

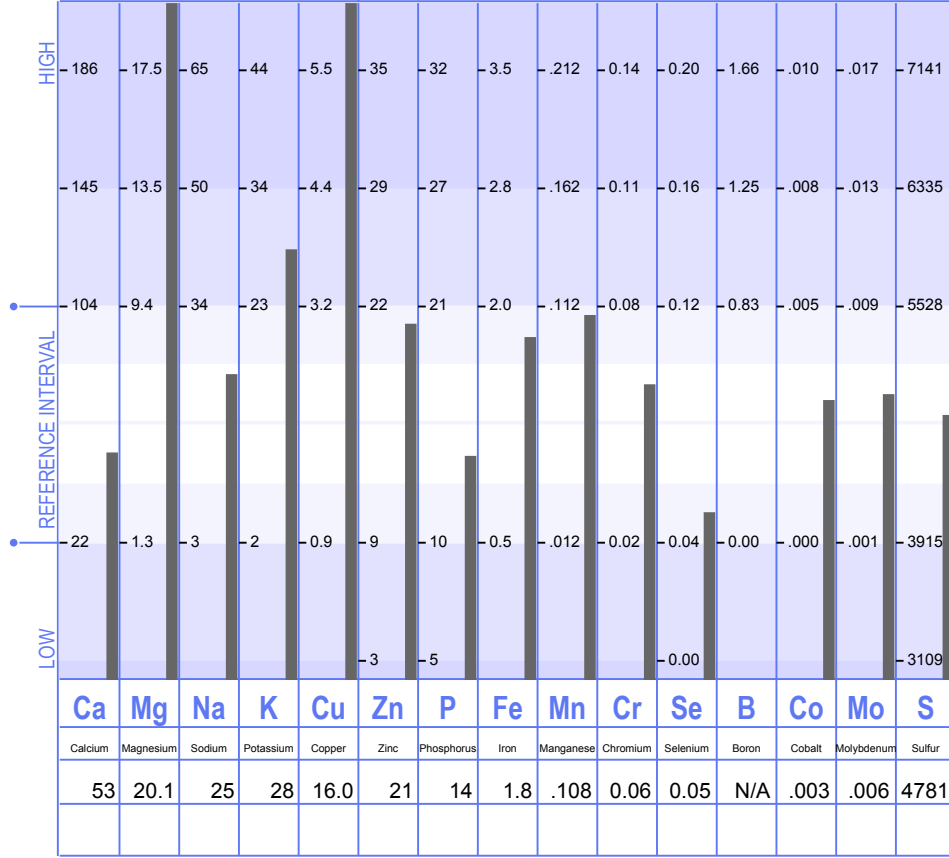


InterClinical Laboratories Pty Limited
 ABN 89 076 386 475
 PO Box 6474, Alexandria NSW 2015 Australia
 Ph: 02 9693 2888 Fax: 02 9693 1888
 Email: lab@interclinical.com.au

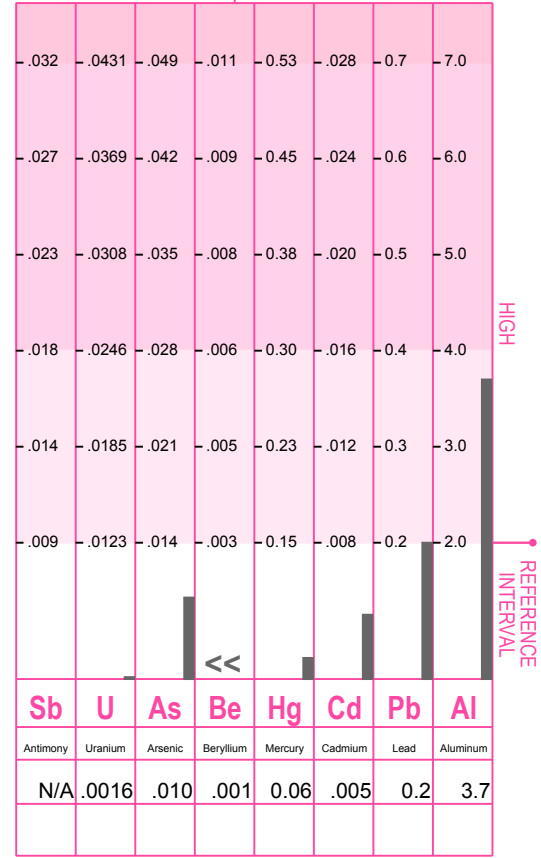
LABORATORY NO.: XXXXX	
PROFILE NO.: 2	SAMPLE TYPE: SCALP

PATIENT: XXXXX	AGE: 5	SEX: M	METABOLIC TYPE: SLOW 3
REQUESTED BY: XXXXX	ACCOUNT NO.: 2216	DATE: 2021	

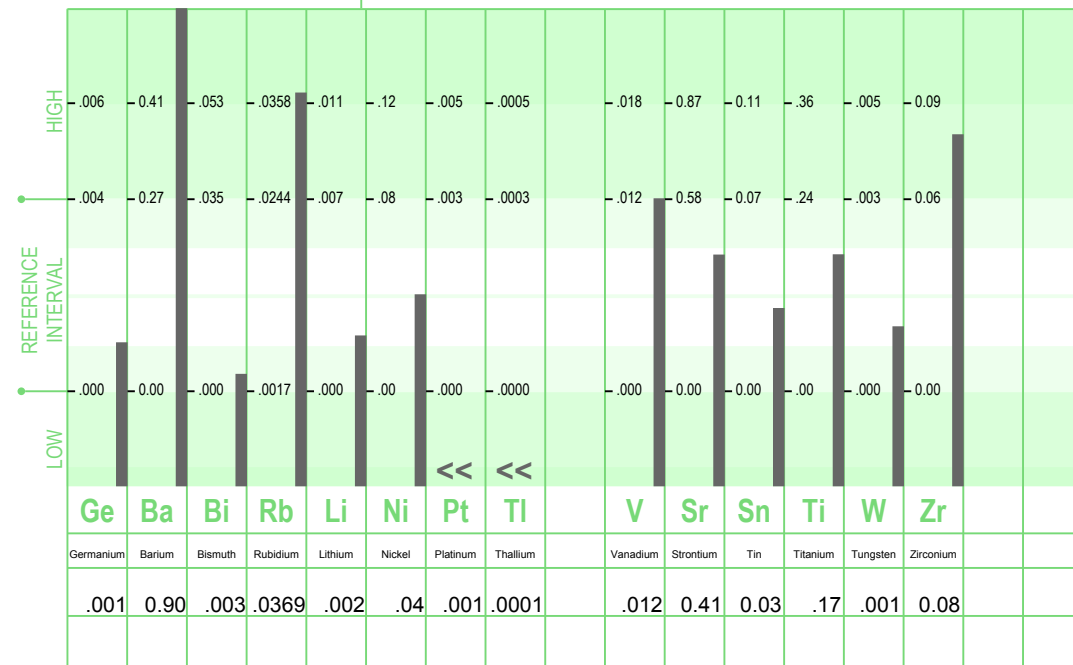
NUTRITIONAL ELEMENTS



TOXIC ELEMENTS



ADDITIONAL ELEMENTS



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

"QNS": Sample Size Was Inadequate For Analysis.

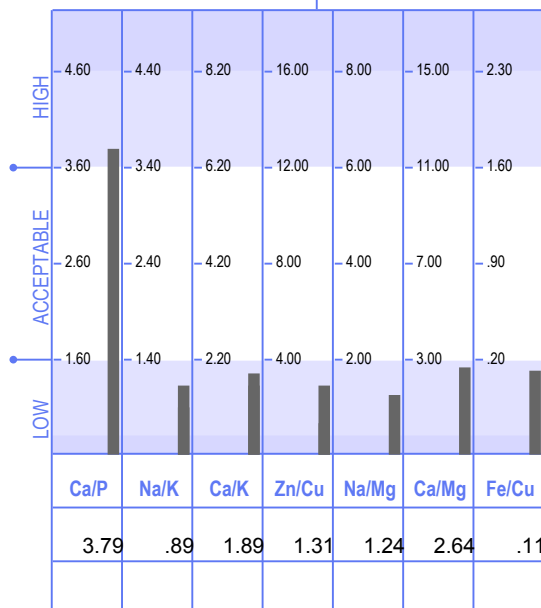
"N/A": Currently Not Available

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

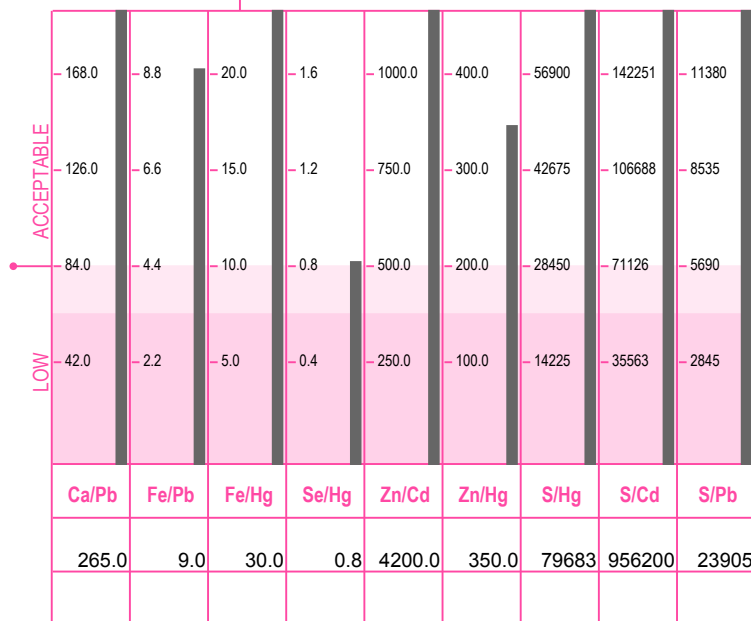
Laboratory Analysis Provided by Trace Elements, Inc. Dallas, Texas USA an H.H.S. Licensed Clinical Laboratory. No. 45 D0481787

2021
 CURRENT TEST RESULTS
 PREVIOUS TEST RESULTS

SIGNIFICANT RATIOS



TOXIC RATIOS



ADDITIONAL RATIOS

RATIO	CALCULATED VALUE		EXPECTED
	Current	Previous	
Ca/Sr	129.27		263/1
Cr/V	5.00		8/1
Cu/Mo	2666.67		356/1
Fe/Co	600.00		615/1
K/Co	9333.33		6350/1
K/Li	14000.00		6350/1
Mg/B	N/A		21/1
S/Cu	298.81		2668/1
Se/Tl	500.00		370/1
Se/Sn	1.67		3.2/1
Zn/Sn	700.00		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
ACTIVATED B6 PLUS (Vitamin B6)	1	0	1
ZINC PLUS	1	1	1
MOLY ZINC	1	0	1
MANGANESE PLUS	1	1	1
VITAMIN C PLUS	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

METABOLIC TYPE

SLOW METABOLISM, TYPE #3

The patient's tissue mineral pattern indicates SLOW METABOLISM TYPE #3 characterized as being para-sympathetic dominant with increased thyroid activity in conjunction with adrenal insufficiency. This may result in mood swings as well as fluctuations in energy levels.

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 #3 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								
ANEMIA								
DEPRESSION								
DERMATITIS								
DYSLEXIA								
HEADACHES								
INSOMNIA								
NEUROMUSCULAR DYSFUNCTION								
PERIODONTAL PROBLEMS								

COMMENTS

ALLERGIES AND COPPER:

The mineral copper is a constituent of the enzyme histaminase and the protein ceruloplasm, 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.

ANEMIA AND EXCESS COPPER RELATIVE TO IRON:

Copper in excess amounts can contribute to iron deficiency anemia, by interfering with iron absorption and decreasing the metabolic activity of iron. A low iron to copper ratio indicates a trend toward anemia.

BRUISING AND HIGH TISSUE COPPER:

The mineral copper increases the oxidation of vitamin C and may therefore contribute to a relative vitamin C deficiency, or at the very least, increase its requirement. A lack of vitamin C is associated with increased capillary fragility and bruising.

DEPRESSION AND HIGH COPPER:

High tissue copper has been associated with an increased incidence of depression, especially in women, often occurring near their menstrual period. The causative role of excess copper in depression may be due to its producing neurotransmitter imbalances in the brain, or its interfering with other nutrient minerals such as iron, zinc and manganese.

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.

DERMATOSIS AND COPPER:

Copper is known to antagonize the metabolic activity of zinc as well as decrease its absorption. This may be a contributing factor to copper-induced dermatitis. Copper toxicity often produces skin rashes that are characterized by red itchy areas occurring on the face, neck, and lower back, on the thighs, and behind the knees.

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.

HEADACHES AND HIGH TISSUE COPPER:

Elevated copper has been implicated in producing headaches, usually occurring in the frontal region. Copper water pipes may contribute to high tissue copper levels. The patient's water may be sent for analysis to determine if it is a source of copper contamination.

INSOMNIA:

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

INSOMNIA AND CALCIUM:

Insomnia characterized by an inability to fall asleep is most often associated with an increased need for calcium. If calcium is not recommended on the patient's program, calcium may be given until symptoms have improved.

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.

PERIODONTAL PROBLEMS AND ELEVATED COPPER:

Excess copper by contributing to the rapid oxidation of vitamin C can contribute to swollen and bleeding gums.

NOTE:

The patient's test shows a markedly elevated copper level. Copper contamination can occur from frequently swimming in pools or spas if copper sulfate is used as an algicide. If the patient swims more than twice per week, we suggest that you send fingernail or toenail tissue for testing. This will help indicate the extent of copper toxicity within the body. You may also test the serum for elevated copper or ceruloplasmin.

TOXIC METALS

ALUMINUM (Al):

As aluminum is the third most abundant element in nature, the body is continually exposed to this potentially toxic element. Once the aluminum exposure exceeds the body's own natural ability to eliminate the compound, it will begin to accumulate internally. Aluminum will accumulate in the lungs, brain, liver and the thyroid gland. When in excess, aluminum will have an adverse effect upon metabolism, often being associated with memory loss, confusion and depression. Additional symptoms of aluminum burden may include: headaches, fatigue, numbness, constipation and dry skin.

Since aluminum is omnipresent in soils and waters, virtually all foods contain measurable amounts of natural aluminum. However, a much larger amount of aluminum compounds are typically ingested in the form of intentional additives, such as; preservatives, coloring agents, leavening agents, etc. Other sources include processed cheeses, spices, pickles and baked goods.

SOME ADDITIONAL SOURCES OF ALUMINUM:

Antacids (most)	Treated Water
Salt (some)	Baking Powder (some)
Aluminum Cookware	Antiperspirants (some)
Buffered Aspirin (some)	Aluminum Cans
White Flour (some)	Vaccines (some)

AVOID:

- * Antacids containing aluminum as hydroxide. This is a major source of ingested aluminum.
- * Cooking acidic foods in aluminum cookware.
- * Inhaling antiperspirant spray, especially those containing aluminum chlorohydrate.

ADDITIONAL TEST(S):

- * 24 Hour Urinary Aluminum
- * Blood Aluminum
- * Serum Aluminum

POSSIBLE HERBAL SOURCES OF ALUMINUM (Al):

Some herbs contain a significant amount of aluminum and therefore may be a source of {age} high level. For the time being, the following herbs should be discontinued if they are being taken.

Peppermint	Black Cohosh
Goldenseal	Chickweed
Comfrey	Licorice
Alfalfa	Valerian Root
Chamomile	

TOXIC METAL RETENTION AND NUTRITIONAL STATUS:

Every individual is constantly being exposed to sources of heavy metals. However, the main factor contributing to the absorption and retention of these metals in the body, is influenced by one's own nutritional status. For instance, a lack of nutrients that will combat the accumulation of lead, will then allow tissue lead level's to rise. This accumulation can occur even if lead exposure is minimal. Improving your nutritional status can help in reducing toxic metal burden as well as reducing the adverse effects that toxic metal accumulation can produce in the body.

IMPORTANT NOTE ON TOXIC METAL ELIMINATION:

As toxic metals are mobilized from storage tissues for removal from the body, the patient may experience an exacerbation of his/her present symptoms or new symptoms associated with a particular mineral. If this occurs, or if the symptoms become too uncomfortable have the patient discontinue supplementation for three days, during which symptoms should be relieved. Have the patient then resume the program at one-third the recommended dosage, usually the PM portion, then gradually build up to twice per day and back to the full program. This may be done over a one to two-week period. If symptoms again arise, have the patient continue on only the PM portion for one week before increasing.

NOTE:

At this time, further confirmation of toxic metal exposure using a blood test may or may not reveal an elevated level. This is due to the protective response of the body, in which following a toxic metal exposure, the element is sequestered from the blood and stored in various other tissues. Therefore, if the exposure is not ongoing or chronic, elevated blood levels may not be present.

DIETARY SUGGESTIONS

The following dietary suggestions are defined by several factors: the individual's metabolic type, mineral levels, 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 upon metabolism and energy production.

* EAT A HIGH PROTEIN FOOD AT EACH MEAL...Lean protein is recommended and which 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 in order 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 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 not exceed 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.

FOODS THAT MAY IMPEDE ADRENAL FUNCTION:

The following foods should be reduced or completely avoided until the next evaluation, or until notified otherwise by the attending doctor:

Almonds	Bass
Cashews	Garbanzo Beans
Wild Rice	Brazil Nuts
Tofu	Clams (raw)
Soybean Flour	Cocoa Powder
Baker's Yeast	Walnuts
Pecans	Peanuts
Hazelnuts	Chestnuts
Tortilla Roll	Spinach
Molasses	Figs (dried)
Torula Yeast	

FOODS 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:

Chocolate	Liver
Crab	Walnuts

Herring
 Haddock
 Pecans
 Almonds
 Sesame Seeds
 Bakers Yeast
 Mushrooms
 Avocado

Lobster
 Bran Flakes
 Peanut Butter
 Shrimp
 Trout
 Brazil Nuts
 Sunflower Seeds
 Grapes

REACTIONS ASSOCIATED WITH FOOD ALLERGIES

Excess intake of high copper foods has been associated with several reactions, both physical and emotional. Physical reactions may include frontal headaches, skin rashes, joint stiffness, constipation, insomnia causing morning fatigue, bloating, water retention and cold sensitivity. Emotional reactions may include depression, crying spells, fearfulness, anxiety, irritability, anger, aggressive behavior and withdrawal.

TISSUE CATABOLISM AND LOW CALCIUM TO POTASSIUM:

Low calcium-to-potassium and low sodium-to-potassium is frequently indicative of excessive tissue protein breakdown (catabolism), which may result in a negative protein (nitrogen) balance. Complex carbohydrates are known to spare protein, and in conjunction with dietary fats, the sparing effects of carbohydrates are further enhanced. Due to the current metabolic profile, the previous carbohydrate, fat and protein intake suggestions found in the "GENERAL DIETARY GUIDELINES" should not be followed at this time. Temporarily, carbohydrate intake should be increased to approximately 50%, fats approximately 25% and proteins 25% of the daily caloric intake.

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
 Beef
 Chicken (light)

Fish (broiled)
 Tuna
 Peas

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