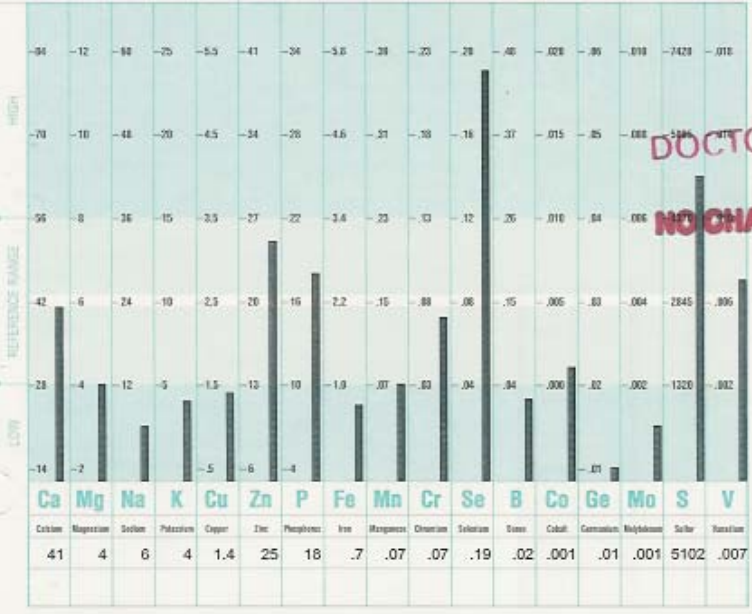




LABORATORY NO: 298392	
PROFILE NO: 2	SAMPLE TYPE: SCALP
PATIENT: ANNA	AGE: 48 SEX: F METABOLIC TYPE: FAST 4
REQUESTED BY:	ACCOUNT NO: 4739 DATE: 10/30/2000

NUTRIENT MINERALS

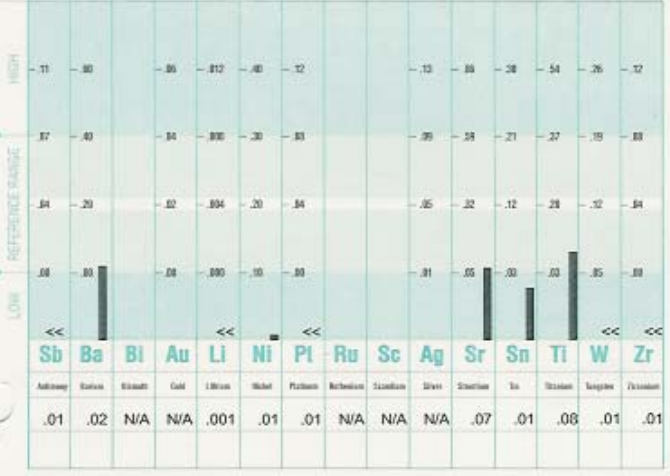


TOXIC MINERALS



DOCTOR REPORT
NO CHARGE

ADDITIONAL MINERALS

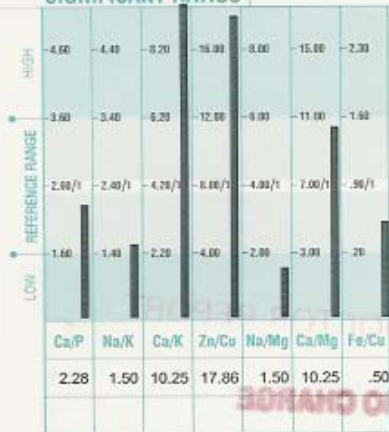


*"<<": Below Calibration Limit; Value Given is Calibration Limit.
 *QNS": Sample Size Was Inadequate For Analysis.
 *NA": Currently Not Available
 Reference Ranges Are Based Upon Hair Samples Obtained From The Mid-Parietal To The Occipital Region Of The Scalp
 Laboratory Analysis Provided by Trace Elements, Inc., an H.H.S. Licensed Clinical Laboratory No. 45 D0481787 Philip B. Mendershausen, Ph.D., Laboratory Director

10/30/2000
CURRENT TEST RESULTS
PREVIOUS TEST RESULTS

Aima

SIGNIFICANT RATIOS



TOXIC RATIOS



ADDITIONAL RATIOS

RATIO	CALCULATED VALUE		OPTIMUM
	Current	Previous	
Ca/Sr	585.71		131/1
Cr/V	10.00		13/1
Cu/Mo	1400.00		625/1
Fe/Co	700.00		440/1
K/Co	4000.00		2000/1
K/Li	4000.00		2500/1
Mg/B	200.00		40/1
S/Cu	3644.29		1138/1
Se/Ag	N/A		1.5/1
Se/Sn	19.00		0.67/1
Zn/Sm	2500.00		157/1

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).

NUTRIENT MINERALS

Extensively studied, the nutrient minerals 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 MINERALS

The toxic minerals 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 MINERALS

These minerals 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 minerals 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 a population of "healthy" individuals.

Important Note: The reference ranges should not be considered as absolute limits for determining deficiency, toxicity or acceptance.

INTRODUCTION

THE FOLLOWING REPORT SHOULD NOT BE CONSIDERED DIAGNOSTIC. IT IS AN ADDITIONAL SOURCE OF INFORMATION THAT MAY BE USED IN CONJUNCTION WITH OTHER LABORATORY TESTS, HISTORY, 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 BASED UPON THESE RESULTS IS DEFINED BY RESEARCH CONDUCTED BY DAVID L. WATTS, PH.D.

This analysis including "ideal" 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 300 mg.)
- * High grade stainless steel or plastic sampling scissors.
- * Untreated virgin hair (no recent perms, bleaching, or coloring agents).

METABOLIC TYPE

FAST METABOLIZER, TYPE #4

The patient is classified as a FAST METABOLIZER TYPE #4. This metabolic type has a dominance of phosphorus relative to calcium (sympathetic dominance), with an existing adrenal and thyroid insufficiency. This pattern is characteristic of "stress burnout," which can be a result of prolonged, chronic stress. This pattern may result in extreme fatigue and depression.

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 two 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.

CARDIOVASCULAR DISEASES AND COPPER DEFICIENCY:

Copper deficiency has been shown to be related to impaired liver function, resulting in elevated plasma cholesterol levels. High density lipoproteins (HDL) may be found low with an increase in low density lipoproteins (LDL) during copper deficiency states. Copper deficiency can result in an impairment of normal elastin formation, thereby contributing to myocardial disturbances.

FATIGUE:

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

FATIGUE AND LOW IRON:

Low tissue iron is associated with a tendency toward anemia. Iron deficiency anemia is a contributing factor to fatigue and shortness of breath.

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.

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.

*** VITAMIN A ***

Vitamin A has a stimulating effect upon the thyroid gland and therefore may contribute to a concomitant increase in the metabolic rate. Vitamin A's action increases the tissue retention of the mineral potassium and antagonizes the effect of vitamin D, which can contribute to calcium loss or a lack of retention. At this time extra vitamin A supplementation should be avoided by the patient unless an inborn error of metabolism exists.

*** ZINC ***

An elevated zinc/copper ratio is known to lower the HDL/LDL ratio and thereby contribute to increased cholesterol levels. The patient should not be taking a zinc supplement exclusively as this may contribute to a worsening of the zinc/copper balance.

*** ASPARTAME ***

Aspartame (aspartic acid) is an ingredient of some sweeteners. In the metabolic pathways, aspartic acid is converted to phenylalanine, which is further metabolized to tyrosine. In the presence of an iron deficiency, phenylalanine is not metabolized to tyrosine. The amino acid phenylalanine has a sedative effect that, if excessive, may contribute to fatigue and depression.

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 the patient'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.

10/30/00

PATIENT: ANNA

THE FOLLOWING RECOMMENDATIONS SHOULD BE TAKEN ONLY WITH MEALS IN ORDER TO INCREASE ABSORPTION AND TO AVOID STOMACH DISCOMFORT.

RECOMMENDATION	AM	NOON	PM
SYM-PACK	1	0	1
ADRENO-NSF	1	1	1
MIN-PLEX B	1	1	1
COPPER PLUS	1	0	1
DIGEST-ZYME	1	1	1
VITAMIN E PLUS	1	1	1

THESE RECOMMENDATIONS MAY NOT INCLUDE MINERALS WHICH APPEAR BELOW THE IDEAL OR IN TURN MAY RECOMMEND MINERALS WHICH APPEAR ABOVE THE IDEAL ON THE TMA 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.