

Hair Mineral Analysis and the Health Care Crisis

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As our health/disease care system moves from one crisis to another with steadily increasing costs, primarily for drugs and “medications”, many different plans and solutions are offered to try to solve the problems. A major part of the problem with our health/disease care system is that it is dominated and driven by a disease paradigm that is too simplistic and obsolete for many of our current health care needs. The solution to many of our health care problems, both psychological and medical, has to do with changing our conceptual models and paradigms. We need to make a substantial change in our thinking about health/disease care if we are going to make some of the fundamental changes that will help more people prevent disease and maintain their health at a high level of functioning, including a strong immune system. A highly effective laboratory tool that would support a solid scientific approach to disease prevention and health maintenance is hair tissue mineral analysis (TMA).

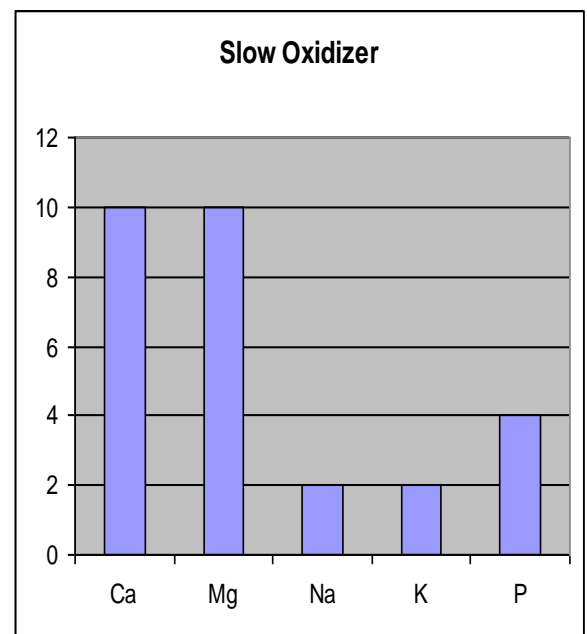
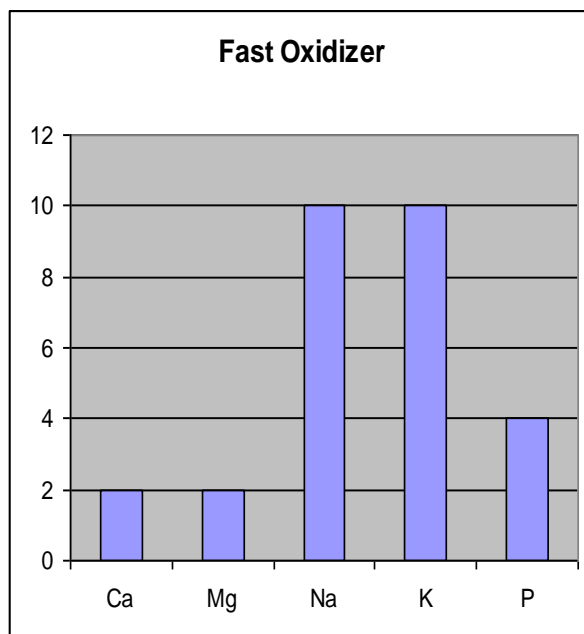
Hair mineral analysis seems to be going through a revival as health/disease care costs skyrocket and people are looking for better answers to their health concerns. In the 1970's and 80's, great progress was made in understanding the vital health information that was revealed in a hair mineral analysis. In particular, it was discovered that a hair mineral analysis revealed a great deal about the impact of stress on a person's life and on their health. Dr. Hans Selye's three stages of stress were and are very helpful in understanding a hair mineral analysis.

Since it is a well established fact that stress depletes a person's magnesium reserves, a hair mineral analysis is a powerful laboratory tool for assessing a person's magnesium status. It is vital for good health to have adequate magnesium reserves in cells and tissues. A hair mineral analysis provides a person with a very accurate assessment of magnesium status. In my own case, back in 1980, my first hair analysis revealed a severe magnesium deficiency that put me at very high risk for a sudden

massive fatal heart attack. I believe that the hair analysis saved my life and guided me on a nutritional path to restore my health and energy for nearly thirty years.

The nutrient minerals do not deposit *randomly* in the hair follicle. The nutrient minerals usually deposit in one of two basic mineral patterns that reflect a person's oxidation (metabolic) type – fast or slow. Once you know your oxidation type, then you can gain a much better understanding of how your nervous system and endocrine glands are functioning. The nutrient minerals are closely associated with the autonomic nervous system – the sympathetic and the parasympathetic parts of the nervous system. You also can gain a better understanding of how well your energy producing endocrine glands -- the adrenals and thyroid -- are functioning, especially in response to stress, diet, food supplements, and drugs/medications.

The laboratory results of a hair tissue mineral analysis (TMA) are reported in a numerical form that can easily be converted to graphs. The graphic forms are very helpful in seeing and understanding the hair analysis results. Fast Oxidation (metabolism) and Slow Oxidation (metabolism) patterns are easily observed in most hair nutrient mineral patterns. Below are typical hair mineral patterns:



Fast Oxidation is reflected by lower than ideal levels of the minerals calcium (Ca) and magnesium (Mg) along with elevated levels of sodium (Na) and potassium (K). Fast Oxidation also is reflected by a lower than ideal ratio of calcium to phosphorus (Ca/P).

The ideal Ca/P ratio is 2.6/1; when this ratio drops below 2.6/1, it reflects a trend towards Fast Oxidation. Calcium, magnesium, and copper deficiencies are often found in the hair mineral analysis of a fast oxidizer, increasing the risks for cardio-vascular problems.

Slow Oxidation is reflected by higher than ideal levels of calcium and magnesium and lower levels of sodium and potassium. Slow Oxidation also is reflected by an elevated ratio of calcium to phosphorus (Ca/P). As the Ca/P ratio increases above 2.6/1, it reflects a trend towards Slow Oxidation. Copper excess and potassium deficiency are frequently found in the hair mineral analysis of a slow oxidizer, increasing the risks for problems with chronic fatigue and many different types of psychological problems.

These distinctions between Fast and Slow Oxidation are important because the nutritional needs of each Oxidation Type are substantially different. For example, a Fast Oxidizer usually needs much more calcium, magnesium, and copper than a Slow Oxidizer. A Slow Oxidizer usually needs much more potassium and vitamin C than a Fast Oxidizer. Fast and Slow Oxidation hair mineral patterns are very useful applications of **Dr. Roger Williams' concept of "biochemical individuality."**

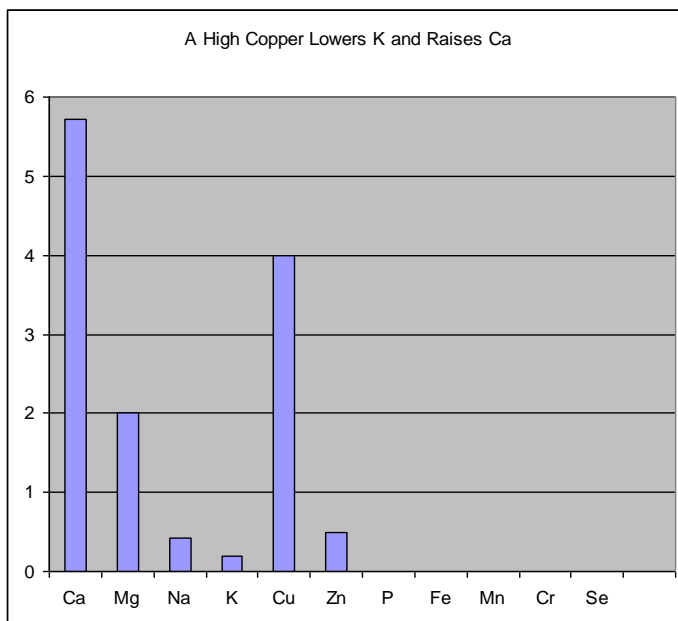
The nutrient minerals in a hair mineral analysis also reveal what is happening with a person's capacity to produce energy in the cells and tissues. Hair analysis research has shown the effects of depleted adrenal glands and low thyroid activity as contributing to chronic fatigue and depression. These effects are reflected in low hair sodium and potassium levels in a slow metabolic type nutrient mineral pattern.

In my view, the strength of valid hair analysis interpretations depends on having a conceptual framework that has a meaningful scientific and clinical foundation. Selye's three stages of stress and George Watson's oxidation types (fast and slow) are cornerstones of this conceptual framework. The vast amount of scientific knowledge regarding the autonomic nervous system and the energy producing endocrine glands (adrenals and thyroid) also support this interpretive conceptual framework.

On a practical level, having precise ideal nutrient mineral levels that are very close to biological values lends great support to valid interpretations of hair analysis data. Having precise ideal nutrient mineral levels, i.e. calcium, magnesium, sodium, potassium, etc. for hair analysis interpretation also provides a sound basis for establishing the ideal ratios between nutrient minerals.

In addition to having precise ideal nutrient mineral levels, another important aspect of a hair mineral analysis is that the ratios between pairs of nutrient minerals convey vital information. The relationships between different nutrient minerals are reflected in these ratios. The ratios between nutrient minerals are important for understanding a hair mineral analysis because these minerals help to regulate important psychological and physiological functions. The levels of nutrient minerals measured in a hair mineral analysis are very important. But, perhaps even more important are the ratios between certain nutrient minerals. This is because many of these minerals are involved in regulating important physiological and metabolic functions such as blood sugar, blood pressure, heart rhythm, and nerve transmissions.

As human populations get sicker and sicker at younger age levels, hair analysis norms will depart further from the earlier biological norms that were established about 30 years ago. In a study that was published in 2005, the developmental hair analysis data on children ages 6, 12, and 18 showed the effect of estrogen in slowing the metabolic rate of females much faster than males over time. I believe that this is due primarily to effect of excess estrogen and copper (Cu) exposure from one generation to the next.



The close relationship between estrogen and copper is a key concept in understanding what has happened to women's health ever since the birth control pill and

copper IUDs were introduced. Hair analysis research and clinical practice have shown that excess copper buildup in the cells and tissues has had profound effects on the health and well being of countless numbers of teen girls and women. The above graph provides an illustration of a commonly observed hair mineral analysis profile showing several nutrient mineral imbalances that affect both the psychological and physiological functioning of countless numbers of teen girls and women.

As excess copper builds up, primarily in brain and liver tissue, during the stress of a pregnancy, large amounts of the excess stored copper may be released and transmitted *in utero* to the fetus. This increases the likelihood that the baby will be born with an excess amount of copper that can affect growth and may induce jaundice because of the liver involvement. Essentially, what this phenomenon means is that the new generation is likely to start life with much higher copper levels than the previous generation. This is an especially serious problem for female children because, at adolescence, the excess copper problem is likely to become much worse as the girl's own estrogens increase the copper overload. Both physical and psychological problems are likely to become worse because the liver and the brain are involved. This adverse trend was shown in the hair analysis data that I reported in a 2005 developmental study of boys and girls at ages 6, 12, and 18.

In summary, the value of hair mineral analysis has been shown during the past 30 years. It easily helps to determine a person's oxidation (metabolic) type – fast or slow. This determination aids in selecting the most appropriate nutrients for an individual. The hair analysis also reflects on how a person's energy and health has been impacted by stress.

The hair analysis is a powerful tool for determining a person's magnesium status. Magnesium deficiency is one of the most common and critical nutrient mineral deficiencies in the population. Magnesium is lost from cells and tissues under stress. Women's health conditions are much better understood with a hair analysis because it shows copper status and its relationship to the slow oxidizer hair mineral pattern. Most women are Slow Oxidizers who often show a high copper level.

The hair analysis also can be a powerful research tool by identifying the oxidation type of research subjects. Drugs, medications, and nutrients are likely to have differential effects depending on the oxidation type of the subjects involved in a study.

The hair analysis can also be a valuable health and nutrition education tool. The hair mineral patterns of different individuals allow us to see how the nutrient minerals are related to stress, cellular energy production, glucose regulation, nerve transmissions, the autonomic nervous system – sympathetic and parasympathetic, the endocrine glands – adrenals and thyroid, and the parts of the immune system – humoral and cellular. Autoimmune diseases are likely to be much better understood when they are studied with hair analysis data to support such research.

The use of hair mineral analysis in health related research and in health/disease care could greatly reduce the constantly escalating costs in our highly dysfunctional health/disease care system. I believe that hair mineral analysis and the conceptual framework that make it very meaningful can lead to nutritional programs that help to prevent disease and maintain good health at a high energy level. Nutrition for disease prevention and health maintenance are keys to restoring sanity and sense to the American health care system.

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Health History Checklist (related to high copper, slow metabolic mineral pattern)

1. Feelings of doom
2. Fatigue & exhaustion
3. Hypothyroid (slow thyroid)
4. Mind is in a fog
5. Headaches, migraines
6. Mood swings
7. Supersensitive, weepy
8. Cold hands, and/or feet
9. Depression
10. Dry skin
11. Chocolate cravings
12. Feeling of loss of control
13. Paranoia
14. Despair, suicidal feelings, hopelessness
15. Arthritis, calcium spurs
16. Constipation
17. Racing heart, pounding heart
18. Adverse reaction to vitamins & minerals
19. Problems with concentration and memory
20. Short attention span, "spaciness"
21. Eating disorders: anorexia, bulimia, overeating
22. Panic attacks, high anxiety, free floating anxiety
23. Yeast infections (*candida*)
24. Aching muscles or muscle cramps
25. Hypoglycemia
26. Mind races -- insomnia, interrupted sleep
27. PMS
28. Mononucleosis
29. Low blood pressure
30. Obsessive thoughts
31. PMS