

## 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
DEPRESSION								
FATIGUE								
ANEMIA								
DIVERTICULOSIS								
HYPERTENSION								
INSOMNIA								
NEUROMUSCULAR DYSFUNCTION								

## COMMENTS

### **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.

### **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.

### **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.

### **NEUROMUSCULAR DYSFUNCTION:**

Calcium and magnesium are necessary in the proper balance for normal muscular contraction and relaxation. Sodium and potassium are involved in normal nerve conduction. When calcium and magnesium as well as sodium to potassium imbalances exist, neuromuscular dysfunction may be present.

## 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