A result under the normal range for Cobalt may mean fingertip paraesthesia, manifest as numbness or tingling in peripheral limbs. Mood swings can occur, and eventually central nervous system damage may follow. There is the possibility of subacute degeneration of the spinal cord. The tongue may be sore and the patient may experience chronic diarrhoea. Lean body mass may be reduced. Screen for pernicious anaemia as a reflection of vitamin B12 deficiency. Screen for megaloblastic anaemia too (vitamin B12 deficiency can deplete the folate pool). There can be increased risk of cardiac ischaemia. The low Cobalt can be caused by malabsorption, for instance due to dysbiosis, helicobacter or drugs that lower stomach acid. A serum B12 assay will differentiate between malabsorption and a defective membrane transport mechanism. Low serum B12 indicates malabsorption, whilst normal to high serum B12 points to defective membrane transport.

### **GOOD SOURCES OF COBALT:**

- |              |              |                          |
|--------------|--------------|--------------------------|
| * Salmon     | * Liver      | * Peas                   |
| * Butter     | * Peanuts    | * Molasses               |
| * Raw Sugar  | * Wheat Germ | * Green Leafy Vegetables |
| * Sardines   | * Kidney     | * Cornmeal               |
| * Wheat Bran |              |                          |

## **Copper (Cu)**

Jill's result for Copper is **13.7 PPM** this is in the normal range of **12.5 to 37.5 PPM** for Cu. Hair analysis giving normal levels of Copper reduces the probability of any Copper-dependent connective tissue, haematological or behavioural problems, but be alert for hidden Copper overload sequestered in the tissues. Hidden Copper is often due to multiple environmental toxins such as xenoestrogens.

Zinc antagonism! At face value there appears to be a systemic Copper deficit but this is not so! The hair Calcium is raised and the hair Potassium is depressed so that there exists a hidden Copper burden. Expect Zinc antagonism that can manifest as acne, inflammation, allergies, premenstrual syndrome and general or urinary tract infections (UTI). Query Jill regarding arthritis, check haeme levels for the existence of anaemia. There can be tachycardia, hypertension, migraines, nausea and insomnia. High Copper is risk-coercive to cerebrovascular accidents, such as strokes and transient ischaemic attacks (TIA's). Psychologic depression is not such a remote possibility; there may be mood swings, and flat affect with or without impaired facial recognition. Suicidal tendency is a contention. Copper excess can be etiologic in chronic fatigue syndrome (CFS) with the attendant weakness and malaise. Other manifestations possible from Copper overload are choreiform movements, myoclonal jerks and unusual postures.

Addendum:- Hidden Copper Imbalance:

Jill has a high hair Calcium and a low hair Potassium. This is linked to a Copper imbalance. This is so irrespective of the hair Copper level. Copper imbalance is associated with acne and premenstrual tension. The symptoms of Copper imbalance are identical to the symptoms of premenstrual tension. The Copper level tends to correlate with the level of oestrogen in the body. Copper imbalance tends to accentuate the emotions, and can contribute to depression, mood swings and irritability. Ask Jill to change diet to include more protein, preferably some animal protein as it is higher in Zinc and lower in Copper. Digestive enzymes and acidophilus will assist digestion until pathways are balanced. Recommend B-complex vitamins to increase pathway flux, increasing metabolic rate. Adrenal support including vitamins A, C, E and adrenal glandular substance, chelated Calcium, Magnesium, Manganese, Iron and Chromium.

### **AVOIDING HIGH COPPER FOODS**

Jill's sequestered Copper burden may induce cravings for high Copper foods! These foods have high Copper levels compared to Zinc. These are best avoided until the next evaluation:

Chocolate	Crab	Herring
Pecans	Almonds	Sesame Seeds
Bakers Yeast	Mushrooms	Walnuts
Avocado	Lobster	Peanut Butter
Liver	Bran Flakes	Shrimp
Trout	Brazil Nuts	Sunflower Seeds
Grapes		

### **Gold (Au)**

The amount of Gold is **0.469 PPM** this represents a level above the normal range of **0.15 to 0.45 PPM** for Au. Excessive Gold points to the possibility of chrysiasis, the development of a blue-grey pigmentation in skin and mucous membranes. This may be caused by exposure to Gold compounds. There can be minute reddish-purple particles were seen in the cornea (corneal chrysiasis) and in the lens (lens chrysiasis). This can result from Gold treatment for instance for rheumatoid arthritis. There can be nail pigmentation after parenteral gold therapy for rheumatoid arthritis: 'gold nails'. Skin rashes can be present, as can nephropathy, and aphthous stomatitis. Also metallic gold deposition has been observed in the teeth; reversible lymphadenopathies of the neck; immunoglobulin A loss under gold treatment; gold-induced appearance of RNA and DNA-antibodies and gold deposition in the skin.

### **Iodine (I)**

Hair analysis determination of Iodine is **2.28 PPM** that is in the normal range of **1.5 to 4.5 PPM** for I. An assay in the normal range for Iodine will not justify the existence of dysthyroidosis.

### **Iron (Fe)**

The elemental amount of Iron is **21.8 PPM** this is in the normal range of **15 to 45 PPM** for Fe. Hair levels normal in Iron lowers the chances of Iron deficient anaemia, or metabolic problems involving Iron.

### **Lithium (Li)**

The elemental amount of Lithium is **0.078 PPM** this amount is above the normal range of **0.02 to 0.06 PPM** for Li. A large reading for Lithium justifies a premise for elevated systemic Lithium. Lithium is found in the water table (ground water, seawater). It can interfere with Iodine uptake by the thyroid gland, and can block thyroxin release or thyroid stimulating hormone (TSH). Lithium is known to alter the intra-to-extra-cellular Potassium ratio, resulting in intracellular K<sup>+</sup> depletion and hyperkalemia. Excessive Li has been correlated with diabetes insipidus, hair loss, hypercalcuria, high urinary pH, leukocytosis, eosinophilia, hypothyroidism, weight gain, osteoporosis, fatigue, goitre and hyperkalemia. The high urinary pH results in discolouration of the urine. Thirst is increased and so is urination. High Lithium can cause sleepiness, confusion and disorientation. There can be skin eruptions, nausea / vomiting and tremors.

### **Magnesium (Mg)**

Assay of the element Magnesium is **113.5 PPM** that is above the normal range of **30 to 90 PPM** for Mg. An above normal amount of Magnesium suggests possible nausea, diarrhoea, loss of appetite, muscle weakness, fatigue, lethargy, confusion, dyspnea and psychological depression. Check for cardiac arrhythmia and profound hypotension.

## **Manganese (Mn)**

Determined level of Manganese is **0.11 PPM** that is below the normal range of **0.4 to 1.2 PPM** for Mn. From the hair analysis, a low result for Manganese points to the possibility of congenital ataxia / deafness. Tinnitus may be present. Asthmatic conditions may be exacerbated. There may be soft-tissue problems such as chondromalacia and chondrodystrophy, but also the epithelia may be thin, weak or broken. Poor cartilage structure may be a factor in arthritis. There is an increased chance of repetitive strain injuries (RSI), temporo-mandibular joint problems (TMJ) and carpal tunnel syndrome. Convulsions may occur. There may be reduced growth of long bones in children experiencing reduced linear growth and frequent growth pains. Reproductive function may be impaired with respect to reduced libido, infertility and spontaneous miscarriage or stillbirths. Check also for diabetes, allergies, dizziness, weakness, fatigue and a tendency to easily fracture bones. Behavioural disturbances can eventuate, usually manifest as domestic violence in adults, and in children, learning problems. Investigate the existence of ataxia in your client.

### Enzymes:

Manganese-containing superoxide dismutase, catalase, and glutathione peroxidase may be compromised. Pyruvate carboxylase, a manganese-containing enzyme, and phosphoenolpyruvate carboxykinase, a manganese-activated enzyme, play critical roles in gluconeogenesis. Arginase, another manganese-containing enzyme, is required by the liver for the urea cycle, a process that detoxifies ammonia generated during amino acid metabolism. Manganese is required for the activation of prolylase needed to provide proline for collagen formation in human skin cells.

### GOOD SOURCES OF MANGANESE:

- |             |            |           |
|-------------|------------|-----------|
| * Egg Yolk  | * Pecans   | * Parsley |
| * Walnuts   | * Peanuts  | * Kelp    |
| * Olives    | * Tea      | * Avocado |
| * Cloves    | * Rice     | * Barley  |
| * Hazelnuts | * Berries  | * Alfalfa |
| * Wheat     | * Legumes  | * Meat    |
| * Corn      | * Coconuts |           |

## **Phosphorus (P)**

Analysis result for Phosphorus is **56.0 PPM** this is below the normal range of **80 to 240 PPM** for P. This depressed hair sample assay for Phosphorus is a sign of impaired bioenergetic pathways. There is often anxiety then fatigue, muscle weakness and reproductive dysfunction. Dental caries and arthritides may be pronounced. Does your client experience dyspnoea or irregular breathing?

### GOOD SOURCES OF PHOSPHORUS:

- |              |            |              |
|--------------|------------|--------------|
| * Salmon     | * Caviar   | * Chick Peas |
| * Tuna       | * Popcorn  | * Kidney     |
| * Wheat Bran | * Soybeans | * Yeast      |
| * Cheese     | * Chicken  | * Rye        |
| * Garlic     | * Oatmeal  | * Alfalfa    |
| * Eggs       | * Meat     | * Chocolate  |
| * Trout      |            |              |

## **Potassium (K)**

Hair analysis hair level of Potassium is **40.0 PPM** that is below the normal range of **50 to 150 PPM** for K. This reduced hair level of Potassium alerts clinicians to investigate for fluid retention and cardiac dysarrhythmias. Hypoglycaemic and sugar-craving episodes may worsen. Low K may be initiated by prolonged diarrhoea, but constipation may then result from the Potassium deficiency. Prolonged physical and / or psychological stressors may initiate K deficiency. Fatigue, drowsiness, muscular weakness, nausea, mental confusion, insatiable thirst and irrational behaviour are hallmark traits. Anxiety may be present. Hypertension, cellulitis and toxemia can occur, but screen for renal dysfunction first, as aggressive Potassium supplementation can be fatal. Screen for de novo skin disorders and allergic responses. Obstetric complications are more likely to occur if Potassium is depressed. There is often Sodium retention. Acne vulgaris can be a problem for your client.

NB: Check for absence of renal / adrenal problems before any K+ supplementation.

### GOOD SOURCES OF POTASSIUM:

- |                       |                          |           |
|-----------------------|--------------------------|-----------|
| * Chocolate           | * Walnuts                | * Alfalfa |
| * Avocadoes           | * Prunes                 | * Garlic  |
| * Kelp                | * Potatoes               | * Fruit   |
| * Cashews             | * Molasses               | * Meat    |
| * Peanuts             | * Figs                   | * Dates   |
| * Wheat Bran          | * Yeast                  | * Almonds |
| * Sardines            | * Bananas                | * Pecans  |
| * Spinach             | * Fish                   |           |
| * Apple Cider Vinegar | * Green Leafy Vegetables |           |

## **Selenium (Se)**

Jill's sample amount for Selenium is **0.22 PPM** this is below the normal range of **0.4 to 1.2 PPM** for Se. From analysis of hair, a low result for Selenium points to the possibility of increased oxidative stress / damage and erythrocyte fragility. Lipofuscin 'age' spots and liver spots can be present. Fatigue may be worsened. If HIV / AIDS is present, disease progression is often accelerated in Se deficiencies. Muscle pain (myalgia) and scoliosis are sometimes observed. Muscular dystrophy (MD) and cystic fibrosis (CF) patients can have a poorer prognosis if there exists a concomitant Se insufficiency. Is cardiomyopathy or multiple sclerosis (MS) present? Does your client experience cardiac palpitations or have arrhythmia? Myocardial infarctions can occur. Check for hepatic cirrhosis, pancreatitis and pancreatic atrophy. Is Gehrig's disease (ALS), Parkinson's or Alzheimer's present?

Selenium status may be reduced by excessive dietary polyunsaturates which may be refined / heated / oxidised oils. Se status is also compromised in toxic metal poisoning. Screen for sickle-cell anaemia. Fertility may be reduced; babies may be low birthweight, with increased chance of mortality and sudden infant death syndrome (SIDS). Malignant tumours will appear more frequently, especially if there is a family history of cancer. Toxic metal poisoning may be worse and white muscle disease can occur as a result of reduced mitochondriae. In women, placental retention can occur at parturition. Se deficiency may reduce thyroid function. Diarrhoea can initiate deficiency. Is there muscle wasting?

### **GOOD SOURCES OF SELENIUM:**

- |              |              |               |
|--------------|--------------|---------------|
| * Salmon     | * Wheat Germ | * Barley      |
| * Beef       | * Prawns     | * Lamb        |
| * Brown Rice | * Kelp       | * Scallops    |
| * Lobster    | * Trout      | * Liver       |
| * Cashews    | * Egg        | * Walnuts     |
| * Pork       | * Oysters    | * Alfalfa     |
| * Mackerel   | * Garlic     | * Brazil Nuts |

## **Silicon (Si)**

Jill's result for Silicon is **15.7 PPM** that being in the normal range of **14 to 42 PPM** for Si. The desired (normal) result for Silicon cannot indicate the presence of Silicon-dependent osteomalacia or connective tissue disorders.

## **Sodium (Na)**

Hair analysis hair level of Sodium is **320.0 PPM**; it is in the normal range of **125 to 375 PPM** for Na. The satisfactory level of Sodium reduces the probability of hypochlorohydrria, hypotension, allergies or anorexia that could be linked to Sodium deficiency.

## **Sulphur (S)**

The amount of Sulphur is **43,883.0 PPM** that is at a level in the normal range of **15000 to 45000 PPM** for S. This normal range result for Sulphur lowers the chances of inadequate Sulphur intake from primary proteins.

## **Vanadium (V)**

The assay for the element Vanadium is **0.017 PPM**; it is below the normal range of **0.04 to 0.12 PPM** for V. From analysis of hair, a low result for Vanadium is evidence for exacerbation of Syndrome 'X' disorders. This occurs because Vanadium is synergistic with Chromium. Vanadium is insulin-mimetic, enhancing membrane transport and DNA synthesis. Vanadium inhibits human cholesterol biosynthesis, decreasing plasma levels of cholesterol and atherosclerotic plaques, for instance in the aorta. Clinical diseases associated with Vanadium deficiency include slow growth, increased infant mortality, elevated cholesterol / triglycerides, hypoglycemia, hyperinsulinemia, diabetes, cardiovascular disease and obesity. Vanadium initiates the 'isotropic effect' upon the myocardium (an increase in the contractile force of the heart muscle).

### GOOD SOURCES OF VANADIUM:

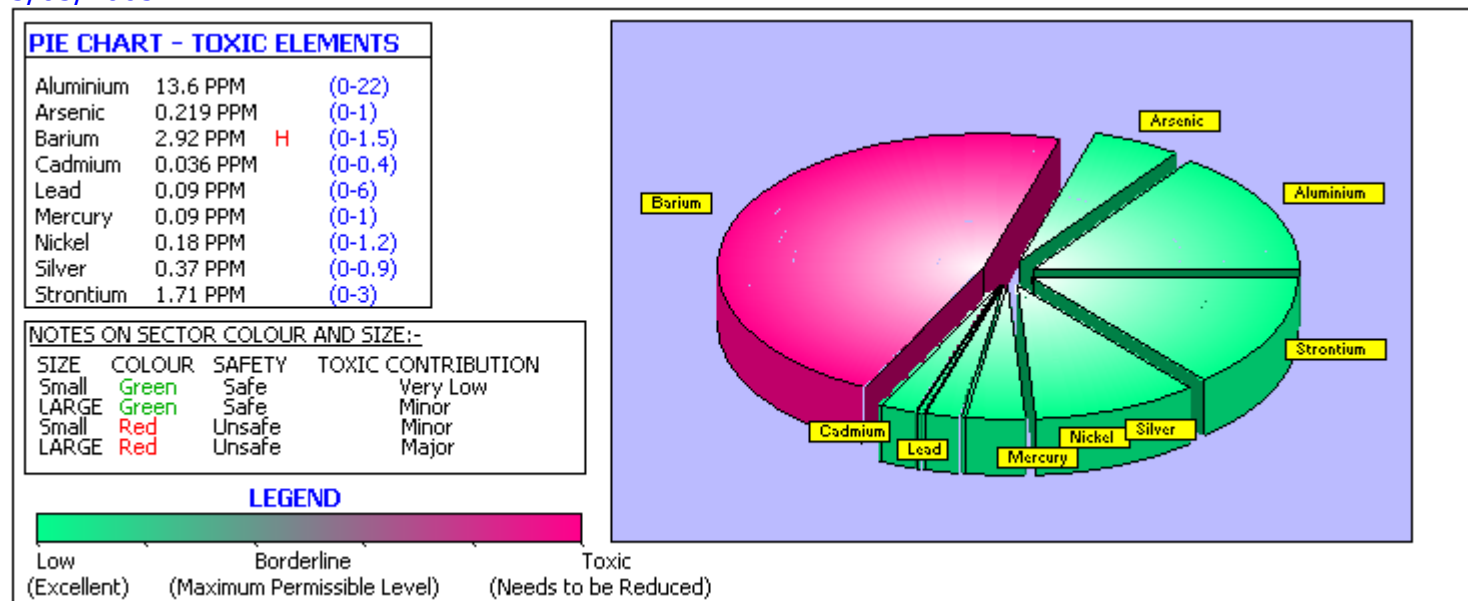
- \* Sea Cucumber (*Apostichopus japonicus*) - otherwise known as trepang (in oriental soups)
- \* Mushrooms           \* Shellfish           \* Black Pepper
- \* Parsley               \* Dill Weed           \* Grains
- \* Infant Cereals

## **Zinc (Zn)**

Assay of the element Zinc is **158.0 PPM** that is at a level in the normal range of **80 to 240 PPM** for Zn. The expected normal range level for Zinc will not support the presence of any of the 200 plus metabolic anomalies possible from a Zinc deficiency.

## TOXIC ELEMENTS

3/03/2005



### Important Note On Toxic Element Levels:

Where toxic elements are technically referred to as acceptable, please note that even low levels of toxic elements can be deleterious to your health, and may require medical and / or nutraceutical management.

### Aluminium (Al)

The hair level for Aluminium is **13.6 PPM** that is at a level in the acceptable range of **0 to 22 PPM** for Al. The satisfactory hair level of Aluminium reduces the probability of Aluminium toxicity with any of the attendant effects upon nervous, respiratory and reproductive systems and - the skin. Although acceptable this level could be further reduced by filtering municipal water and avoiding foods packed in aluminium cans.

### Arsenic (As)

After hair assay the result for Arsenic is **0.219 PPM**; it is in the acceptable range of **0 to 1 PPM** for As. The satisfactory level of Arsenic will not support the presence of arsenic-induced disorders of the nervous, digestive, renal, hepatic, cardiovascular, respiratory or reproductive systems; or the skin.

### **Barium (Ba)**

After hair assay the result for Barium is **2.92 PPM** that is at a level above the acceptable range of **0 to 1.5 PPM** for Ba. A supernormal hair level of Barium may mean excess Barium in the body. Barium is known to activate the secretion of catecholamines from the adrenal medulla without prior Calcium deprivation. It may displace calcium from the cell membranes, thereby increasing permeability and providing stimulation to muscles. Eventual paralysis of the central nervous system may occur. The acute symptoms include excess salivation, vomiting, diarrhea, increased blood pressure, muscular tremors, weakness, paresis, anxiety, dyspnea, and cardiac irregularities. A severe loss of Potassium can account for some of the symptoms. Convulsions and death from cardiac and respiratory failure can occur. Magnesium and sodium sulfate are antidotal if taken soon after ingestion since either salt will result in the formation of insoluble barium sulphate and prevent further absorption.

Aspiration of a large amount of barium into the right main bronchus can result in tachycardia, tachypnoea, fever, and oxygen saturation. Later symptoms include a moist cough with widespread rales. Other symptoms, from ingestion of Barium salts include nausea, vomiting, diarrhea, and crampy abdominal pain. Ventricular tachycardia, flaccid paralysis of the extremities, shortness of breath, and respiratory failure have been documented. Barium carbonate dust is a bronchial irritant. Barium oxide dust is considered a dermal and nasal irritant. Industrial workers exposed to barium dust, usually in the form of barium sulfate or carbonate, can develop a benign pneumoconiosis referred to as 'baritosis'. After removal from the sources of exposure, baritosis is reversible in most cases. Baritosis results in a significantly higher incidence of hypertension. The cardiovascular system responds with increased blood pressure and increased incidence of cardiovascular disease. Convulsions and death from cardiac and respiratory failure can occur. The nervous system may be afflicted with weakness, tremors, anxiety, and dyspnea. The gastrointestinal system can experience excess salivation, vomiting, and diarrhea.

### **Cadmium (Cd)**

Assay of the element Cadmium is **0.036 PPM** this amount is in the acceptable range of **0 to 0.4 PPM** for Cd. The desired normal range result for Cadmium reduces the probability of Cadmium-induced immunological, circulatory, skeletal or reproductive disorders.

### **Lead (Pb)**

The assay for the element Lead is **0.09 PPM**; it is in the acceptable range of **0 to 6 PPM** for Pb. The hair result within the normal range for Lead cannot indicate the presence of any neurological, digestive, renal or reproductive anomalies as a result of Lead excess.

### **Mercury (Hg)**

Hair assessment for Mercury is **0.09 PPM** this amount is in the acceptable range of **0 to 1 PPM** for Hg. The expected normal range level for Mercury will not justify the existence of the existence of any neuropsychological, digestive, skin or renal problems from the toxic effects of Mercury.

### **Nickel (Ni)**

Analysis result for Nickel is **0.18 PPM** this is in the acceptable range of **0 to 1.2 PPM** for Ni. A normal hair level of Nickel will not support the presence of Nickel overload.

### **Silver (Ag)**

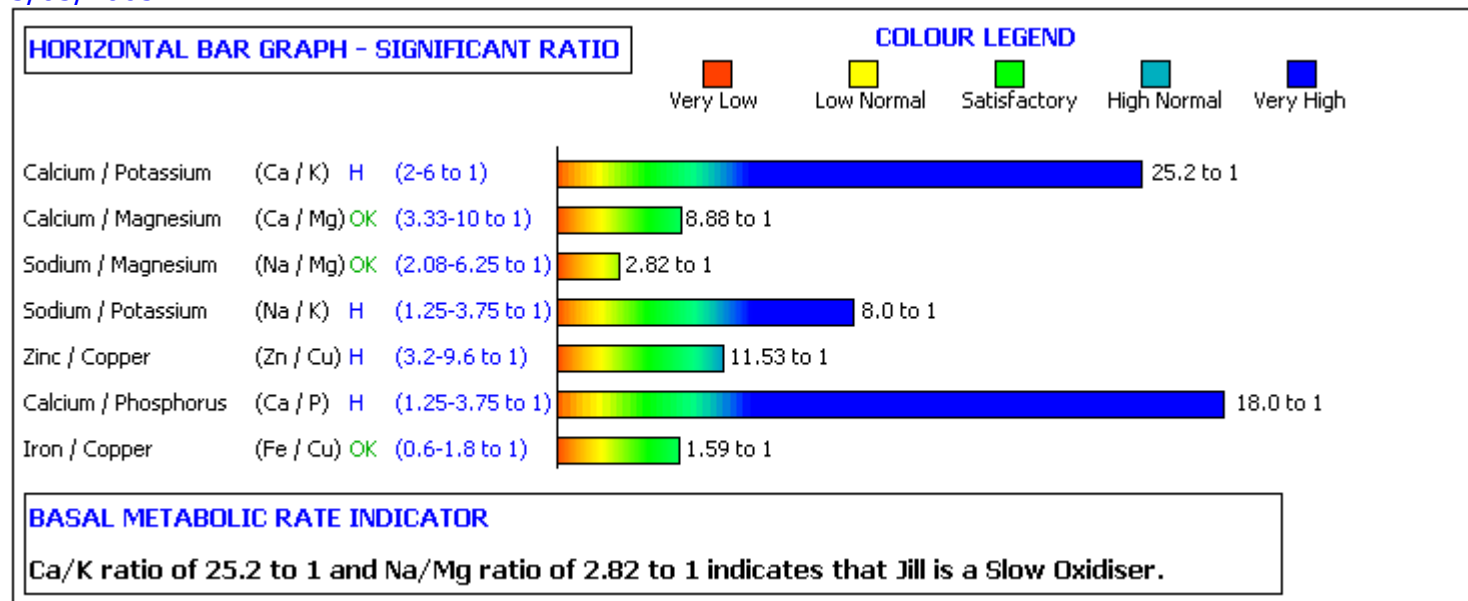
From the hair analysis the result for Silver is **0.37 PPM** that being in the acceptable range of **0 to 0.9 PPM** for Ag. A hair assay result normal in Silver draws clinical attention away from any form of Silver toxicity.

### **Strontium (Sr)**

The assay for the element Strontium is **1.71 PPM** this amount is in the acceptable range of **0 to 3 PPM** for Sr. A normal intra-range level for Strontium does not indicate Strontium overload.

## SIGNIFICANT RATIOS

3/03/2005



### Calcium / Potassium (Ca / K)

Sample content of Calcium / Potassium is **25.2 to 1** that being above the normal range of **between 2 to 1 and 6 to 1** for Ca / K. A high analysis result for Calcium / Potassium is evidence for the existence of hypothyroidosis. Check with Jill for the existence of fatigue, tiredness or psychological depression. Excessive intake of Calcium and / or increased Calcium retention increases Potassium requirements, but ensure adequate renal and adrenal functions before considering supplementation with Potassium or high Potassium foods.

### Calcium / Magnesium (Ca / Mg)

The hair sample assay for Calcium / Magnesium is **8.88 to 1** this represents a level in the normal range of **between 3.33 to 1 and 10 to 1** for Ca / Mg. The satisfactory hair level of Calcium / Magnesium does not indicate problems associated with dysglycaemia or blood pressure anomalies.

### Sodium / Magnesium (Na / Mg)

Determined level of Sodium / Magnesium is **2.82 to 1** that is at a level in the normal range of **between 2.08 to 1 and 6.25 to 1** for Na / Mg. Hair analysis giving normal levels of Sodium / Magnesium will not support the presence of adrenocortical dysregulation.

### **Sodium / Potassium (Na / K)**

Jill's sample amount for Sodium / Potassium is **8.0 to 1** that being above the normal range of **between 1.25 to 1 and 3.75 to 1** for Na / K. A surfeit level of Sodium / Potassium suggests possible a state of chronic stress, 'fight or flight' temperament leading to adrenal exhaustion. There will probably be reduced immune function. Renal function may be compromised and there may be oedematous weight gain - water retention not increased lean body muscle mass. Check renal and adrenal functions before considering Potassium supplementation or recommending high Potassium foods.

### **Zinc / Copper (Zn / Cu)**

The sample level for Zinc / Copper is **11.53 to 1** that is at a level above the normal range of **between 3.2 to 1 and 9.6 to 1** for Zn / Cu. A high analysis result for Zinc / Copper will not support the presence of dysglycaemia or infections.

### **Calcium / Phosphorus (Ca / P)**

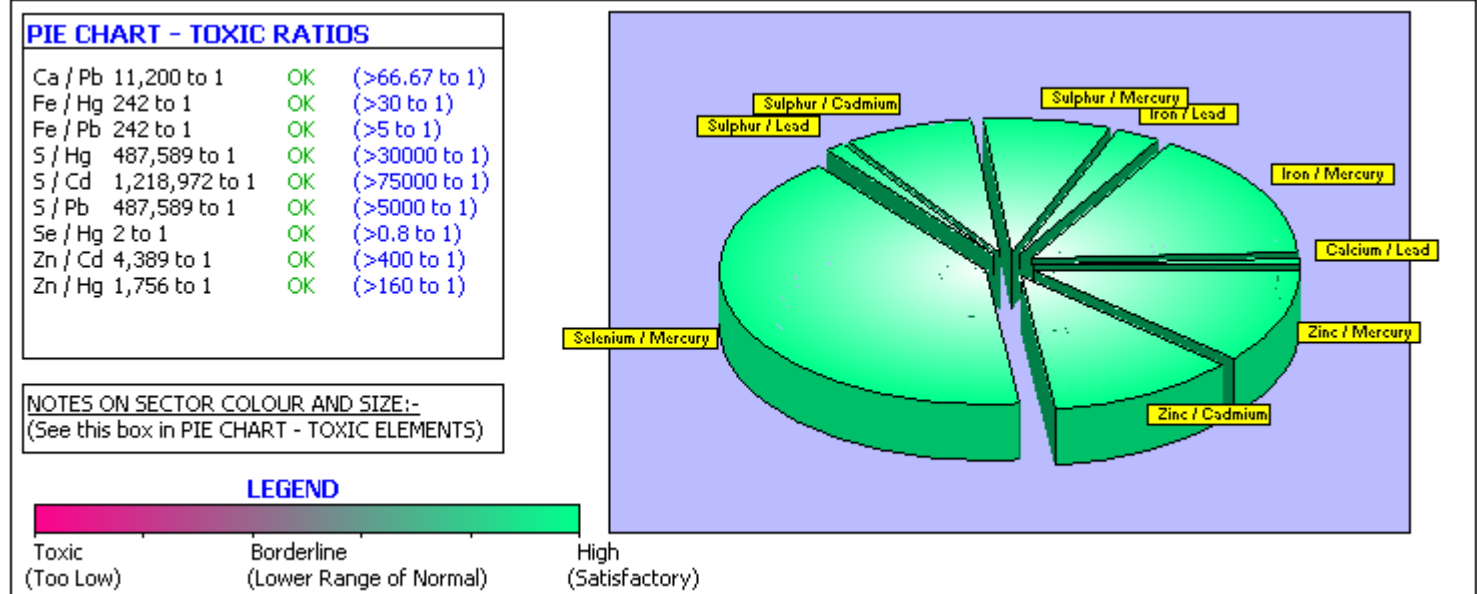
The sample level for Calcium / Phosphorus is **18.0 to 1** that is above the normal range of **between 1.25 to 1 and 3.75 to 1** for Ca / P. An above normal amount of Calcium / Phosphorus may mean a dominantly parasympathetic state. She will tend to walk, talk, think and work slowly.

### **Iron / Copper (Fe / Cu)**

Assay level for Iron / Copper is **1.59 to 1** that being in the normal range of **between 0.6 to 1 and 1.8 to 1** for Fe / Cu. A normal intra-range level for Iron / Copper can indicate normal tissue Iron uptake. Normal Iron / Copper suggests adrenal sufficiency.

## TOXIC RATIOS

3/03/2005



### Calcium / Lead (Ca / Pb)

The hair level for Calcium / Lead is **11,200.0 to 1** this represents a level within the acceptable range of over **66.67 to 1** for Ca / Pb. A high ratio of Calcium / Lead reduces the probability of Lead to Calcium overload.

### Iron / Mercury (Fe / Hg)

The hair level for Iron / Mercury is **242.22 to 1** that being within the acceptable range of beyond **30 to 1** for Fe / Hg. A surfeit ratio of Iron / Mercury lowers the chances of oversaturation of Mercury with respect to Iron.

### Iron / Lead (Fe / Pb)

The result for the element Iron / Lead is **242.22 to 1** this amount is within the acceptable range of at least **5 to 1** for Fe / Pb. A raised proportion of Iron / Lead cannot indicate the presence of Iron inhibition that may have been due to excessive Lead.

### Sulphur / Mercury (S / Hg)

Jill's hair analysis for Sulphur / Mercury is **487,588.89 to 1** this represents a level within the acceptable range of not less than **30000 to 1** for S / Hg. A high analysis result for Sulphur / Mercury reduces the probability of Mercury toxicity (via Sulphur titration) being an issue.

### **Sulphur / Cadmium (S / Cd)**

Hair assessment for Sulphur / Cadmium is **1,218,972.22 to 1** this is within the acceptable range of over **75000 to 1** for S / Cd. A safely elevated proportion of Sulphur / Cadmium draws clinical attention away from Cadmium overload compared to Sulphur.

### **Sulphur / Lead (S / Pb)**

The hair sample assay for Sulphur / Lead is **487,588.89 to 1** this is within the acceptable range of beyond **5000 to 1** for S / Pb. Hair ratio surplus in Sulphur / Lead does not indicate ramifications of Lead toxicity, which could have been for instance neurological or haematological.

### **Selenium / Mercury (Se / Hg)**

Determined level of Selenium / Mercury is **2.44 to 1** this represents a level within the acceptable range of greater than **0.8 to 1** for Se / Hg. A high hair ratio of Selenium / Mercury may mean no clinical problems from Mercury overload compared to Selenium level.

### **Zinc / Cadmium (Zn / Cd)**

Jill's hair measurement for Zinc / Cadmium is **4,388.89 to 1** this amount is within the acceptable range of minimally **400 to 1** for Zn / Cd. An abundant hair ratio of Zinc / Cadmium reduces the probability of Cadmium overload with respect to Zinc level.

### **Zinc / Mercury (Zn / Hg)**

Sample content of Zinc / Mercury is **1,755.56 to 1** this is within the acceptable range of > **160 to 1** for Zn / Hg. Raised Zinc / Mercury lowers the chances of problems expected from excess Mercury as compared to Zinc level.

**Special Note:**

The Calcium / Phosphorus ratio is above the ideal ratio of 2.5 to 1. This means that the autonomic status is dominantly parasympathetic. This is usually found in slow oxidisers and indicates clinical situations of exhaustion and stress. Elevation of Sodium / Potassium ratio with low Manganese suggests the possibility of allergy(ies). The raised Calcium and lowered Chromium suggest the presence of glucose intolerance, which is reinforced by an elevated Magnesium level.

**These Nutrient Elements Were Abnormal:**

LOW: Boron, Chromium, Cobalt, Manganese, Phosphorus, Potassium, Selenium, Vanadium

HIGH: Calcium, Gold, Lithium, Magnesium

**These Toxic Elements Were Abnormal:**

HIGH: Barium

**These Significant Ratios Were Abnormal:**

LOW: None

HIGH: Calcium / Potassium, Sodium / Potassium, Zinc / Copper, Calcium / Phosphorus

**These Toxic Ratios Were Abnormal:**

LOW: None

Please see your Practitioner for possible Recommended Supplements and Health Management Advice.

## **Health Practitioner's Recommended Supplements and Patient Management Advice** **Page**

Please use your invaluable knowledge, expertise and education in prescribing and managing your Patient / Clients healthcare needs.

The following suggestions are recommendations and guidance only, in accordance with your Patient / Clients Hair Tissue Mineral Analysis (HTMA) results.

Should you require any support or guidance regarding supplementation for your Patient / Client, please do not hesitate to contact us.

**Food Sources of Deficient POTASSIUM (Where Available):**  
**Avoid high Potassium foods if adrenocortical or renal disease is present.**

<b>TOP 10 FOODS AS SOURCES OF POTASSIUM</b>	<b>POTASSIUM in mg. per 100gr. or ml.</b>
LEAVENING AGENTS,CRM OF TARTAR	16500
LEAVENING AGENTS,BAKING PDR,LOW-SODIUM	10100
TEA,INST,UNSWTND,PDR	6596
TEA,INST,UNSWTND,PDR,DECAFFEINATED	6596
PARSLEY,FREEZE-DRIED	6300
CHERVIL,DRIED	4740
CORIANDER LEAF,DRIED	4466
CELERY FLAKES,DRIED	4388
PARSLEY,DRIED	3805
COFFEE,INST,REG,PDR	3535

**Food Sources of Deficient PHOSPHORUS (Where Available):**

<b>TOP 10 FOODS AS SOURCES OF PHOSPHORUS</b>	<b>PHOSPHORUS in mg. per 100gr. or ml.</b>
LEAVENING AGENTS,BAKING PDR,DOUBLE-ACTING,STRAIGHT PO4	9918
LEAVENING AGENTS,BAKING PDR,LOW-SODIUM	6869
KRAFT,JELLO FAT&SGR FR INST RED CAL PUD&PIE FLNG VAN,W/ A,PD	2368
LEAVENING AGENTS,BAKING PDR,DOUBLE-ACTING,NA AL SULFATE	2191
PUDDINGS,ALL FLAVORS XCPT CHOC,LO CAL,INST,DRY MIX	2179
KRAFT,JELLO FAT& SUGR FR INST RED CAL PUD&PIE FLNG CHOC,W/ A	1717
COTTONSEED MEAL,PART DEFATTED (GLANDLESS)	1684
RICE BRAN,CRUDE	1677
PUDDINGS,CHOC FLAVOR,LO CAL,INST,DRY MIX	1660
COCOA MIX,W/ ASPT,LO CAL,PDR,W/ ADD CA P,W/ ADD NA OR VIT A	1630

**Food Sources of Deficient MANGANESE (Where Available):**

<b>TOP 10 FOODS AS SOURCES OF MANGANESE</b>	<b>MANGANESE in mg. per 100gr. or ml.</b>
TEA,INST,UNSWTND,PDR	74.042
TEA,INST,UNSWTND,PDR,DECAFFEINATED	74.042
TEA,INST,UNSWTND,LEMON-FLAVORED,PDR	30.67
CLOVES,GROUND	30.033
SAFFRON	28.408
SPICES,CARDAMOM	28
GINGER,GROUND	26.5
CEREALS RTE,WHEAT GERM,TSTD,PLN	19.956
CEREALS RTE,QUAKER,KRETSCHMER WHEAT GERM,REG	19.08
CEREALS RTE,QUAKER,KRETSCHMER TSTD WHEAT BRAN	17.38

**Food Sources of Deficient SELENIUM (Where Available):**

<b>TOP 10 FOODS AS SOURCES OF SELENIUM</b>	<b>SELENIUM in mcg. per 100gr. or ml.</b>
BRAZILNUTS,DRIED,UNBLANCHED	1917
MIXED NUTS,WO/PNUTS,OIL RSTD,W/SALT	421.5
MIXED NUTS,OIL RSTD,W/PNUTS,W/SALT	421.2
PORK,FRSH,VAR MEATS&BY-PRODUCTS,KIDNEYS,CKD,BRSD	311.5
LAMB,VAR MEATS&BY-PRODUCTS,KIDNEYS,CKD,BRSD	218.8
PORK,FRSH,VAR MEATS&BY-PRODUCTS,KIDNEYS,RAW	190
BEEF,VAR MEATS&BY-PRODUCTS,KIDNEYS,CKD,SIMMRD	168
OYSTER,PACIFIC,CKD,MOIST HEAT	154
TURKEY,FRYER-ROASTERS,SKN ONLY,CKD,RSTD	153.1
TURKEY,YOUNG TOM,SKN ONLY,CKD,RSTD	152.9

**Food Sources of Deficient VITAMIN B12 (COBALT) (Where Available):**

<b>TOP 10 FOODS AS SOURCES OF VITAMIN B12 (COBALT)</b>	<b>VITAMIN B12 (COBALT) in mcg. per 100gr. or ml.</b>
CLAM,MXD SP,CND,DRND SOL	98.89
CLAM,MXD SP,CKD,MOIST HEAT	98.89
LAMB,VAR MEATS&BY-PRODUCTS,LIVER,RAW	90.05
LAMB,VAR MEATS&BY-PRODUCTS,LIVER,CKD,PAN-FRIED	85.7
VEAL,VAR MEATS&BY-PRODUCTS,LIVER,CKD,BRSD	84.6
BEEF,VAR MEATS&BY-PRODUCTS,LIVER,CKD,PAN-FRIED	83.13
LAMB,VAR MEATS&BY-PRODUCTS,KIDNEYS,CKD,BRSD	78.9
LAMB,VAR MEATS&BY-PRODUCTS,LIVER,CKD,BRSD	76.5
VEAL,VAR MEATS&BY-PRODUCTS,LIVER,CKD,PAN-FRIED	72.5
MOOSE,LIVER,BRSD (ALASKA NATIVE)	71

## **Metabolic Type and Food:**

### **Slow Oxidisers:**

Jill will tend to burn carbohydrates too slowly. Slow oxidisers are prone to be diabetic. Slow oxidisers function well on a diet that is rich in low glycaemic index complex carbohydrates, fruits, vegetables, fish and dairy products.

### **Dietary Guidelines for Slow Oxidisers:**

#### **AVOID**

(Foods high in fat), sedative effect

bacon	cakes	mixed nuts
whole milk	donuts	broccoli
cream cheese	chocolate	cabbage
butter	peanut butter	soy
most dairy products	sour cream	vegetable shortening
ice cream (low fat OK)	margarine	lard

High purine foods

thymus (sweetbread)	herring	sardines
anchovies	tuna	salmon
liver	caviar	meat concentrates
artichoke hearts	beans	peas
lentils cauliflower	spinach	
asparagus		

Lipogenic/hypoglycaemia-inducing foods

sugars	fruit juices	alcoholic beverages
meals consisting mainly of starches and sugars		

### **CALCIUM IS HIGH AND POTASSIUM IS LOW, SO AVOID COPPER SUPPLEMENTS!**

#### **ALLOWED**

**PROTEINS:** Leanest red meat, whiting, bream, flathead, skinless chicken / turkey, egg whites, skim milk, skim cottage cheese

**CARBOHYDRATES:** vegetables, salads: lettuce, carrots, corn, green peppers, onions, radishes, cabbage, pickles, cucumbers, etc. In moderation: potatoes, brown rice, wholegrain spaghetti, macaroni, bread, crackers, cereals, fruit.

**FATS:** small amounts of foods rich in essential fatty acids (example fresh linseed, fresh sunflower seeds, olive oil)

**SUPPLEMENTS:** Vitamins B1, B2, B6, niacin, potassium citrate, magnesium citrate and chloride, manganese aspartate, and iron. PABA, vitamin C and D, and chromium are also recommended.

Eat a small breakfast (that contains protein) and restrict calcium. Do not batter or deep fry fish.

## **Australian Recommended Daily Intakes for Jill Talbot, female, age 45:**

Vitamin A1 (retinol): 750.0IU  
Vitamin B1 (thiamine): 0.8mg  
Vitamin B2 (riboflavin):1.2mg  
Vitamin B3 (niacin): 13.0mg  
Vitamin B6 (pyridoxine): 0.9mg to 1.4mg  
Vitamin M (folic acid): 200.0mcg  
Vitamin B12 (cyanocobalamin): 2mcg  
Vitamin C (ascorbic acid): 30.0mg  
Vitamin E (d-alpha tocopherol): 7.0IU  
Zinc: 12.0mg  
Iron: 12.0mg to 16.0mg  
Iodine: 120.0mcg  
Magnesium: 270.0mg  
Calcium: 800.0mg  
Phosphorus: 1000.0mg  
Selenium: 70.0mcg  
Sodium: 920.0mg to 2300.0mg  
Potassium: 1950.0mg to 5460.0mg  
Protein: 45.0gr

### **Anthropometry:**

Jill's height is 170.0 cm [5 foot 7 inches],  
at a weight of 80.0 kg [12 st 8 lbs],  
this represents a body mass index of 27.7 kg/m<sup>2</sup>, which is overweight, not obese.

### **Disclaimer:**

The information and directives in this report are for the purpose of an adjuvant to; and not a replacement for certified medical care, diagnosis and treatments. Bio-Medicals Pty. Ltd. assumes no legal responsibilities either direct or implied, for any clinical outcomes whatsoever.

**Copyright, BIO-MEDICALS (2001-2005)**

\_\_\_\_\_  
<END OF DOCUMENT>\_\_\_\_\_