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Clinical Reliability of Hair Mineral Analysis and Interpretation: A Psycho-Physiological Viewpoint

----- Richard Malter, Ph.D. -----

A few years ago in the Townsend Letter for Doctors & Patients, Dr. Alan Gaby wrote some critical editorial comments about hair tissue mineral analysis (TMA). Dr. Gaby's editorial comments were a useful stimulant to discussion of several important technical and clinical issues related to this subject. Since Dr. Gaby raised the question of validity of TMA, but not reliability, I assumed that reliability is not a problem for him.

Regardless of one's personal or professional views about TMA, the nature of this laboratory test and the conceptual systems used to interpret the data can be highly useful in understanding some of the crucial issues in present day health care.

As Dr. Gaby observes, "some laboratories' interpretation of hair mineral test results is extremely complex." This is because the biochemical and psycho-physiological phenomena to which TMA reflect are inherently complex, highly interactive and dynamic. The nature of the psycho-physiological phenomena reflected in a TMA cannot be properly understood within the prevailing medical model that is essentially a dichotomous disease model. Under this model, either the individual is healthy or he/she has a diagnosable medical condition. This model does not lend itself very well to dealing with those physical and psychological conditions that are often experienced as uncomfortable but are not severe enough to be diagnosed as a disease. These types of conditions mark the early stages of a medical and/or psychological disorder. The vast majority of people fall into this intermediate range between optimal health and having a disease that can be diagnosed by a health care professional. They fall within the intermediate range of what I call the health-energy continuum. They lack optimal health and energy, but they are not so severe as to fall outside of the "normal" ranges of blood and urinalysis norms.

If we view a TMA profile as an energy profile, it usually provides a great deal of information about a person's energy levels and fluctuations. The "complex" interpretative system relies on mineral patterns as well as ratios between pairs of minerals. The synergy and antagonistic relationships of minerals are very important aspects of the psycho-physiological system.

From a conceptual standpoint, it is important to distinguish between the actual measured laboratory result of a particular mineral or toxic metal and the interpretive model applied to organizing the data. The measured amount is really an approximation to the actual amount of the level of that particular mineral.

Dr. Gaby is certainly correct when he states that "many of the lab tests (in alternative medicine) produce nonspecific results." This is a crucial point in regard to TMA data and interpretation. The test results are nonspecific in the same way that the stress response is general and nonspecific. The psychophysiology of the stress response provides a broad conceptual framework for meaningfully interpreting TMA data. From a psychological perspective on the mind/body interaction, there is a beautiful match between the psycho-physiological phenomena of the stress response and TMA data. This is described in more detail in my article on "TMA and Psychoneuroimmunology". When a health care practitioner applies this conceptual framework to TMA data, the mineral patterns become much more meaningful in regard to a person's stress response and the effects of stress. This perspective can be clinically useful, leading to the selection of a combination of supplements and diet that will provide the body with optimal nutritional support, especially in regard to energy production and the resiliency for coping with stress.

Dr. Gaby questions the use of "ideal" mineral levels and ratios between pairs of minerals such as calcium/magnesium. He reasons that most people will not "hit" such an ideal norm so therefore, why should it be used. "Normal/Abnormal" concepts better fit the health/disease dichotomous medical model mentioned above than the health/energy continuum model. "Normal/ Abnormal" concepts are better suited to arriving at a clinical "diagnosis" rather than understanding the dynamic mechanisms and metabolic relationships of the psychophysiology of stress. The latter involves a complex dynamic interacting bio-psychological system with different regulating feedback mechanisms that are best accounted for by "Chaos" theory. Therefore, Chaos theory provides a different scientific basis for understanding TMA than the linear reductionist models that characterize medical and psychological research studies and clinical practice.

The question of validity is certainly a crucial question in regard to TMA, but it is also crucial in regard to any other tests applied to clinical concerns, whether they are physical or psychological. If we were to raise the question of the clinical validity of blood tests such as those used for the determination of hypothyroidism; it might shake the foundation of some aspects of standard medical practice. I have encountered many depressed individuals in my psychology practice that describes a set of symptoms, which Dr. Broda Barnes would consider as indicators of a slow thyroid. However, the blood tests of many of these individuals were determined to be "normal" according to the norms of these tests.

TMA sheds some very interesting and important light on this most common health concern today, namely symptoms associated with hypothyroidism. Many of the individuals with whom I work in psychotherapy have several of the symptoms on their health history checklist including cold hands and feet, low blood pressure, hypoglycemia, cool body temperature, dry skin, etc. Most of these clients are women who suspect that they have a slow thyroid. Typically, their doctors tell them that their blood tests for thyroid function are within the "normal" range. Therefore, it is concluded that they do not have a thyroid problem; yet they are experiencing hypothyroid related symptoms.

When we look at the TMA profiles of these individuals, invariably, they show high calcium (Ca) and low potassium (K) levels. The Ca/K ratio is considered by Trace Elements Lab to be an index of thyroid expression. An elevated Ca/K ratio is an indication of reduced thyroid expression. This TMA pattern invariably correlates well with the hypothyroid symptoms reported by the individual. When these patients are given thyroid and nutritional support they usually respond very well. This suggests that the TMA thyroid ratio (Ca/K) is far more clinically valid than the more commonly used serum thyroid indicators. In this context, one can raise some serious questions about the clinical validity of the serum thyroid indicators. Many of my

clients have found that their doctors simply dismiss their symptoms because, after all, the serum thyroid indicators can't be wrong. In many cases, the problems and symptoms that are experienced by a person occur in clusters that are strongly correlated with that person's TMA. In my view, the appropriate test of the ideal TMA norms used by such labs as Trace Elements, Inc. (TEI) is whether there is strong clinical validity of the TMA lab results for a particular individual. Do the observed measured data fit the psychological and physiological symptoms and reactions of that individual? Do these data adequately help to account for the psychophysiological phenomena that are experienced by the person? Are we clinically better off having this data than guessing the needs of the patient? In almost all cases, the TMA data is far better than guessing. We already have far too many cases of "clinical" guesswork in standard medical and psychiatric practice.

I continually see the clinical value of TMA results in accounting for many health conditions that baffle many medical doctors and seriously inflate the cost of health care. Since TMA data reflect the mind/body connection by means of the stress response, a psychological component needs to be included in any meaningful interpretation of these types of data. In fact, TMA often shows a clear connection between psychological and physical problems. In the vast majority of cases that doctors attempt to diagnose and treat, the psychological stress component is rarely if ever addressed. In many cases, TMA data suggest that, when the psychological stress factor is not adequately addressed, the mind is capable of "over-riding the effects of medications, vitamins, minerals and hormones.

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