

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 DOCTOR.

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 80 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 #4

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

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

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

RE-EVALUATION

A re-evaluation is suggested at six months from the beginning of implementation of the supplement program. The metabolic subtypes, such as the Type #4 may result from an acute condition, and therefore, may show a metabolic response more quickly than the Type #1.

TRENDS

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

*** SPECIAL NOTE ***

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

TENDENCY	1	2	3	4	5	6	7	8
CALCULUS								
DIVERTICULOSIS								
HYPERTENSION								
INSOMNIA								
ARTERIOSCLEROSIS								
ARTHRITIS OSTEO								
COLITIS								

COMMENTS

ARTERIOSCLEROSIS AND MAGNESIUM DEFICIENCY:

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

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

OSTEOARTHRITIS:

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

CALCULUS FORMATION:

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

COLITIS:

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

DIVERTICULOSIS:

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

HYPERTENSION AND SODIUM:

Elevated sodium relative to magnesium is associated with a trend toward high blood pressure. Low magnesium relative to calcium indicates increased aldosterone secretion, which produces sodium retention and magnesium loss. It is necessary to correct the magnesium deficiency for control of this type of hypertension.

Limiting the intake of sodium is also suggested at this time. Sodium may be contributed to by drinking water with naturally occurring high sodium content or by the use of some water softeners. The patient's water can be sent for analysis; meanwhile have the patient discontinue the use of water known to be softened, and temporarily switch to bottled water.

DIURETICS:

Some diuretics such as diazide and thiazide may produce a magnesium loss along with sodium. If body stores of magnesium are lost in greater quantities than sodium, the patient's blood pressure may remain elevated even while on the medication. If this is the case, another type of diuretic may be more appropriate for the patient in order to reduce magnesium loss.

INSOMNIA:

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

INSOMNIA AND MAGNESIUM:

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

TOXIC METALS

Uranium (U):

Naturally occurring uranium is a nonessential element found throughout the environment (air, water, food and soil) and is a mixture of three isotopes of uranium (U-234, U-235, U-238). While it is a slightly radioactive element, even in its natural state, its radioactive properties are quite mild and are not considered a health risk as compared to enriched uranium. Enriched uranium (U-234, U-235 isotopes) is refined through industrial processing from the naturally occurring uranium and is associated with nuclear materials and weapons.

Important Note: This uranium test measures the U-238 isotope only and is not indicative of exposure or accumulation of the enriched and highly-radioactive form of uranium (U-234, U-235).

Sources:

Most often, elevated hair levels of uranium are found to occur in people living in areas where the natural concentration of this element is high. In particular, geographical regions with granite and rocky soils are typically higher when compared to other areas of the country.

Other than naturally occurring in soils and ground water, sources include root vegetables grown in high uranium soils, mining, coal burning, phosphate fertilizers and working with nuclear materials. Ceramics, colored glass, light bulbs and photographic chemicals are also potential sources.

Although this patient's uranium level is moderately elevated when compared to the population in general, this tissue level should not be considered as clinically significant at this time. However, known sources should be eliminated if possible and a follow-up test would be suggested within six months to one-year to evaluate the potential of continued exposure.

Note:

A reduction in exposure and improved nutritional status will, in time, assist in mobilizing and excreting this element.

NOTE:

At this time, further confirmation 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.

CONTRAINDICATIONS

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

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