

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 #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

Thyroid Activity Decreased

Hypochlorhydria

Physical Characteristics May Include:

Fatigue

Low Body Temperature

Low Blood Pressure

Tissue Alkalinity

Pancreatic Activity Increased

Adrenal Medullary Insufficiency

Orthostatic Hypotension

Pear-Shaped Body Structure

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 six 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.

TENDENCY	1	2	3	4	5	6	7	8
BRADYCARDIA								
DEPRESSION								
DIVERTICULOSIS								
HYPERTENSION								
INSOMNIA								

COMMENTS

CARDIOVASCULAR IRREGULARITIES:

An imbalance between the normal calcium to magnesium relationship can lead to cardiac irregularities such as arrhythmia, bradycardia, or tachycardia. This is especially true if potassium metabolism is disturbed leading to ECG abnormalities.

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.

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.

FATIGUE:

High calcium to potassium is associated with an underactive thyroid. Fatigue is often a common complaint associated with low thyroid function.

RENAL HYPERTENSION:

High blood pressure is often seen when a low sodium to potassium ratio exists. This is especially true when magnesium is low to calcium and is related to renal hypertension.

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.

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.

This patient's uranium level is only slightly elevated when compared to the population in general, therefore this tissue level should not be considered as clinically significant at this time. However, a follow-up test is suggested within one-year to evaluate the possibility of continued exposure.

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.

PABA

PABA is known to antagonize thyroid function and increase the absorption and retention of calcium. PABA supplementation can contribute to a loss of potassium and suppress thyroid expression. The patient should avoid sources of extra PABA, especially if a hypo-thyroid condition is present.

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