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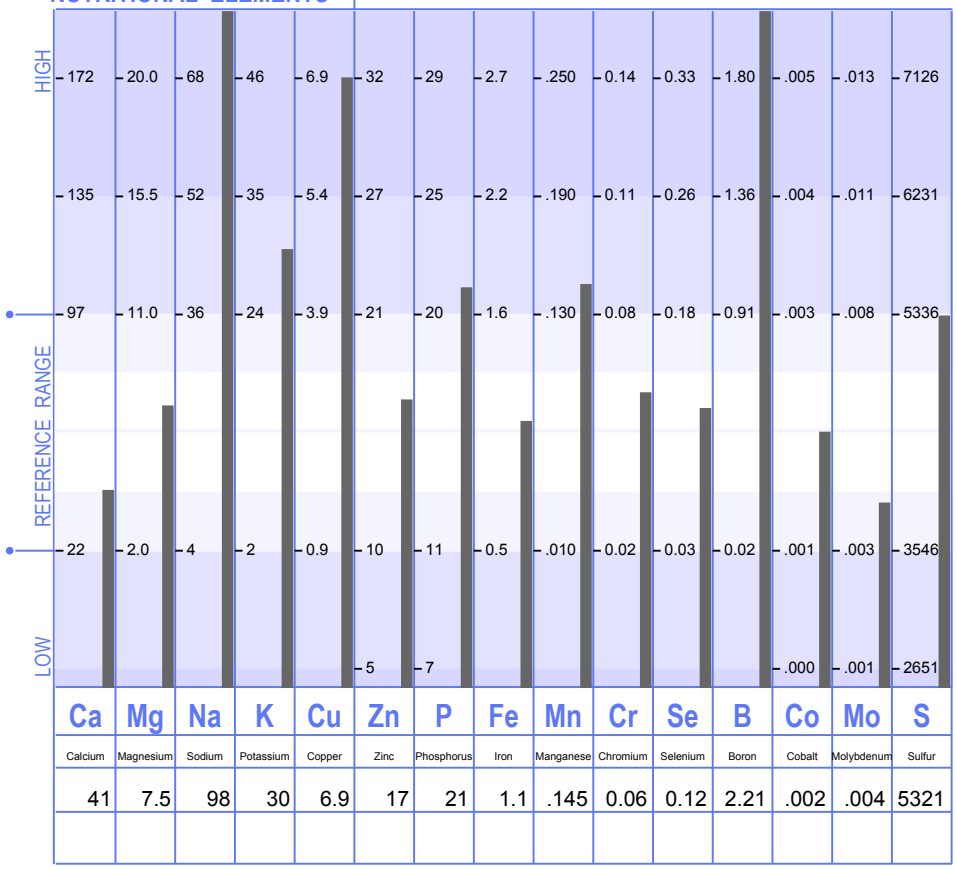
LABORATORY NO.:	1456697
PROFILE NO.: 2	SAMPLE TYPE: SCALP

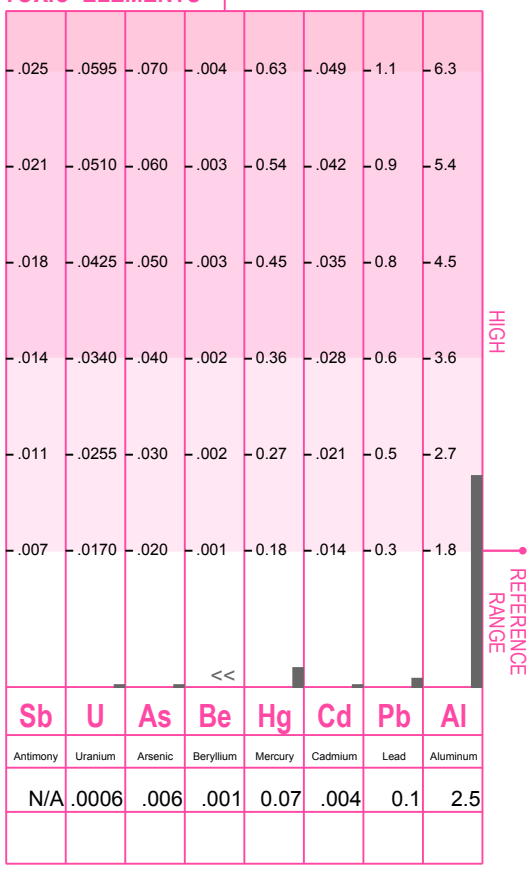
PATIENT: COOTE, ANNE	AGE: 55	SEX: F	METABOLIC TYPE: FAST 1
REQUESTED BY: MOSS, S	ACCOUNT NO.: 2216		DATE: 2/11/2018

NUTRITIONAL ELEMENTS



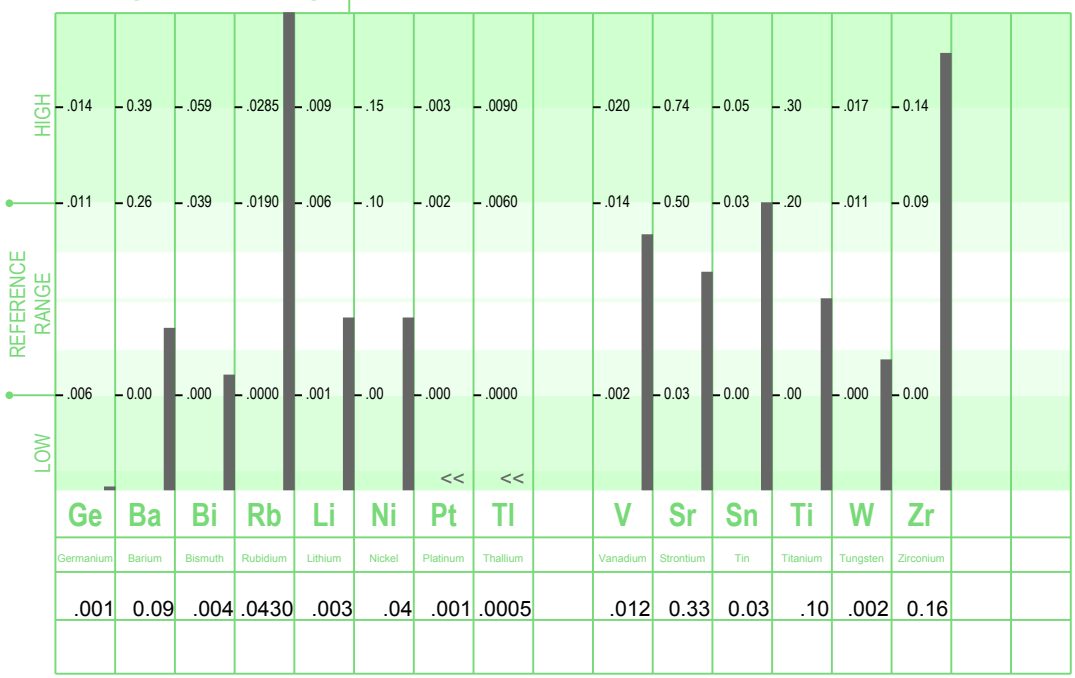
Ca	Mg	Na	K	Cu	Zn	P	Fe	Mn	Cr	Se	B	Co	Mo	S
Calcium	Magnesium	Sodium	Potassium	Copper	Zinc	Phosphorus	Iron	Manganese	Chromium	Selenium	Boron	Cobalt	Molybdenum	Sulfur
41	7.5	98	30	6.9	17	21	1.1	.145	0.06	0.12	2.21	.002	.004	5321

TOXIC ELEMENTS



Sb	U	As	Be	Hg	Cd	Pb	Al
Antimony	Uranium	Arsenic	Beryllium	Mercury	Cadmium	Lead	Aluminum
N/A	.0006	.006	.001	0.07	.004	0.1	2.5

ADDITIONAL ELEMENTS



Ge	Ba	Bi	Rb	Li	Ni	Pt	Tl	V	Sr	Sn	Ti	W	Zr
Germanium	Barium	Bismuth	Rubidium	Lithium	Nickel	Platinum	Thallium	Vanadium	Strontium	Tin	Titanium	Tungsten	Zirconium
.001	0.09	.004	.0430	.003	.04	.001	.0005	.012	0.33	0.03	.10	.002	0.16

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

"QNS": Sample Size Was Inadequate For Analysis.

"N/A": Currently Not Available

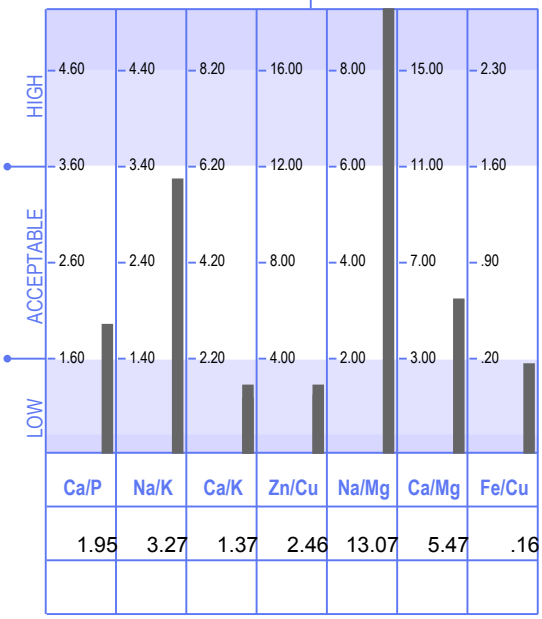
Ideal Levels And Interpretation Have Been Based On Hair Samples Obtained From The Mid-Parietal To The Occipital Region Of The Scalp.

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

2/11/2018
CURRENT TEST RESULTS

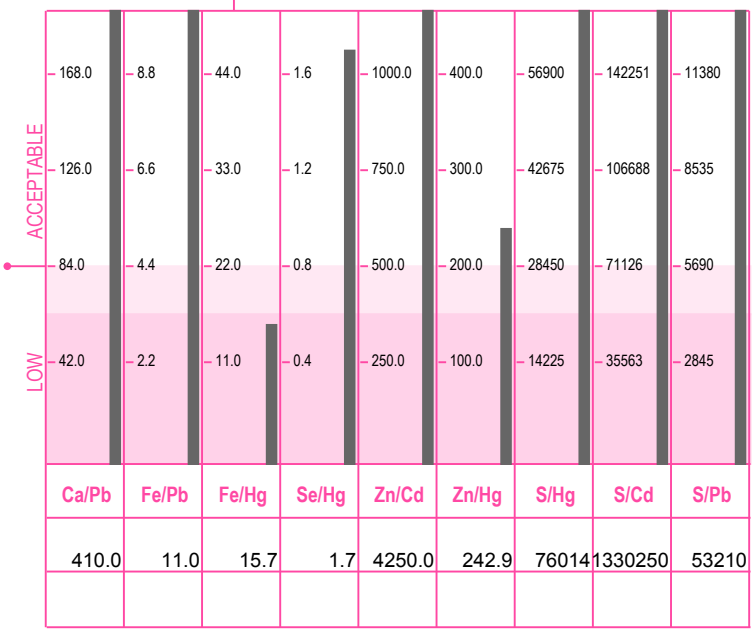
PREVIOUS TEST RESULTS

SIGNIFICANT RATIOS



Ca/P	Na/K	Ca/K	Zn/Cu	Na/Mg	Ca/Mg	Fe/Cu
1.95	3.27	1.37	2.46	13.07	5.47	.16

TOXIC RATIOS



Ca/Pb	Fe/Pb	Fe/Hg	Se/Hg	Zn/Cd	Zn/Hg	S/Hg	S/Cd	S/Pb
410.0	11.0	15.7	1.7	4250.0	242.9	76014	1330250	53210

ADDITIONAL RATIOS

RATIO	CALCULATED VALUE		EXPECTED
	Current	Previous	
Ca/Sr	124.24		131/1
Cr/V	5.00		13/1
Cu/Mo	1725.00		625/1
Fe/Co	550.00		440/1
K/Co	15000.00		2000/1
K/Li	10000.00		2500/1
Mg/B	3.39		40/1
S/Cu	771.16		1138/1
Se/Tl	240.00		37/1
Se/Sn	4.00		0.67/1
Zn/Sn	566.67		167/1

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 RANGES

Generally, reference ranges should be considered as guidelines for comparison with the reported test values. These reference ranges have been statistically established from studying an international population of "healthy" individuals.
Important Note: The reference ranges should not be considered as absolute limits for determining deficiency, toxicity or acceptance.

INTRODUCTION TO HAIR TISSUE MINERAL ANALYSIS (HTMA)

Hair is used for mineral testing because of its very nature. Hair is formed from clusters of specialized cells that make up the hair follicle. During the growth phase the hair is exposed to the internal environment such as blood, lymph and extra-cellular fluids. As the hair continues to grow and reaches the surface of the skin its outer layers harden, locking in the metabolic products accumulated during the period of formation. This biological process provides a blueprint and lasting record of mineral status and nutritional metabolic activity that has occurred during this time.

The precise analytical method of determining the levels of minerals in the hair is a highly sophisticated technique: when performed to exacting standards and interpreted correctly, it may be used as a screening aid for determining mineral deficiencies, excesses, and/or imbalances. HTMA provides you and your health care professional with an economical and sensitive indicator of the long-term effects of diet, stress, toxic metal exposure and their effects on your mineral balance that is difficult to obtain through other clinical tests.

It is important for the attending healthcare professional to determine your mineral status as minerals are absolutely critical for life and abundant health. They are involved in and are necessary for cellular metabolism, structural support, nerve conduction, muscular activity, immune functions, anti-oxidant and endocrine activity, enzyme functions, water and acid/alkaline balance and even DNA function.

Many factors can affect mineral nutrition, such as; food preparation, dietary habits, genetic and metabolic disorders, disease, medications, stress, environmental factors, as well as exposure to heavy metals. Rarely does a single nutrient deficiency exist in a person today. Multiple nutritional imbalances however are quite common, contributing to an increased incidence of adverse health conditions. In fact, it is estimated that mild and sub-clinical nutritional imbalances are up to ten times more common than nutritional deficiency alone.

The laboratory test results and the comprehensive report that follows should not be construed as diagnostic. This analysis is provided only as an additional source of information to the attending doctor.

Test results were obtained by a licensed clinical laboratory adhering to analytical procedures that comply with governmental protocol and standards established by Trace Elements, Inc. U.S.A. The interpretive data based upon these results is defined by research conducted by David L. Watts, Ph.D.

UNDERSTANDING THE GRAPHICS

NUTRITIONAL ELEMENTS

This section of the cover page graphically displays the test results for each of the reported nutritional elements and how they compare to the established population reference range. Values that are above or below the reference range indicate a deviation from "normal". The more significant the deviation, the greater the possibility a deficiency or excess may be present.

TOXIC ELEMENTS

The toxic elements section displays the results for each of the reported toxic elements. It is preferable that all levels be as low as possible and within the lower white section. Any test result that falls within the upper dark red areas should be considered as statistically significant, but not necessarily clinically significant. Further investigation may then be warranted to determine the possibility of actual clinical significance.

ADDITIONAL ELEMENTS

This section displays the results of additional elements for which there is limited documentation. These elements may be necessary for biochemical function and/or may adversely effect biochemical function. Further study will help to reveal their function, interrelationships and eventually their proper therapeutic application or treatment.

SIGNIFICANT RATIOS

The significant ratios section displays the important nutritional mineral relationships. This section consists of calculated values based on the respective elements. Mineral relationships (balance) is as important, if not more so, than the individual mineral levels. The ratios reflect the critical balance that must be constantly maintained

between the minerals in the body.

TOXIC RATIOS

This section displays the relationships between the important nutritional elements and toxic metals. Each toxic metal ratio result should be in the white area of the graph, and the higher the better. Toxic ratios that fall within the darker red area may indicate an interference of that toxic metal upon the utilization of the nutritional element.

ADDITIONAL RATIOS

The additional ratios section provides calculated results on some additional mineral relationships. At this time, there is limited documentation regarding these ratios. For this reason, these ratios are only provided as an additional source of research information to the attending health-care professional.

METABOLIC TYPE

This section of the report will discuss the metabolic profile, which is based on research conducted by Dr. D. L. Watts. Each classification is established by evaluating the tissue mineral results and determining the degree to which the minerals may be associated with a stimulating and/or inhibiting effect upon the main "energy producing" endocrine glands. These glands regulate nutrient absorption, excretion, metabolic utilization, and incorporation into the tissues of the body: the skin, organs, bone, hair, and nails. How efficiently each nutrient is utilized depends largely upon proper functioning of the endocrine glands.

FAST METABOLISM (TYPE #1)

** Sympathetic Dominance
** Tendency Toward Increased Thyroid Function (increased secretion of hormones)
** Tendency Toward Increased Adrenal Activity (increased secretion of hormones)

The current mineral pattern is indicative of a fast metabolic rate (Fast Metabolism, Type #1). The Fast Metabolizer has increased activity of the energy producing endocrine glands, particularly the adrenal and the thyroid. Fast Metabolizers convert nutrients into energy at a rapid rate, resulting in energy and mood swings unless the energy level remains constant. Fast Metabolizers are usually under stress and function best under stress due to the body's response of increasing energy production when confronted by a stressor, whether physical or emotional. Stress seeking, starting several projects at once, and waiting to the last minute to meet deadlines are common descriptions of the Fast Metabolizer (Type #1).

Often, Fast Metabolizers will eat frequently in order to maintain their energy level. This may result in weight gain in the abdominal region. Fast Metabolism may result in warm body temperature, moist skin and a tendency to perspire easily.

It should be noted that stress is a normal part of life and serves a useful purpose when it is controlled. However, chronic uncontrolled stress will eventually contribute to various vitamin and mineral imbalances, and the ability to maintain adequate energy levels and optimum health will decrease.

NUTRIENT MINERAL LEVELS

This section of the report may discuss those nutritional mineral levels that reveal moderate or significant deviations from normal. The light blue area's of each graph section represent the reference range for each element based upon statistical analysis of apparently healthy individuals. The following section, however, is based upon clinical data, therefore an element that is moderately outside the reference range may not be commented on unless determined to be clinically significant.

NOTE:

For those elements whose levels are within the normal range, it should be noted that nutritional status is also dependent upon their critical balance with other essential nutrients. If applicable, discussion regarding their involvement in metabolism may be found in the ratio section(s) of this report.

SODIUM (Na)

The sodium level is above normal. This is common in the fast metabolizer due to the interrelationships of numerous trace elements in this metabolic type. Tissue sodium levels are regulated by the endocrine glands, particularly the adrenals. Aldosterone, which is an adrenal cortical hormone will increase sodium retention as its own production increases. The body will increase aldosterone production during periods of stress and acute conditions. Production is especially sensitive to inflammatory reactions. This profile is indicative of increased requirements for calcium and associated nutritional factors, such as vitamin D.

SODIUM (Na)

High tissue sodium is frequently associated with an increased tendency toward one or more of the following conditions. The more chronic or long-term this profile remains, the greater the tendency toward experiencing these conditions will increase.

- Elevated Blood Pressure
- High Blood Sugar
- Inflammation
- Protein Loss
- Osteoporosis

SOME FACTORS THAT MAY CONTRIBUTE TO A HIGH TISSUE SODIUM LEVEL

- Stress
- Softened Water
- Vitamin A Excess
- Excess Sodium Intake
- Toxic Metal Accumulation or Elimination
- Alcohol
- Vitamin D Deficiency
- Calcium Deficiency
- Increased Adrenal Cortical Activity

SODIUM, POTASSIUM AND DIGESTIVE DISTURBANCE

As chloride is removed from sodium chloride (NaCl) for the production of hydrochloric acid (HCl), an elevated tissue sodium level can be indicative of increased HCl production and peptic conditions. Excessive HCl production can in turn lead to the depletion of pancreatic enzymes affecting digestion, absorption and the integrity of intestinal permeability.

BORON (B)

The boron level of 2.21 mg% is above the established reference range for this element. Boron is suspected to be indirectly associated with calcium, magnesium and phosphorus metabolism, through its suppressing affect upon parathyroid hormone activity. Signs of acute boron excess may include:

- Nausea
- Diarrhea
- Lethargy
- Vomiting
- Dermatitis

Boron is also known to antagonize vitamin B2, thereby increasing vitamin B2 requirements when boron is elevated.

SOME SOURCES OF BORON

- Antacids
- Antihistamines
- Antibiotics
- Dental hygiene products
- Cleaning solutions with boric acid
- Laxatives
- Decongestants
- Analgesics
- Insecticide Dusts
- Soap (borax)

SOME FOOD SOURCES OF BORON

- Legumes
- Fruits
- Alcoholic Products
- Tubers
- Vegetables
- Dietary Supplements

Note: Elevated boron levels may be due to external contamination from soap and detergent residues.

GERMANIUM (Ge)

Your germanium level of 0.001 mg% is below the established reference range for this trace element. However,

deficiency signs and conditions have not yet been documented in humans. Therefore, clinical significance cannot be placed on a low germanium level at this time.

RUBIDIUM (Rb)

The current level of rubidium is elevated above the established reference range. Rubidium is a non-toxic element and is known to be associated with lithium. It is also frequently found to be elevated with potassium, however, its biological function remains to be seen. Therefore, significance of an elevated HTMA level is unknown at this time.

Sources include; fertilizers, corn and cereals. Rubidium is more commonly found in areas with acidic soils.

ZIRCONIUM (Zr)

The zirconium level is above the established reference range for this element. Excess accumulation of zirconium has not been well documented in humans. Some sources of zirconium may include antiperspirants that contain zirconium chlorohydrate. Zirconium is also considered a biocompatible element and may be found in some dental materials.

NUTRIENT MINERAL RATIOS

This section of the report will discuss those nutritional mineral ratios that reveal moderate or significant deviations from normal.

Continuing research indicates that metabolic dysfunction occur not necessarily as a result of a deficiency or excess of a particular mineral level, but more frequently from an abnormal balance (ratio) between the minerals. Due to this complex interrelationship between the minerals, it is extremely important that imbalances be determined. Once these imbalances are identified, corrective therapy may then be used to help re-establish a more normal biochemical balance.

NOTE: The "Nutritional Graphic" developed by researchers at Trace Elements, and presented on the cover of this report shows the antagonistic relationships between the significant nutrients, including the elements (arrows indicate antagonistic effect upon absorption and retention).

LOW ZINC/COPPER (Zn/Cu) RATIO

Zinc and copper are intricately related to the hormones, progesterone and estrogen, respectively, and their tissue levels may be indirectly reflective of the status of these hormones within the body. When zinc and copper are not in normal balance with one another, certain emotional and physical changes related to hormonal imbalance may occur near the menstrual cycle, such as;

- Excessive Cramping
- Food Cravings
- Skin Rashes
- Liver Dysfunction
- Emotional Mood Swings
- Water Retention
- Viral Infections
- Gallbladder Obstruction

Zinc deficiency relative to copper is frequently seen in strict vegetarians, and the degree of imbalance is often directly proportional to the rigidity of the vegetarian diet.

LOW IRON/COPPER (Fe/Cu) RATIO

High copper relative to iron can be antagonistic to many functions of iron metabolism, and can often contribute to iron-deficiency anemia. Copper in excess will interfere with iron absorption and decrease the utilization of iron by the body. The low Fe/Cu ratio is reflective of a positive trend toward copper-induced anemia.

TOXIC METAL LEVELS

Hair is used as one of the tissue's of choice by the Environmental Protection Agency in determining toxic metal

exposure. A 1980 report from the E.P.A. stated that human hair can be effectively used for biological monitoring of the highest priority toxic metals. This report confirmed the findings of other studies which concluded that human hair may be a more appropriate tissue than blood or urine for studying community exposure to some trace metals.

A heavy metal may be elevated in this HTMA and yet no known environmental exposure can be ascertained at this time. This is not unusual, as exposure may have originated years earlier. Additionally, research has found that heavy metals can be inherited by the fetus during pregnancy. Heavy metals can be found in the body for years following the original exposure and will remain in body tissues until removal is initiated. For example, the half-life of cadmium in some tissues will range from ten to thirty years.

ALUMINUM (Al)

The aluminum level is within the cautionary range. 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 (many)

AVOID

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

NOTE:

At this time, further confirmation of heavy metal toxicity 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 levels in the blood may not be present. It is recommended that another analysis be performed in at least one year to monitor any changes in toxic metal accumulation.

TOXIC METAL RATIOS

Every person is exposed to toxic metals to some degree. The retention of these toxic metals, however, is dependent upon the individual's susceptability. The balance of the protective nutrient minerals within the body in relation to the heavy metals can frequently be the determining factor to this susceptibility. As an example, the accumulation of lead will have a more detrimental effect upon body chemistry when sufficient levels of calcium and iron are not available. By examining the toxic metal levels in relation to the protective minerals, the extent to which the heavy metals may be involved in abnormal chemistry can frequently be seen.

DIETARY SUGGESTIONS

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

GENERAL DIETARY GUIDELINES FOR THE FAST METABOLIZER

* INCREASE INTAKE OF HIGH PURINE PROTEIN FOODS...high purine protein sources include liver, kidney and heart. Other good sources include sardines, tuna, clams, crab, lobster and oysters. Unless notified otherwise, high purine and moderate purine protein intake should constitute approximately 33% of total daily caloric intake.

* INCREASE INTAKE OF MILK AND MILK PRODUCTS...such as cheese, yogurt, cream, butter (unsalted). Increase intake of nuts and seeds such as almonds, walnuts, peanuts, peanut butter and sunflower seeds. Foods high in fat unless notified otherwise should constitute approximately 33% of total daily caloric intake.

* REDUCE CARBOHYDRATE INTAKE...including unrefined carbohydrates. Sources such as cereals, whole grains and whole grain products are contraindicated for frequent consumption until the next evaluation. Carbohydrate intake in the form of unrefined carbohydrates should be approximately 33% of total daily caloric intake.

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

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 drowsiness to hyperactivity in children, itching and rashes, headaches, high-blood pressure and arthritic pain.

Sensitivity to foods can develop due to biochemical (nutritional) imbalances, and which stress, pollution, and medications can aggravate. 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 avoid. These foods should be considered as potential "allergy foods", or as foods that may impede a rapid and effective reponse. Consumption of these foods should be avoided completely for four days. Afterwhich, 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:

Chocolate	Liver
Haddock	Walnuts
Bran Flakes	Pecans
Peanut Butter	Avocado
Shrimp	Grapes
Trout	Bakers Yeast

REACTIONS ASSOCIATED WITH COPPER 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 THAT CONTRIBUTE TO A CALCIUM/POTASSIUM IMBALANCE

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

Apricots	Apples
Peas	Chestnuts
Rye Crackers	Blackberries
Clams	Oranges
Cantaloupe	Brewers Yeast
Tomatoes	Kelp
Cucumbers	Potatoes
Coffee	Peaches

THE FOLLOWING HIGH SODIUM FOODS SHOULD BE AVOIDED UNTIL THE NEXT EVALUATION

Table Salt
Corn Chips
Snack Dips
Pickles
Butter (salted)
Frankfurter
Kelp
White Rice
Pork Links
Cornbread
Italian Bread
Cornbread
Pancake Mix
Ham (cured)
Potato Chips
Corned Beef
Ritz Crackers
White Bread
Bacon
Soups (most)
Rye Bread
Cinnamon Rolls
Canned Foods
Bologna
Pancake Mix
Biscuit Mix
Rye Bread

HIGH SODIUM AND SALT CONSUMPTION

Reduction of sodium intake if high in the diet, is suggested at this time. Consumption of table salt should not exceed 1/2 TSP per day.

DIETARY CONSIDERATIONS

Magnesium is required in higher amounts in the presence of increased dietary sodium intake or retention. Sodium is currently high relative to magnesium.

* Reduce sodium intake until magnesium status has improved.
* Increase selection of calcium and magnesium foods.
* Use mineral water for drinking.
* Avoid distilled or softened water for drinking.
* Reduce alcohol intake.
* Limit excessive protein consumption (should not exceed 30%).

FOODS HIGH IN ZINC CONTENT

The following foods may be increased in the diet until the next evaluation:

Beef
Eggs
Pumpkin Seeds
Cashews
Oysters

AMINO ACIDS THAT IMPROVE CALCIUM ABSORPTION

Calcium absorption is greatly enhanced when the diet is high in the amino acids, lysine, arginine and histadine. These proteins also help to reduce acidity of the tissues. Both effects are favorable for the fast metabolizer, therefore addition of any of the following foods to the diet is recommended at this time:

Ham
Lamb
Cottage Cheese
Spare Ribs
Lentils
Rumproast
Vegetable Stew
Canadian bacon
Peanuts
Chuck Roast

SPECIAL NOTE:

This report contains only a limited number of foods to avoid or to increase in the diet. FOR THOSE FOODS NOT SPECIFICALLY INCLUDED IN THIS SECTION, CONTINUED CONSUMPTION ON A MODERATE BASIS IS ACCEPTABLE UNLESS RECOMMENDED OTHERWISE BY YOUR DOCTOR. Under some circumstances, dietary recommendations may list the same food item in the "TO EAT" and the "TO AVOID" categories at the same time. In these rare cases, always follow the avoid recommendation.

CONCLUSION

This report can provide a unique insight into nutritional biochemistry. The recommendations contained within are specifically designed according to metabolic type, mineral status, age, and sex. Additional recommendations may be based upon other supporting clinical data as determined by the attending health-care professional.

OBJECTIVE OF THE PROGRAM:

The purpose of this program is to re-establish a normal balance of body chemistry through individually designed dietary and supplement suggestions. Properly followed, this may then enhance the ability of the body to more efficiently utilize the nutrients that are consumed, resulting in improved energy production and health.

REMOVAL OF HEAVY METALS:

Re-establishing a homeostatic balance or equilibrium of body chemistry will enhance the body's ability to remove heavy metals naturally. The elimination of a heavy metal involves an intricate process of attachment of the metal to proteins, removal from storage areas, and transport to the eliminative organs for excretion. Improvement in ones nutritional balance will improve the capability of the body to perform these tasks and eliminate toxins more easily.

However, the mobilization and elimination of metals may cause temporary discomfort. As an example, if an excess accumulation of iron or lead is contributing to arthritic symptoms, a temporary flare-up of the condition may occur from time to time. This discomfort can be expected until removal of the excess metal is complete.

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Authorized Representative for Australia and New Zealand

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
SYM-PACK VEGAN	1	1	2
MAGNESIUM PLUS	1	0	1
ACTIVATED B6 PLUS (Vitamin B6)	1	0	1
ZINC PLUS	1	1	2
Molyzinc	1	1	1
MANGANESE PLUS	1	0	1
VITAMIN C PLUS	1	0	0
DIGESTIVE-ZYME	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

FAST METABOLISM, TYPE #1

This patient is classified as a FAST METABOLIZER TYPE # 1. Generally speaking, the Fast 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.

Sympathetic Nervous System Dominance
Adrenal Activity Increased
Para-Thyroid Decreased
Tissue Acidity
Thyroid Activity Increased
Pancreatic Activity Decreased
Hyperchlorhydria

Physical Characteristics May Include:

Warm Body Temperature
Perspires Easily
Small Extremities, with Large Torso
Elevated Blood Pressure
Hyperexcitable

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.

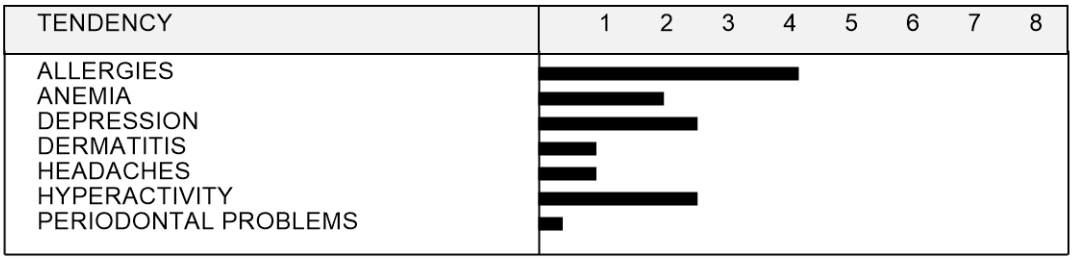
RE-EVALUATION

A re-evaluation is suggested at three months from the beginning of implementation of the 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 occurance 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 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.

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.

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.

HYPERACTIVITY AND EXCESS COPPER:
High tissue copper has been associated with hyperactivity, especially in the fast metabolizer. High copper is also associated with insomnia, temper tantrums and intermittent hyperactivity.

HYPERTHYROID:
Low calcium to potassium is associated with increased thyroid activity. Increased thyroid function increases metabolic rate and body temperature.

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.

TOXIC METALS

ALUMINUM (Al):
Although the aluminum level is above the established reference range, this particular level may not be clinically significant at this time. However, it's clinical significance should also be evaluated in relation to the nutrient minerals.

SOURCES OF ALUMINUM THAT MAY BE INVESTIGATED:

- Baking Powders (some)
- Antacids (some)
- Cigarette Smoke
- Aluminum Containers
- Pesticides
- Treated Water
- Acid or Alkaline foods cooked in aluminum cookware
- Antiperspirants (some)
- White Flour (some)
- Industrial Pollution
- Aspirin Compounds
- Processed Cheese (some)
- Aluminated Salt and Seasonings
- Acid or Alkaline foods kept in aluminum

NOTE:
At this time, further confirmation of heavy metal toxicity 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 levels in the blood may not be present. It is recommended that another analysis be performed in at least one year to monitor any changes in toxic metal accumulation.

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.

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.

DIETARY SUGGESTIONS

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

GENERAL DIETARY GUIDELINES FOR THE FAST METABOLIZER

* INCREASE INTAKE OF HIGH PURINE PROTEIN FOODS...high purine protein sources include liver, kidney and heart. Other good sources include sardines, tuna, clams, crab, lobster and oysters. Unless notified otherwise, high purine and moderate purine protein intake should constitute approximately 30% of total daily caloric intake.

* INCREASE INTAKE OF MILK AND MILK PRODUCTS...such as cheese, yogurt, cream, butter (unsalted). Increase intake of nuts and seeds such as almonds, walnuts, peanuts, peanut butter and sunflower seeds. Foods high in fat unless notified otherwise should constitute approximately 30% of total daily caloric intake.

* REDUCE CARBOHYDRATE INTAKE...including unrefined carbohydrates. Sources such as cereals, whole grains and whole grain products are contraindicated for frequent consumption until the next evaluation. Carbohydrate intake in the form of unrefined carbohydrates should be approximately 30% of total daily caloric intake.

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

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 drowsiness to hyperactivity in children, itching and rashes, headaches, high-blood pressure and arthritic pain.

Sensitivity to foods can develop due to biochemical (nutritional) imbalances, and which stress, pollution, and medications can aggravate. 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 avoid. These foods should be considered as potential "allergy foods", or as foods that may impede a rapid and effective reponse. Consumption of these foods should be avoided completely for four days. Afterwhich, 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:

Chocolate	Liver
Haddock	Walnuts
Bran Flakes	Pecans
Peanut Butter	Avocado
Shrimp	Grapes
Trout	Bakers Yeast

REACTIONS ASSOCIATED WITH COPPER 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 THAT CONTRIBUTE TO A CALCIUM/POTASSIUM IMBALANCE:
The following foods should be avoided until the next evaluation or until notified otherwise by attending doctor:

Apricots
Peas
Rye Crackers
Clams
Cantaloupe
Tomatoes
Cucumbers
Coffee
Apples
Chestnuts
Blackberries
Oranges
Brewers Yeast
Kelp
Potatoes
Peaches

THE FOLLOWING HIGH SODIUM FOODS SHOULD BE AVOIDED UNTIL THE NEXT EVALUATION:

Table Salt
Corn Chips
Snack Dips
Pickles
Butter (salted)
Frankfurter
Kelp
White Rice
Pork Links
Cornbread
Italian Bread
Cornbread
Pancake Mix
Ham (cured)
Potato Chips
Corned Beef
Ritz Crackers
White Bread
Bacon
Soups (most)
Rye Bread
Cinnamon Rolls
Canned Foods
Bologna
Pancake Mix
Biscuit Mix
Rye Bread

HIGH SODIUM AND SALT CONSUMPTION:
Reduction of sodium intake if high in the diet, is suggested at this time. Consumption of table salt should not exceed 1/2 TSP per day.

DIETARY CONSIDERATIONS:
Magnesium is required in higher amounts in the presence of increased dietary sodium intake or retention. Sodium is currently high relative to magnesium.

1). Reduce sodium intake until magnesium status has improved.

2). Increase selection of calcium and magnesium foods.

3). Use mineral water for drinking.

4). Avoid distilled or softened water for drinking.

5). Reduce alcohol intake.

6). Limit excessive protein consumption (should not exceed 30%).

FOODS HIGH IN ZINC CONTENT:
The following foods may be increased in the diet until the next evaluation:

Beef
Eggs
Pumpkin Seeds
Cashews
Oysters

AMINO ACIDS THAT IMPROVE CALCIUM ABSORPTION:
Calcium absorption is greatly enhanced when the diet is high in the amino acids, lysine, arginine and histadine. These proteins also help to reduce acidity of the tissues. Both effects are favorable for the fast metabolizer, therefore addition of any of the following foods to the diet is recommended at this time:

Ham	Rumproast
Lamb	Vegetable Stew
Cottage Cheese	Canadian bacon
Spare Ribs	Peanuts
Lentils	Chuck Roast

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.

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