

**InterClinical Laboratories Pty Limited**

ABN 89 076 386 475

PO Box 6474, Alexandria NSW 2015 Australia

Ph: 02 9693 2888 Fax: 02 9693 1888

Email lab@interclinical.com.au

LABORATORY NO.:

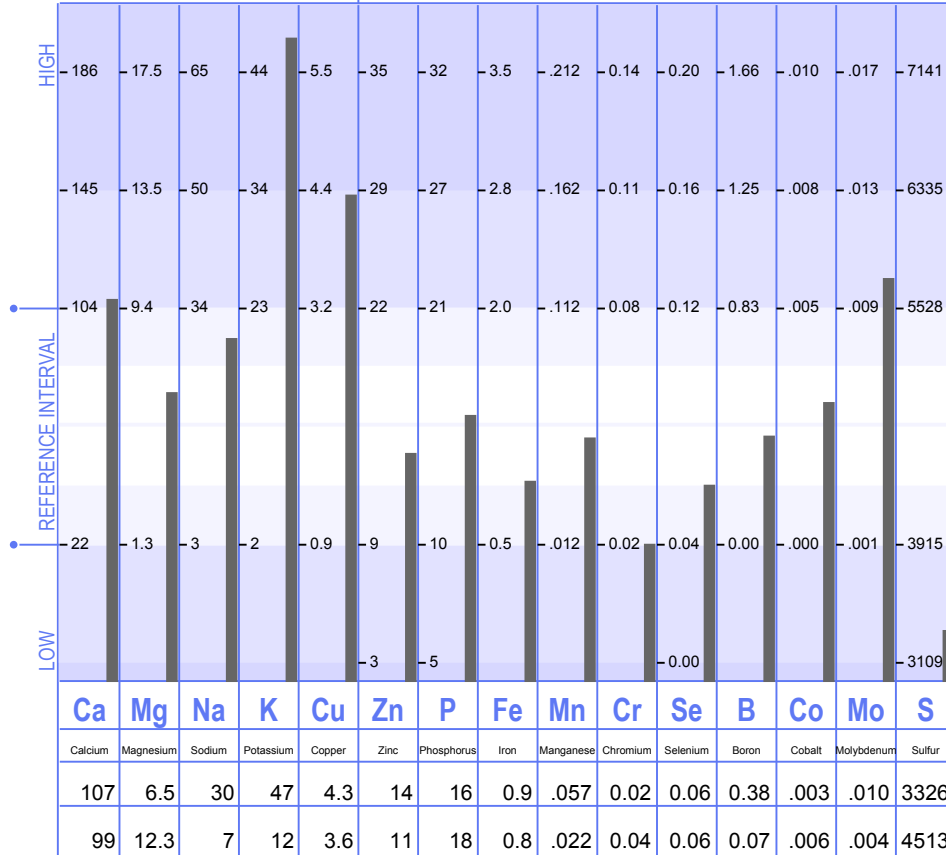
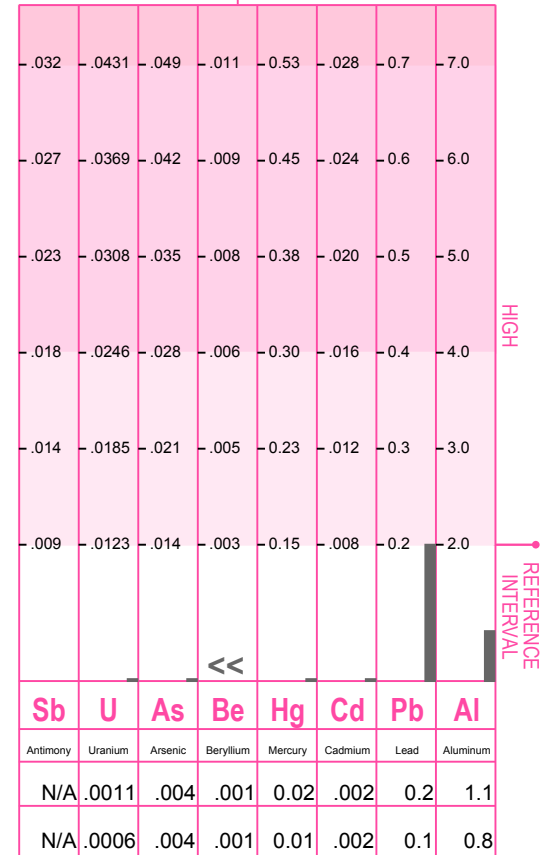
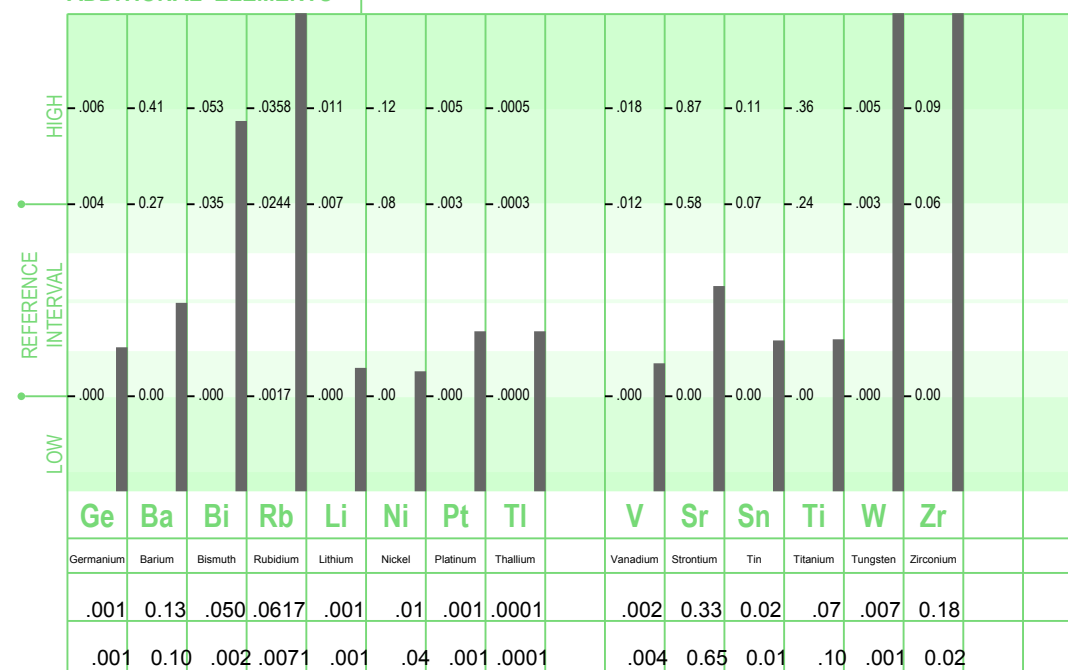
1735966

PROFILE NO.:

2

SAMPLE TYPE:

PUBIC

PATIENT: **LOVEDAY, BRUCE**AGE: **65**SEX: **M**METABOLIC TYPE: **SLOW 4**REQUESTED BY: **KELLY, A**ACCOUNT NO.: **2216**DATE: **11/12/2023****NUTRITIONAL ELEMENTS****TOXIC ELEMENTS****ADDITIONAL ELEMENTS**

" < " : Below Calibration Limit; Value Given Is Calibration Limit

" QNS " : Sample Size Was Inadequate For Analysis.

" N/A " : Currently Not Available

Ideal Levels And Interpretation Have Been Based On Hair Samples Obtained From The Mid-Parietal To The Occipital Region Of The Scalp.

Laboratory Analysis Provided by Trace Elements, Inc.
Dallas, Texas USA an H.H.S. Licensed Clinical Laboratory. No. 45 D0481787

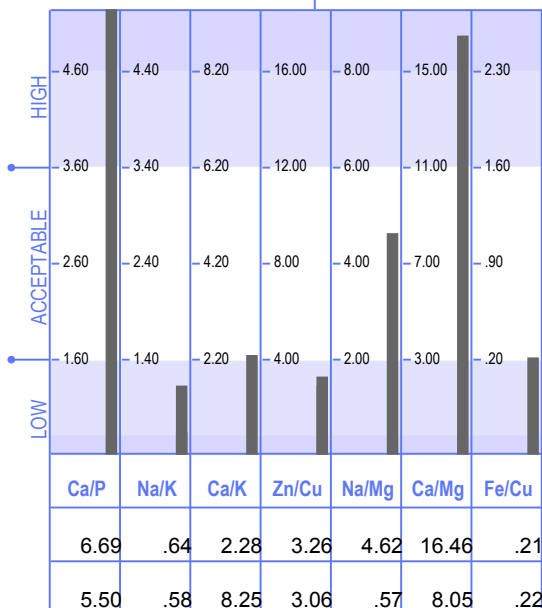
11/12/2023

CURRENT TEST RESULTS

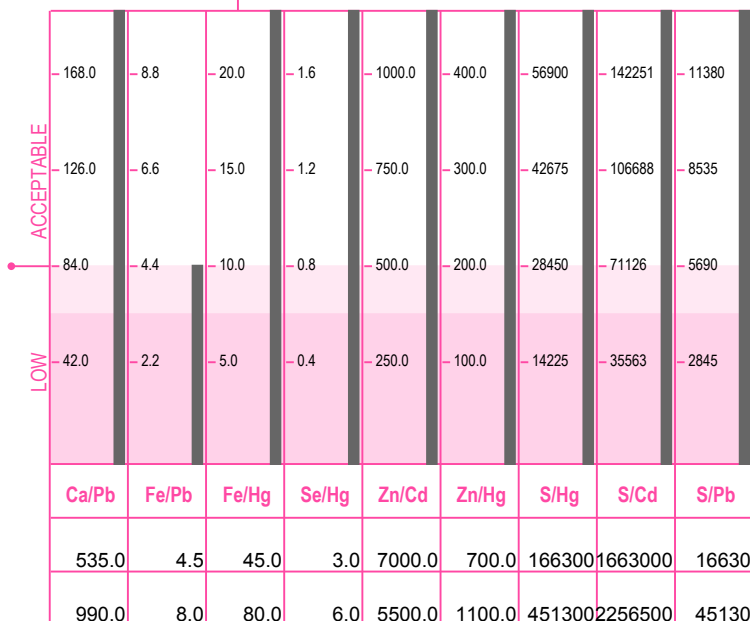
7/02/2023

PREVIOUS TEST RESULTS

SIGNIFICANT RATIOS



TOXIC RATIOS



ADDITIONAL RATIOS

RATIO	CALCULATED VALUE		EXPECTED
	Current	Previous	
Ca/Sr	324.24	152.31	263/1
Cr/V	10.00	10.00	8/1
Cu/Mo	430.00	900.00	356/1
Fe/Co	300.00	133.33	615/1
K/Co	15666.67	2000.00	6350/1
K/Li	47000.00	12000.00	6350/1
Mg/B	17.11	175.71	21/1
S/Cu	773.49	1253.61	2668/1
Se/Tl	600.00	600.00	370/1
Se/Sn	3.00	6.00	3.2/1
Zn/Sn	700.00	1100.00	624/1

LEVELS

All mineral levels are reported in milligrams percent (milligrams per one-hundred grams of hair). One milligram percent (mg%) is equal to ten parts per million (ppm).

NUTRITIONAL ELEMENTS

Extensively studied, the nutrient elements have been well defined and are considered essential for many biological functions in the human body. They play key roles in such metabolic processes as muscular activity, endocrine function, reproduction, skeletal integrity and overall development.

TOXIC ELEMENTS

The toxic elements or "heavy metals" are well-known for their interference upon normal biochemical function. They are commonly found in the environment and therefore are present to some degree, in all biological systems. However, these metals clearly pose a concern for toxicity when accumulation occurs to excess.

ADDITIONAL ELEMENTS

These elements are considered as possibly essential by the human body. Additional studies are being conducted to better define their requirements and amounts needed.

RATIOS

A calculated comparison of two elements to each other is called a ratio. To calculate a ratio value, the first mineral level is divided by the second mineral level.

EXAMPLE: A sodium (Na) test level of 24 mg% divided by a potassium (K) level of 10 mg% equals a Na/K ratio of 2.4 to 1.

SIGNIFICANT RATIOS

If the synergistic relationship (or ratio) between certain minerals in the body is disturbed, studies show that normal biological functions and metabolic activity can be adversely affected. Even at extremely low concentrations, the synergistic and/or antagonistic relationships between minerals still exist, which can indirectly affect metabolism.

TOXIC RATIOS

It is important to note that individuals with elevated toxic levels may not always exhibit clinical symptoms associated with those particular toxic minerals. However, research has shown that toxic minerals can also produce an antagonistic effect on various essential minerals eventually leading to disturbances in their metabolic utilization.

ADDITIONAL RATIOS

These ratios are being reported solely for the purpose of gathering research data. This information will then be used to help the attending health-care professional in evaluating their impact upon health.

REFERENCE INTERVALS

Generally, reference intervals should be considered as guidelines for comparison with the reported test values. These reference intervals have been statistically established from studying an international population of "healthy" individuals.

Important Note: The reference intervals should not be considered as absolute limits for determining deficiency, toxicity or acceptance.

THE FOLLOWING RECOMMENDATIONS SHOULD BE TAKEN ONLY WITH MEALS IN ORDER TO INCREASE ABSORPTION AND TO AVOID STOMACH DISCOMFORT. IF DISCOMFORT OCCURS SUPPLEMENTATION CAN BE REDUCED TO A MINIMUM THEN INCREASED GRADUALLY.

RECOMMENDATION	AM	NOON	PM
PARA TONE	1	0	1
ADEN COMPLEX	1	1	1
MAGNESIUM PLUS	1	1	1
ACTIVATED B6 PLUS (Vitamin B6)	1	0	1
GLUCO CHROME (Chromium)	2	2	2
IRON PLUS	0	0	1
ZINC PLUS	1	1	2
MANGANESE PLUS	1	1	2
VITAMIN C PLUS	1	1	2
DIGESTIVE-ZYME	1	1	1

THESE RECOMMENDATIONS ARE BASED UPON THE MINERAL LEVELS FOUND IN THE HAIR TISSUE MINERAL ANALYSIS AND MAY AT TIMES NEED MODIFICATION AS PER SPECIFIC NEED AND/OR INDIVIDUAL CIRCUMSTANCES. THESE RECOMMENDATIONS ARE PROVIDED ONLY AS A PROFESSIONAL GUIDE TO SUPPLEMENTAL ASSISTANCE.

THESE RECOMMENDATIONS MAY NOT INCLUDE MINERALS WHICH APPEAR BELOW NORMAL OR IN TURN MAY RECOMMEND MINERALS WHICH APPEAR ABOVE NORMAL ON THE HTMA GRAPH. THIS IS NOT AN OVERSIGHT. SPECIFIC MINERALS WILL INTERACT WITH OTHER MINERALS TO RAISE OR LOWER TISSUE MINERAL LEVELS, AND THIS PROGRAM IS DESIGNED TO BALANCE THE PATIENT'S MINERAL LEVELS THROUGH THESE INTERACTIONS.

THESE RECOMMENDATIONS SHOULD NOT BE TAKEN OVER A PROLONGED PERIOD OF TIME WITHOUT OBTAINING A RE-EVALUATION. THIS IS NECESSARY IN ORDER TO MONITOR PROGRESS AND MAKE THE NECESSARY CHANGES IN THE NUTRITIONAL RECOMMENDATIONS AS REQUIRED.

SPECIAL NOTE: NUTRITIONAL SUPPLEMENTS DO NOT TAKE THE PLACE OF A GOOD DIET. THEY ARE BUT AN ADDITIONAL SOURCE OF NUTRIENTS, AND THEREFORE, MUST NOT BE SUBSTITUTED FOR A BALANCED DIET.

INTRODUCTION

THE FOLLOWING REPORT SHOULD NOT BE CONSIDERED AS DIAGNOSTIC, BUT RATHER AS A SCREENING TOOL THAT PROVIDES AN ADDITIONAL SOURCE OF INFORMATION. THIS REPORT SHOULD ONLY BE USED IN CONJUNCTION WITH OTHER LABORATORY TESTS, HISTORY, PHYSICAL EXAMINATION AND THE CLINICAL EXPERTISE OF THE ATTENDING HEALTHCARE PROFESSIONAL.

TEST RESULTS WERE OBTAINED BY A LICENSED* CLINICAL LABORATORY ADHERING TO TESTING PROCEDURES THAT COMPLY WITH GOVERNMENTAL PROTOCOL AND STANDARDS ESTABLISHED BY TRACE ELEMENTS, INC., U.S.A. THE FOLLOWING INTERPRETATION IS BASED UPON INTERNATIONAL DATA AND DEFINED BY EXTENSIVE CLINICAL RESEARCH CONDUCTED BY DAVID L. WATTS, PH.D.

This analysis including levels, ratios, ranges and recommendations are based upon the sample and sampling technique meeting the following requirements:

- ** Sample obtained from the mid-parietal to the occipital region of scalp.
- ** Sample is proximal portion of hair length (first 1" to 2" of hair closest to scalp.
- ** Sufficient sample weight (minimum of 150 mg.)
- ** High grade stainless steel sampling scissors.
- ** Untreated virgin hair (no recent perms, bleaching, or coloring agents).

* Clinical Laboratory License

U.S. Department of Health and Human Services, State of Texas Department of Health,
Clinical Laboratories Improvement Act, 1988 No. 45-D0481787

** IMPORTANT NOTE **

Pubic Specimen: Although pubic hair can be accurately analyzed for mineral content, it should be emphasized that the following interpretation and recommendations are based upon reference ranges obtained from properly collected scalp hair samples. For this reason, some statements and recommendations found in this interpretive report may not accurately reflect the actual metabolic status and nutritional requirements for this individual. Therefore, care should be taken in applying this information directly to the patient.

Pubic hair is only recommended for the confirmation of high levels of toxic elements previously found in scalp hair.

METABOLIC TYPE

SLOW METABOLISM, TYPE #4

The patient, classified as a SLOW METABOLIZER TYPE #4, is para-sympathetic dominant with elevated adrenal and thyroid activity. This pattern is usually acute in nature and is a result of an acute stress reaction (physical or emotional).

Endocrine replacement therapy, such as; thyroid, insulin, adrenal steroids (anti-inflammatory drugs), etc., as well as endocrine antagonists and in extreme cases of surgical removal of a gland, can affect the tissue mineral pattern. In these cases, the above reported indications of endocrine status should not be considered as representative of endocrine activity. Additional clinical tests and patient history should be taken into consideration.

There are several sub-classifications of each metabolic type, ranging from Type #1 to Type #4. This is taken into consideration on their supplement and dietary recommendations. The extent to which the patient is manifesting these metabolic characteristics depends upon the degree and chronicity of the mineral patterns.

RE-EVALUATION

A re-evaluation is suggested at two months from the beginning of implementation of the supplement program. The metabolic subtypes, such as the Type #4 may result from an acute condition, and therefore, may show a metabolic response more

quickly than the Type #1.

TRENDS

The following trends may or may not be manifesting in the patient at this time. Each trend that is listed is a result of research including statistical and clinical observations. This trend analysis is advanced merely for the consideration of the health professional, and should not be considered an assessment of a medical condition. Further investigation may be indicated based upon your own clinical evaluation.

*** SPECIAL NOTE ***

It must be emphasized that the following are only trends of potential health conditions. Realistically, the probability for each trend's occurrence is based upon the degree and duration of the specific mineral imbalance. Since this analysis is not capable of determining either the previous degree of imbalance and/or previous duration, the trend analysis should only be used as an indicator to the health-care professional of potential manifestation's, particularly if the biochemical imbalance continues.

TENDENCY	1	2	3	4	5	6	7	8
ALLERGIES								
ARTERIOSCLEROSIS								
ARTHRITIS-OSTEO								
CALCULUS								
COLITIS								
DEPRESSION								
DIABETES								
DIVERTICULOSIS								
DYSLEXIA								
HYPERTENSION								
INSOMNIA								
JOINT STIFFNESS								
NEUROMUSCULAR DYSFUNCTION								

COMMENTS

ALLERGIES AND COPPER:

The mineral copper is a constituent of the enzyme histaminase and the protein ceruloplasmin, both of which have the ability to destroy histamine. Zinc is required for the storage of histamine. Since the patient's zinc level is low to copper, or the tissue copper level is elevated, a low serum histamine may be present. This may result in histamine depletion if chronic. Low histamine levels have been found in the serum of patients who suffer from allergies to foods and inhalants.

ARTERIOSCLEROSIS AND MAGNESIUM DEFICIENCY:

Studies have found that dietary magnesium intake is frequently found to be low in individuals with blood sugar disturbances and arteriosclerosis compared to control groups not having these conditions.

Magnesium deficiency relative to calcium indicates poor calcium metabolism. This patient's pattern indicates that a tendency exists for calcium deposition into the soft tissues including the arteries.

OSTEOARTHRITIS:

High calcium to magnesium indicates a trend toward soft tissue deposition of calcium. This can result in hypertrophic osteoarthritic development.

CALCULUS FORMATION:

When the calcium to magnesium ratio is high, a relative magnesium deficiency exists. Magnesium is important for normal calcium metabolism. A magnesium deficiency relative to calcium may cause calcium to precipitate out of solution contributing to calcium deposition in the urinary tract and gall bladder. Vitamin B-6 along with magnesium aids in preventing calculus formation as a result of calcinosis.

COLITIS:

Calcium and magnesium are necessary in a proper balance for normal muscular function. An elevation of calcium to magnesium is associated with a colitis-like condition. If calcium is elevated relative to magnesium, it may contribute to muscular tension.

DEPRESSION, SODIUM AND POTASSIUM:

A low tissue sodium to potassium ratio is related to many emotional changes including depression. A low sodium to potassium ratio may also be related to phobias, withdrawal, repression and indecision.

DIABETES:

Calcium is a factor in the release of insulin. An elevation of calcium relative to magnesium along with low chromium may indicate a diabetic trend. Chromium is a constituent of a metalloenzyme, which acts as a cellular receptor to insulin. As chromium is on the low side of normal, excess insulin secretion may be necessary to compensate for a lack of sufficient cellular receptors. Abnormally low cellular receptors to insulin are a common finding in adult onset diabetes.

A glucose tolerance test may be performed on this patient. However, abnormal blood sugar changes may or may not be detected, depending upon the chronicity of this pattern.

Serum insulin levels should also be checked. If elevated, a pre-existing diabetic condition may exist.

Increased serum insulin levels may also be a good indicator of a trend toward atherosclerosis, which often accompanies adult onset diabetes. Other indications that may be present are low serum magnesium with high urinary magnesium excretion.

DIVERTICULOSIS:

A disturbance in the normal balance of calcium and magnesium can result in abnormal muscular contraction and relaxation. The present pattern indicates a possible disturbance in intestinal motility, and inflammation. This may be associated with some form of intestinal disturbance, such as, diverticulosis.

DYSLEXIA:

Low sodium to potassium along with a high tissue copper or low zinc to copper ratio have been associated with dyslexia and other learning problems.

GLUCOSE DISORDERS AND CHROMIUM:

Chromium and its co-factors are essential in controlling glucose or blood sugar levels. Chromium influences insulin on the cellular level and helps to stabilize this vital hormone. Chromium supplementation is important for anyone with glucose or insulin instability.

HYPERTENSION (Diastolic):

Excess calcium increases muscular tonicity or contraction, resulting in decreased muscular relaxation. Magnesium is required in adequate quantities for muscular relaxation. A deficiency of magnesium relative to calcium therefore, contributes to increased diastolic pressure due to increased vascular contraction, or a lack of muscular relaxation during diastole. This type of hypertension is usually transient and is exacerbated by stress or any factor that antagonizes magnesium, such as; alcohol, blood sugar fluctuations and diuretics.

RENAL HYPERTENSION:

High blood pressure is often seen when a low sodium to potassium ratio exists. This is especially true when magnesium is low to calcium and is related to renal hypertension.

INSOMNIA:

Two types of insomnia should be distinguished in order to determine effective treatment.

INSOMNIA AND MAGNESIUM:

Insomnia characterized by going to sleep but awakening frequently is associated with an increased magnesium requirement. The person who tosses and turns at night, even though he may be unaware of it, could be suffering from an increased need for magnesium.

JOINT STIFFNESS AND HIGH COPPER:

The mineral copper is antagonistic to vitamin C. This mechanism is related to increased oxidation of ascorbic acid in the presence of excess copper. Vitamin C is necessary for collagen synthesis. This pattern (high HTMA copper), may be related to a relative, subclinical vitamin C deficiency. This could further be related to poor collagen formation, joint instability and loss of normal range of motion.

JOINT STIFFNESS, ELEVATED COPPER AND CALCIUM:

Excess copper increases soft tissue deposition of calcium through a number of endocrine effects. If calcium deposition occurs within the joints, eventually a decrease in joint mobility can ensue.

NEUROMUSCULAR DYSFUNCTION:

Calcium and magnesium are necessary in the proper balance for normal muscular contraction and relaxation. Sodium and potassium are involved in normal nerve conduction. When calcium and magnesium as well as sodium to potassium imbalances exist, neuromuscular dysfunction may be present.

PREMATURE AGING OF THE SKIN AND CALCIUM:

Excess calcium deposition into soft tissue can reduce the normal fluid content of cells. This can then produce dryness, thickening and wrinkling of the skin, which is related to signs of premature aging.

*** BORON ***

The element boron increases the retention of calcium by having an apparent estrogenic effect. At this time, supplementation of boron should not be considered until the biochemical pattern of this patient changes.

DIETARY SUGGESTIONS

The following dietary suggestions are defined by several factors: the individual's metabolic type, mineral levels, and mineral ratios, as well as the nutrient content of each food, including protein, carbohydrate, fat, vitamins, and minerals. Based upon these determinations, it may be suggested that foods be avoided or increased temporarily to aid in the improvement of the patient's chemistry.

GENERAL DIETARY PRINCIPLES FOR THE SLOW METABOLIZER:

A low protein, high carbohydrate, and high-fat diet, in addition to increased consumption of refined sugars and dairy products, have a slowing-down effect on metabolism and energy production.

*** EAT HIGH-PROTEIN FOOD AT EACH MEAL...**Lean protein is recommended and should constitute at least 40% of the total caloric value of each meal. Recommended sources are lean beef, fish, and fowl. Other good sources of protein include bean and grain combinations and eggs. Increased protein intake is necessary in order to increase the metabolic rate and energy production.

*** INCREASE FREQUENCY OF MEALS...**while decreasing the total caloric intake for each meal. This is suggested to sustain the level of nutrients necessary for energy production and decrease blood sugar fluctuations.

*** EAT A MODERATE AMOUNT OF UNREFINED CARBOHYDRATES...**Carbohydrate intake should not exceed 40% of the

total daily caloric intake. Excellent sources of unrefined carbohydrates include whole grain products, legumes, and root vegetables.

* AVOID ALL SUGARS AND REFINED CARBOHYDRATES...This includes white and brown sugar, honey, candy, soda pop, cake, pastries, alcohol, and white bread.

* AVOID HIGH PURINE PROTEIN...Sources of high purine protein include liver, kidney, heart, sardines, and mackerel.

* REDUCE INTAKE OF FATS AND OILS...Fats and oil include fried foods, cream, butter, salad dressings, mayonnaise, etc. Fat intake should be at most 20% of the total daily caloric intake.

* REDUCE OR AVOID MILK AND MILK PRODUCTS...such as cheese, yogurt, cream, etc. These foods should be reduced to no more than once every three to four days.

* REDUCE FRUIT JUICE INTAKE...until the next evaluation. This includes orange juice, apple juice, grape juice, and grapefruit juice. Vegetable juices are acceptable.

* AVOID CALCIUM AND/OR VITAMIN D SUPPLEMENTS

FOOD ALLERGIES:

In some individuals, certain foods can produce a maladaptive or "allergic-like" reaction commonly called "food allergies". Consumption of foods that one is sensitive to can bring about reactions ranging from fatigue or drowsiness to rashes, migraine headaches and arthritic pain.

Sensitivity to foods can develop due to biochemical (nutritional) imbalances, and which can be aggravated by stress, pollution and medications. Nutritional imbalance can further be contributed to by restricting food variety, such as eating only a small group of foods on a daily basis. Often a person will develop a craving for the food they are most sensitive to and may eat the same food or food group more than once a day.

The following section may contain foods that are recommended to be avoided. These foods should be considered as potential "allergy foods" or as foods that may impede a rapid and effective response. Consumption of these foods should be completely avoided for four days. After which, they should not be eaten more frequently than once every three days during course of therapy.

FOOD ALLERGIES RELATED TO COPPER:

Individuals with excessive tissue copper accumulation will often crave foods that are high in copper. The following foods, which are high in copper relative to zinc, should be avoided until the next evaluation:

Mushrooms	Crab
Cod	Lobster
Baker's Yeast	Walnuts
Shrimp (canned)	Brazil Nuts
Chocolate	Liver
Sunflower Seeds	Almonds
Beef Bouillon	Peach (dried)

FOODS HIGH IN NIACIN:

Niacin (vitamin B3) is known to improve circulation, increase the metabolic rate via enzymes requiring B3, as well as help lower cholesterol and excess copper accumulation. The following foods are rich sources of niacin and may be eaten liberally:

Bran Flakes	Fish (broiled)
Beef	Tuna
Chicken (light)	Peas

METHIONINE RICH FOODS:

The following foods are a rich source of the essential amino acid methionine, which supplies sulfur to the cells for the activation of enzymes, and energy metabolism. Sulfur is also involved in the detoxification process. Toxic substances are combined with sulfur, converted to a nontoxic form, and then excreted. The following foods may be consumed liberally during the course of therapy:

Bass
Trout
Cod
Turkey
Flounder
Round Steak

Mackerel
Short Ribs
Perch
Sirloin
Pumpkin Seeds

The above list of foods is also high in glutamic and aspartic acid. These amino acid proteins help to improve tissue alkalinity.

SPECIAL NOTE:

This analysis will list only a limited number of dietary foods to avoid or to increase in the diet. For those foods not specifically mentioned in this section, continued consumption on a moderate basis may be considered appropriate unless recommended otherwise.

NO PART OF THIS INTERPRETIVE REPORT MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR ANY INFORMATION STORAGE OR RETRIEVAL SYSTEM WITHOUT PERMISSION IN WRITING FROM TRACE ELEMENTS, INC., U.S.A.

InterClinical Laboratories Pty Limited

Unit 6/10 Bradford Street, Alexandria, N.S.W. 2015, Sydney, Australia

Ph: (02) 9693-2888 Fax: (02) 9693-1888

Email: lab@interclinical.com.au

Authorized Representative for Australia and New Zealand