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LABORATORY NO.:

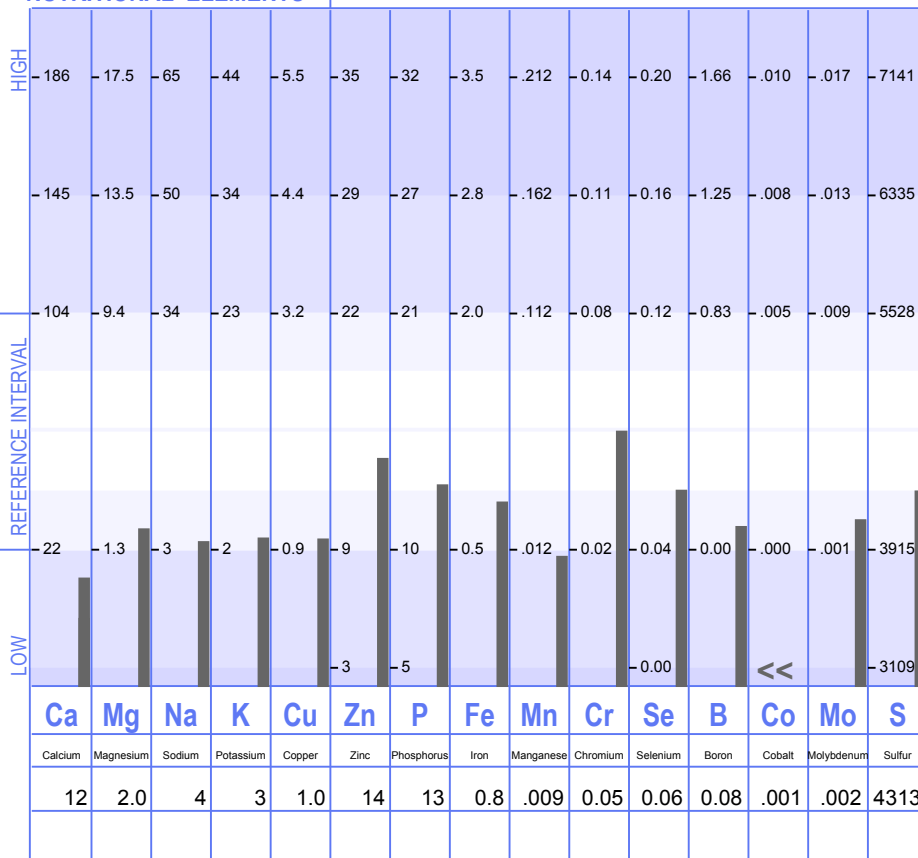
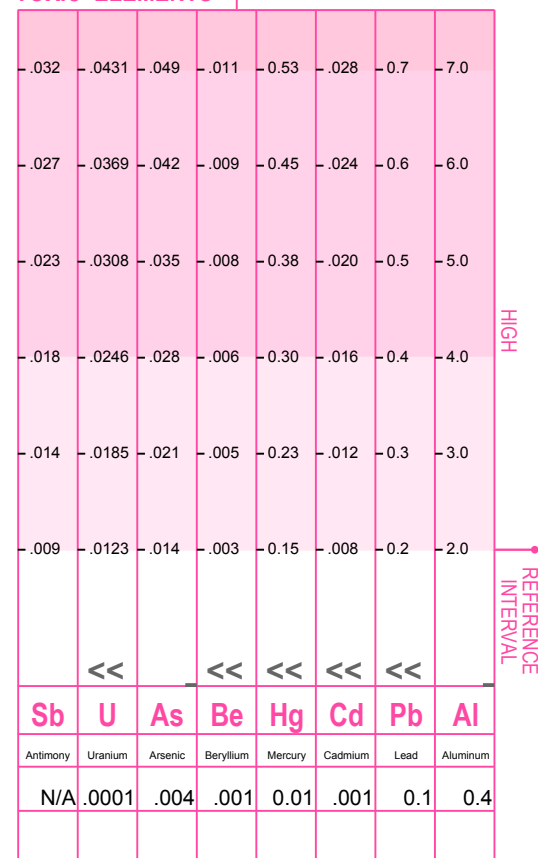
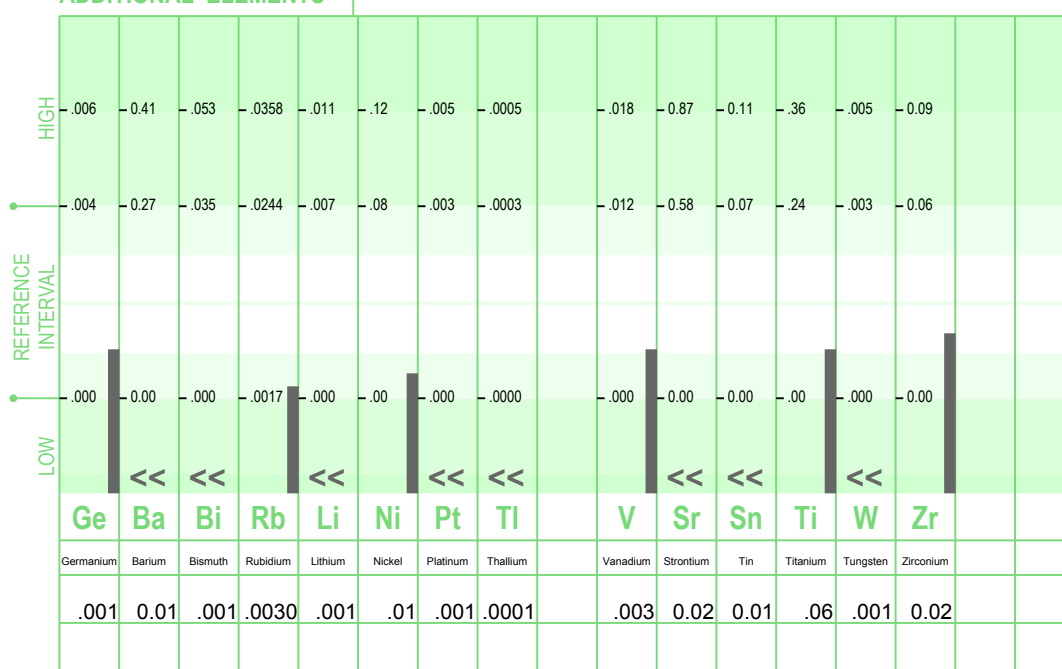
1798192

PROFILE NO.:

2

SAMPLE TYPE:

SCALP

PATIENT: **MADDOCKS, HEATHER**AGE: **40**SEX: **F**METABOLIC TYPE: **FAST 3**REQUESTED BY: **FELLOWES, R**ACCOUNT NO.: **2216**DATE: **24/10/2023****NUTRITIONAL ELEMENTS****TOXIC ELEMENTS****ADDITIONAL ELEMENTS**

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

"QNS": Sample Size Was Inadequate For Analysis.

"N/A": Currently Not Available

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

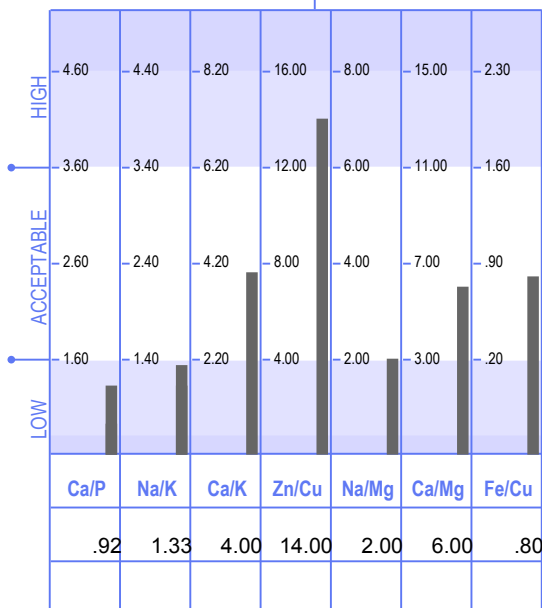
Laboratory Analysis Provided by Trace Elements, Inc.
Dallas, Texas USA an H.H.S. Licensed Clinical Laboratory. No. 45 D0481787

24/10/2023

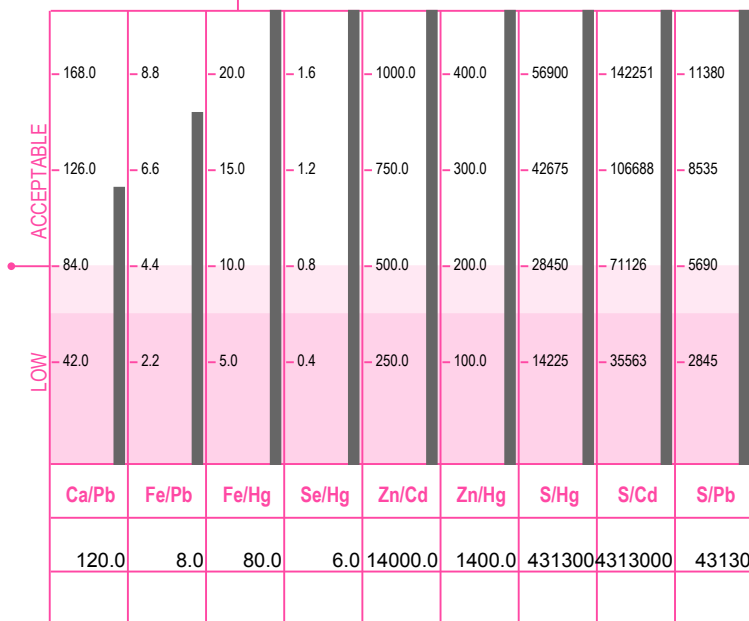
CURRENT TEST RESULTS

PREVIOUS TEST RESULTS

SIGNIFICANT RATIOS



TOXIC RATIOS



ADDITIONAL RATIOS

RATIO	CALCULATED VALUE		EXPECTED
	Current	Previous	
Ca/Sr	600.00		263/1
Cr/V	16.67		8/1
Cu/Mo	500.00		356/1
Fe/Co	800.00		615/1
K/Co	3000.00		6350/1
K/Li	3000.00		6350/1
Mg/B	25.00		21/1
S/Cu	4313.00		2668/1
Se/Tl	600.00		370/1
Se/Sn	6.00		3.2/1
Zn/Sn	1400.00		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.

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 skin's surface, its outer layers harden, locking in the metabolic products accumulated during the formation period. This biological process provides a blueprint and lasting record of mineral status and nutritional and metabolic activity during this time.

The precise analytical method of determining the levels of minerals in the hair is a highly sophisticated technique. However, when performed to exacting standards and interpreted correctly, it may be used as a screening aid for determining mineral deficiencies, excesses, and 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 impact on your mineral balance, which 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, and 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. 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 following comprehensive report 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 reported nutritional element and how they compare to the established population reference range. Values above or below the reference range indicate a deviation from "normal." The more significant the variation, the greater the possibility of a deficiency or excess.

TOXIC ELEMENTS

The toxic elements section displays the results for each reported toxic element. 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 statistically significant but not necessarily clinically significant. Further investigation is then 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 may adversely affect

biochemical function. Further study will help to reveal their role, 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) are as meaningful, 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 critical 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 research and documentation regarding these ratios.

METABOLIC TYPE

This section of the report will discuss the metabolic profile based on research 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 body's tissues: the skin, organs, bone, hair, and nails. How efficiently each nutrient is utilized depends mainly upon the proper functioning of the endocrine glands.

FAST METABOLISM (TYPE #3)

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

The current tissue mineral pattern is indicative of a fast metabolic rate (Fast Metabolism, Type #3). This pattern is often related to exposure to a rather strong and prolonged period of stress and is described as the resistance or exhaustion stage of stress. If this is the case, there may have been a noticeable drop in energy levels. This condition, if chronic, can result in lowered resistance to infections and excessive metabolic activity.

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 AND OTHER ELEMENTS

This section of the report may discuss those nutritional mineral levels that reveal moderate or significant deviations from normal. The light blue and light green areas of each graph section represent the reference interval for each element based on a statistical analysis of apparently healthy individuals. The following section, however, is based upon clinical data; therefore, an element that is moderately outside the reference interval 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. Therefore, if applicable, a discussion regarding their involvement in metabolism may be found in this report's ratio section(s).

CALCIUM (Ca)

Your tissue calcium level is below the normal level. This is not uncommon for fast metabolism (Type #3). However, if this profile worsens or continues for an extended period of time, a tendency toward experiencing one or more of the following symptoms will increase:

Anxiety	Insomnia
Polyps	Dental Problems
Irritability	Osteoporosis
Muscle Cramps	Nervousness

SOME FACTORS THAT MAY CONTRIBUTE TO A LOW TISSUE CALCIUM LEVEL

- * Increased Thyroid Activity
- * Hypoparathyroid Activity
- * Excess of Vitamin A
- * Toxic Metal Accumulation
- * Deficiency of Vitamin D
- * Excessive Phosphorus Retention
- * Deficiency of Magnesium
- * Stress (Physical or Emotional)
- * Inadequate Calcium Intake

MANGANESE (Mn) AND BLOOD SUGAR REGULATION

Manganese is an essential element that, in combination with certain vitamins and minerals is required for many biochemical reactions, including carbohydrate metabolism and energy production. Manganese deficiency is frequently related to such manifestations as low blood sugar levels, ligamentous problems, and reproductive dysfunction.

NUTRIENT MINERAL RATIOS

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

Continuing research indicates that metabolic dysfunction occurs 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 CALCIUM/PHOSPHORUS (Ca/P) RATIO

Calcium and phosphorus are closely related to one another in function and are necessary for the proper balance for the normal metabolism of each element. When phosphorus is in excess relative to calcium, such as found in this profile, the following conditions have been noted with greater

frequency:

Dental Problems
Arthritis

Fast Metabolism
Bone Demineralization

LOW SODIUM/POTASSIUM (Na/K) RATIO

When sodium is low relative to potassium, emotional mood swings, including depression, have been cited in greater frequency. A low sodium-to-potassium ratio may also be related to phobias, withdrawal, repression, and indecision.

HIGH ZINC/COPPER (Zn/Cu) RATIO

The zinc level is high relative to tissue copper status (see high Zn/Cu ratio). Zinc and copper are intricately related to progesterone and estrogen, respectively. This mineral imbalance has been correlated with low levels of estrogen relative to progesterone, which is reflective of a hormonal imbalance. If the imbalance is both severe and chronic, it can result in a failure to menstruate (amenorrhea) and/or the following symptoms;

Increased Infections

Oily Skin

Shortened Menstrual Cycle

TOXIC METAL LEVELS

ALL CURRENT TOXIC METAL LEVELS ARE WITHIN THE ACCEPTABLE RANGE

TOXIC METAL RATIOS

ALL CURRENT TOXIC METAL RATIOS ARE WITHIN THE ACCEPTABLE RANGE

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 improving your biochemistry.

GENERAL DIETARY GUIDELINES FOR THE FAST METABOLIZER

* INCREASE INTAKE OF HIGH PURINE PROTEIN FOODS...high purine protein sources include the 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, and 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 the 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

Certain foods can produce a maladaptive or "allergic-like" reaction, commonly called "food allergies" in some individuals. 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, 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 potential "allergy foods" or foods that impede a rapid and effective response. Therefore, consumption of these foods should be avoided entirely for four days. After which, they should not be eaten more frequently than once every three days during the course of therapy.

FOODS THAT STIMULATE HISTAMINES

Consumption of the following foods can stimulate histamine release in certain metabolic types and may contribute to respiratory-type allergy reactions. Therefore, these foods are to be avoided until the next evaluation or until notified otherwise by the attending healthcare professional.

Beet Greens	Rhubarb
Apples	Chocolate
Spinach	Black Tea
Eggplant	Strawberries
Sweet Potatoes	Peanuts
Blueberries	Green Beans
Pecans	Chard
Wheat Germ	Concord Grapes
Cocoa	Collards
Parsley	Blackberries
Beets	

THE FOLLOWING FOODS MAY BE INCREASED IN THE DIET UNTIL THE NEXT EVALUATION

Mozzarella Cheese	Turnip Greens
Milk	Mustard Greens
Kale	Yogurt
Monterey Cheese	Cream
Almonds	Buttermilk
Swiss Cheese	

HIGH COPPER FOODS

The following foods are good sources of copper. These foods may be increased in the diet until the next evaluation.

Crab	Mushrooms
Liver	Lobster
Cod	Brazil Nuts

Duck
Hazelnuts

Walnuts

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 the acidity of the tissues. Both effects are favorable for the fast metabolizer; therefore the addition of any of the following foods to the diet is recommended at this time:

Lima Beans	Salami
Garbanzo Beans	Sausage (lean)
Rump roast	Lamb
Skim Milk	Smelt
Beef Stew	Vegetable Stew
Cottage Cheese	Canadian bacon
Spare Ribs	Peanuts
Lentils	Bass
Flounder	Heart
Cod	Chuck Roast
Ham	Liverwurst

SPECIAL NOTE:

This report contains only a limited number of foods to avoid or increase the diet. FOR THOSE FOODS NOT SPECIFICALLY INCLUDED IN THIS SECTION, CONTINUED CONSUMPTION ON A MODERATE BASIS IS ACCEPTABLE UNLESS RECOMMENDED OTHERWISE BY THE ATTENDING HEALTHCARE PROFESSIONAL. Under some circumstances, dietary recommendations may list the same food item in the "TO EAT" and the "TO AVOID" categories simultaneously. 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 on other supporting clinical data as determined by the attending healthcare professional.

OBJECTIVE OF THE PROGRAM:

This program aims 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.

WHAT TO EXPECT DURING THE PROGRAM:

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

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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