



LABORATORY NO.:

XXXXXXX

PROFILE NO.: 2

SAMPLE TYPE: SCALP

PATIENT: SUSIE SAMPLE (AUS)

AGE: 56

SEX: F

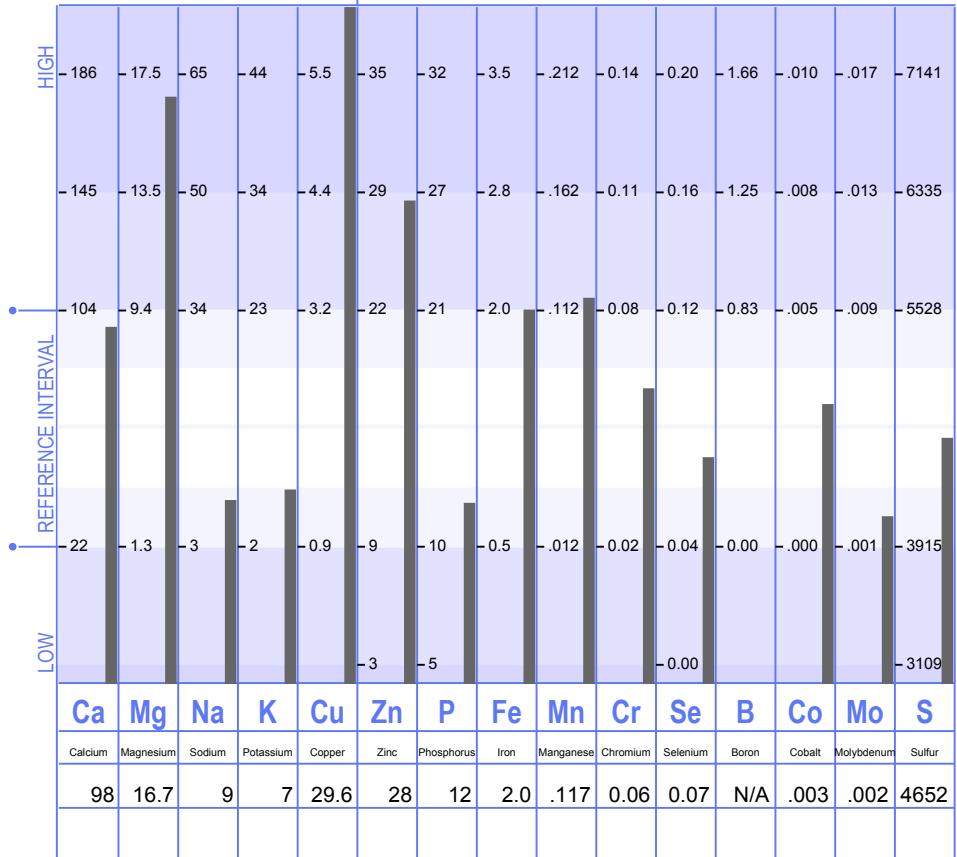
METABOLIC TYPE: SLOW 1

REQUESTED BY: INTERCLINICAL

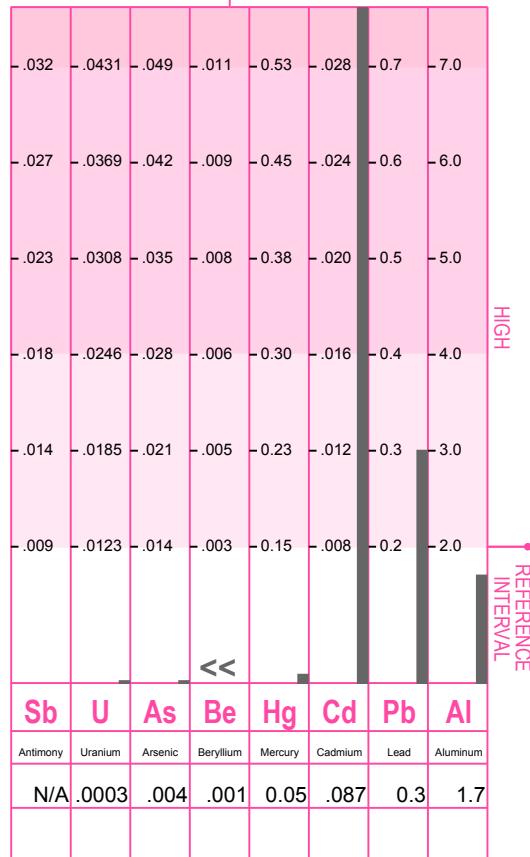
ACCOUNT NO.: 2216

DATE: 1/01/2021

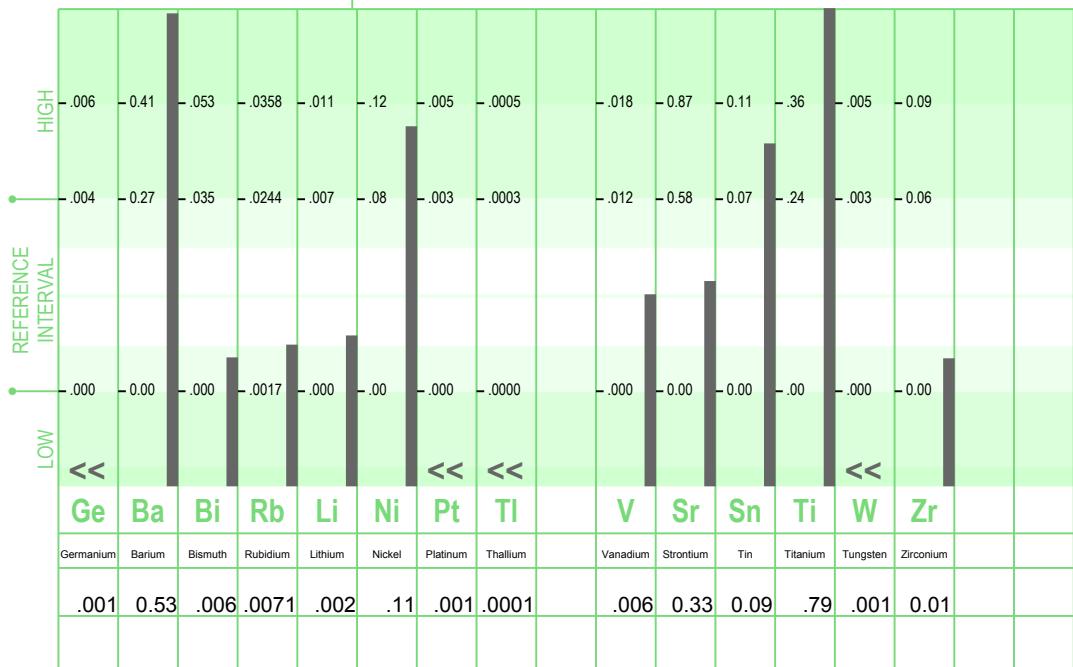
NUTRITIONAL ELEMENTS



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.

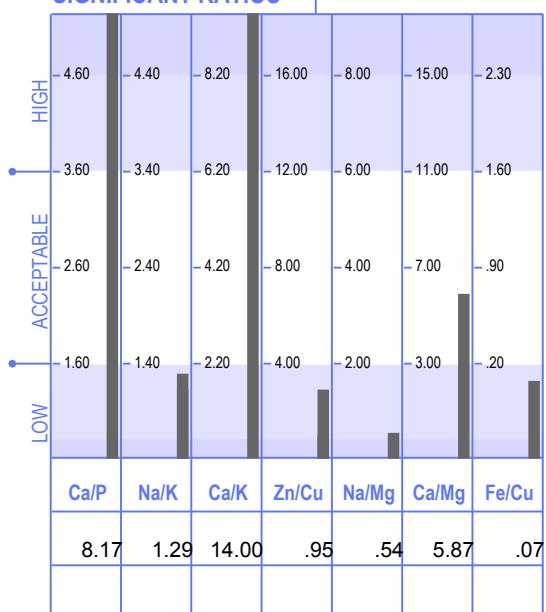
Laboratory Analysis Provided by Trace Elements, Inc.
Dallas, Texas USA an H.H.S. Licensed Clinical Laboratory, No. 45 D0481787

01/01/2021

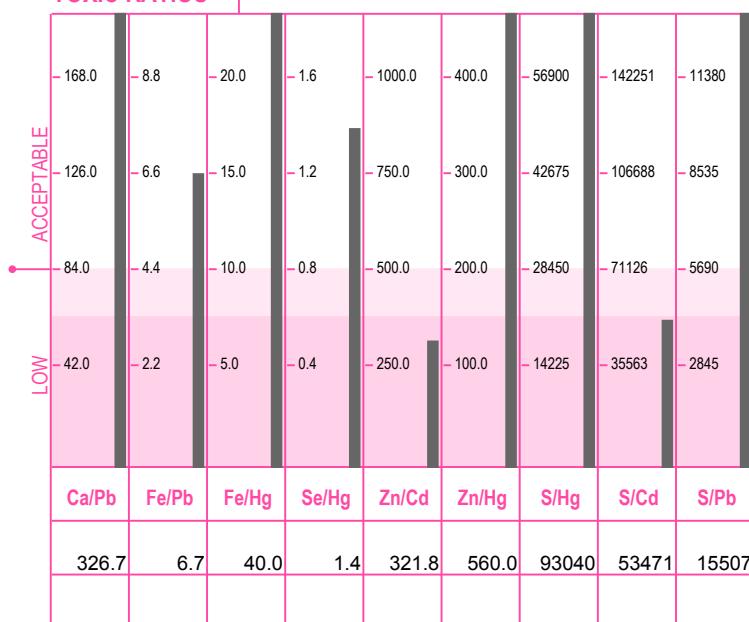
CURRENT TEST RESULTS

PREVIOUS TEST RESULTS

SIGNIFICANT RATIOS



TOXIC RATIOS



ADDITIONAL RATIOS

RATIO	CALCULATED VALUE	EXPECTED
	Current	Previous
Ca/Sr	296.97	263/1
Cr/V	10.00	8/1
Cu/Mo	14800.00	356/1
Fe/Co	666.67	615/1
K/Co	2333.33	6350/1
K/Li	3500.00	6350/1
Mg/B	N/A	21/1
S/Cu	157.16	2668/1
Se/Tl	700.00	370/1
Se/Sn	.78	3.2/1
Zn/Sn	311.11	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-PACK VEGAN	2	1	2
ADEN COMPLEX	2	2	2
ACTIVATED B6 PLUS (Vitamin B6)	1	0	1
ZINC PLUS	2	1	2
Molyzinc	1	1	1
MANGANESE PLUS	1	1	2
VITAMIN C PLUS	1	1	2
HCL SUPPORT	2	2	2

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 #1

This patient is classified as a SLOW METABOLIZER TYPE # 1. Generally speaking, the Slow Metabolizer is experiencing the following endocrine and CNS activity. However, in those cases involving 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, tissue mineral patterns can be significantly affected. In these cases, the following 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.

Para-Sympathetic Nervous System Dominance	Parathyroid Activity Increased
Tissue Alkalinity	Thyroid Activity Decreased
Pancreatic Activity Increased	Hypochlorhydria
Adrenal Medullary Insufficiency	

Physical Characteristics May Include:

Fatigue	Orthostatic Hypotension
Low Body Temperature	Pear-Shaped Body Structure
Low Blood Pressure	Cold Extremities

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

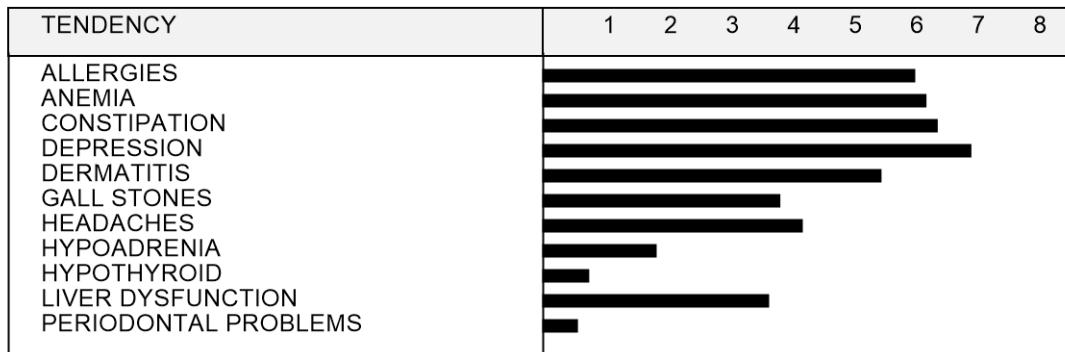
A re-evaluation is suggested at three months from the beginning of implementation of the TEI supplement program. However, if major symptomatic changes occur (other than from toxic metal removal), a retest can be submitted sooner.

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.

**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.

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.

CHOLESTEROL AND CADMIUM:

Excessive cadmium accumulation has been associated with increased serum cholesterol. This may be due to cadmium interfering with other nutrient minerals such as zinc, manganese, and copper.

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.

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.

HYPOADRENIA:

Low tissue sodium and potassium relative to calcium and magnesium is associated with adrenal insufficiency. This may result in low blood pressure, postural hypotension, and fatigue.

HYPOTHYROID:

High calcium relative to potassium indicates a tendency toward a low thyroid function. It has been found that an elevated TSH, even when circulating T-3 and T-4 are normal, is an early indication of hypothyroidism.

HYPOTHYROIDISM AND COPPER:

The mineral copper appears to have a suppressing effect upon the thyroid gland. Excess copper can cause a potassium loss and elevation of tissue calcium.

LIVER DYSFUNCTION:

High tissue copper levels are associated with decreased liver function. Copper is stored in the liver and eliminated via the gall bladder. Excessive accumulation of copper or its removal contributes to liver and gall bladder sluggishness. This can result in constipation and biliary stone formation due to incomplete emptying of the gall bladder.

PERIODONTAL PROBLEMS AND ELEVATED COPPER:

Copper is associated with the hormone estrogen. Studies have reported that shifts in hormonal levels can predispose women to problems ranging from bacterial overgrowth contributing to swollen gums and plaque formation.

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

CADMIUM (Cd):

Cadmium is a toxic metal that interferes with the absorption and function of several minerals such as; zinc, iron, copper and manganese. Cadmium has an affinity to accumulate mainly in the kidneys, but will also deposit in the liver and bones if

excessive. Some sources of cadmium are:

Tobacco
Burning Plastics
Superphosphate Fertilizers
Electronics Industry

Zinc Smelters
Galvanized Water Pipes
Auto Exhaust

METABOLIC DYSFUNCTIONS AND CADMIUM:

Chronic or long term exposure to cadmium has been related to kidney disturbance, abnormal bone changes, emphysema, pneumonitis, liver disturbance, anemia and discoloration or yellowing of the dental enamel. These abnormalities may occur only after several years of exposure to cadmium.

ADDITIONAL TEST(S):

- * Pubic Hair Cadmium... to confirm endogenous accumulation and/or exogenous contamination.
- * 24 Hour Urine Cadmium

IMPORTANT NOTE:

ELIMINATION OF CADMIUM FROM THE BODY CAN OFTEN PRODUCE SYMPTOMS THAT ARE SIMILAR TO FLU SYMPTOMS.

LEAD (Pb):

Although the World Health Organization and governments around the world recognize the dangers of lead and are beginning to enact safety regulations regarding lead exposure, it is still one of the most common environmental pollutants. It is antagonistic to nearly every nutrient mineral, and contributes directly or indirectly, to many mineral excesses or deficiencies. Early signs of lead accumulation may be vague and include symptoms such as fatigue, anemia, ataxia and poor coordination. Elevated levels of lead can contribute to suppression of the immune system, nephrosis, autism, cancer, stillbirths, dental decay, arthritis and hypertension. The following are some sources of lead:

Leaded Gasoline
Leaded Paint
Lead Crystal
Hair Coloring (some)
Battery Manufacturing
Firing Ranges - Ammunition
Rubber Product Manufact.

Lead Water Mains and Joints
Cosmetics (some)
Printing Industry
Wines (some)
Radiator Repair
Solid Waste Incinerators
Stained Glass

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.

CONTRAINdications

It is suggested that additional supplementation and/or intake of the following nutrients and food substitutes (if any) should be avoided by the patient until re-evaluation.

* THYMUS *

The thymus has an opposing effect on the adrenal glands. As long as an adrenal insufficiency is indicated, thymus supplementation should be avoided.

* COD LIVER OIL *

Cod liver oil will contribute to an adverse reduction in the metabolic rate, which can result in increased fatigue and depression. It is suggested that cod liver oil be avoided until the biochemical pattern improves.

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. Afterwhich, they should not be eaten more frequently than once every three days during course of therapy.

FOODS THAT MAY AFFECT THYROID ACTIVITY:

The following list of foods belongs to a family of foods that are known to decrease thyroid activity when eaten in appreciable quantities. If an under-active condition is present, excessive consumption can contribute to symptoms associated with hypothyroidism, such as; fatigue, cold sensitivity, depression, weight gain, dry skin and hair, and constipation.

Intake of the following foods should be reduced considerably until the next evaluation:

Cabbage	Kale
Rutabagas	White Turnips
Cole Slaw	Fluorides
Sauerkraut	Horseradish
Soybeans	Chlorinated Water
Mustard	Walnuts

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	

AVOID DIETARY FATS AND OILS UNLESS NOTIFIED OTHERWISE BY ATTENDING DOCTOR:

The handling of fats is difficult during a reduced metabolic state, and can contribute to a further reduction in the metabolic rate. It is suggested that all sources of high dietary fat and oil be avoided until the next evaluation.

Salad Dressings	Cheese (most)
Cream	Butter
Hazelnuts	Walnuts
Margarine	Pork
Bockwurst	Milk
Salami	Peanut Butter
Bologna	Pork Links
Corn Chips	Almonds
Bacon	Knockwurst
Duck	Goose
Avocado	Braunschweiger
Cocoa Powder	Peanuts

Sardines (canned)
Avocado Oil
Coconut Oil

Tuna (canned in oil)
Liverwurst

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	Lobster
Haddock	Bran Flakes
Pecans	Peanut Butter
Almonds	Shrimp
Sesame Seeds	Trout
Bakers Yeast	Brazil Nuts
Mushrooms	Sunflower Seeds
Avocado	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.

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

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.

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DOCTOR REPORT

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Authorized Representative for Australia and New Zealand