

BODY CHEMISTRY BALANCING

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The human body, like everything else in nature, must maintain its proper chemical and electrical balance to be healthy. To create the most harmonious condition for healing, body chemistry balancing involves the use of food and diet; air and breathing; positive/negative ions and gauss; full spectrum light and sunshine; heating and cooling, along with elements such as vitamins, minerals, and enzymes.

According to pioneering biochemist, Dr. Edward Howell, enzymes are the substances that make life possible. They are also a factor in determining a person's life span. There are over 700 identified human enzymes that act as catalysts to bring about all intra and extracellular chemical processes. They harvest nutrients from the foods we eat and build the body from proteins, fats, and carbohydrates.

Experts at *Analytical Research Labs Inc.*, found that approximately 80 percent of the U.S. population lacks the necessary enzymes and natural stomach acids to adequately digest their food. Thus, establishing a healthy gut flora is the first step to restoring one's health.

Minerals are the 'spark plug's of life and the basis of all life on this planet. Each living body cell, including DNA, depends on minerals for its structure and function. Minerals are involved in almost all enzyme activities. Vitamin effectiveness also depends on minerals. Mineral levels and ratios determine biochemical balances.

Many factors like the environment, climate, toxic metals, fluoride and other pollutants, EMFs and radiation, stress, emotions and thoughts, exercise, diet, GMOs, and drugs, including medications, affect body chemistry. Biochemical imbalances can contribute to many mental and emotional conditions, such as anxiety, fear, depression, hyperactivity, hostility, phobias, and insomnia. They can also contribute to many physical ailments and diseases such as heart disease, cancer, digestive problems constipation, yeast infections, dry skin, poor skin tone, allergies, osteoarthritis, diabetes, hypoglycemia, and muscular dystrophy – to name a few. However, there are always differences to consider because of biochemical individuality. Also, multiplicity of biochemical imbalances can create both physical and mental/emotional symptoms. For example, eating disorders, which cause a person to be ill and fatigued, can also frequently cause the afflicted person to have a distorted view of the world. A metabolic pattern is a combination of mineral levels and/or mineral ratios that reveal how the body is responding to stress. Mineral ratios represent mineral relationships and balances in the body.

BIOCHEMISTRY AFFECTS ENERGY

Early in the twentieth century, Dr. William Albrecht, first explored the affect each mineral has on the other minerals in the soil and in plant life. This mineral relationship is the same in the human body. Biochemical balances and imbalances affect the functions of the body's organs, glands, hormones, and ability to reproduce. The amount of energy a person has is determined by the relationships between the minerals in the body. In fact, all body activities, including cleansing and healing, depend on adequate energy synthesis. For instance, energy is needed to express love. A person with sufficient energy abounds with good health, charisma, excitement, and sexual vibrations. Without high levels of energy, it is difficult to be outwardly loving. A person who is lacking energy is often depressed, has little self-esteem, an inhibited personality, and generally little ability to express much passion.

The thyroid gland and the adrenal glands supply the body with more than 98 percent of its energy. In addition, the efficiency of these glands determines the body's oxidation type or speed of metabolism. The four main minerals in the body that help to regulate the thyroid and adrenal gland are calcium, magnesium, sodium, and potassium.

One of the most important mineral ratios in the body is the sodium/potassium ratio, which indicates vitality and the electrical balance within and between the cells. Sodium is an extracellular element, while potassium is an intracellular element.

Cell permeability refers to the ability of substances to move into or out of the cell by crossing the cell membrane. Sodium and potassium tend to increase the cell's exchanges along with the entrance of water-soluble toxins. Calcium and magnesium tend to reverse this situation. Thus, balancing these minerals ensures the correct degree of cell permeability, which is very important in maintaining good health.

NERVOUS SYSTEM PATTERNS

The autonomic nervous system consists of the sympathetic and parasympathetic branches, which regulate many functions in the body. The sympathetic branch activates the brain, muscles, the thyroid and adrenal glands. It operates primarily during the day, is associated with expending energy, and is catabolic (breaking down body tissues). It is also balanced by the parasympathetic branch, which is associated with the nurturing and regeneration of body tissues. The parasympathetic branch is restful, conserving of energy, and is anabolic or builds up new tissues. Healing requires that one spend sufficient time in a parasympathetic state to permit proper digestion, elimination of toxins, repairing, and rebuilding of the body. A person is more parasympathetic when relaxing, resting, or sleeping.

The calcium/phosphorus ratio on a hair mineral analysis is an indicator of an individual's autonomic state. Maintaining a proper balance between the sympathetic and parasympathetic branches is critical to healing.

INFLAMMATION

Inflammation is the body's normal reaction to an injury, disease, or the presence of a foreign substance. It is generally recognized by swelling, redness, heat, or possibly pain. Addressing the cause can reduce or terminate inflammation. If it is ignored, it can become a chronic disease. All diseases start with inflammation. Acute inflammation generally causes an increase in adrenal activity and a rise in the secretion of the hormone aldosterone ((sodium). Aldosterone is a pro-inflammatory hormone. Cortisol and cortisone (potassium) are anti-inflammatory hormones. The pro-inflammatory and anti-inflammatory hormones need to be in balance with each other for optimum health.

SYMPTOMS DENOTE IMBALANCES

Grey hair, a symptom of chronic fatigue and exhaustion, may indicate the chemical imbalance and involve too much calcium and zinc in the soft tissues and not enough manganese and iron.

Poor hair growth and hair loss are symptoms of a sodium/potassium inversion, which creates protein catabolism (breakdown), and sensitivity to the ingestion of sugar and simple carbohydrates.

High levels of copper and iron in the body tissue can cause migraine headaches as well as schizophrenia.

Mercury toxicity is linked to thyroid and adrenal gland dysfunction, kidney damage, hearing and vision loss, and birth defects.

Chromium, magnesium, manganese, zinc, and vitamin B6 deficiencies are related to diabetes. Obesity is frequently caused by chronic blood sugar problems. Chromium and zinc helps to regulate blood sugar levels. Obesity is frequently caused by chronic blood sugar problems. A zinc deficiency can diminish the sense of smell and taste. It can also retard bone development and produce malformed sex organs.

Lead or copper poisoning as well as zinc deficiency can cause acne.

Doctors often diagnose heart attacks by the amount of the mineral manganese in the body. Vitamin B6, folic acid, vitamin E, zinc, and chromium are important for women who take birth control pills.

A magnesium deficiency is related to epilepsy, leukemia, heart disease, and kidney disorders.

Beryllium, lead, cadmium, nickel, copper, and arsenic poisoning can cause cancer.

Many of the problems associated with manic depression can be alleviated with lithium, magnesium, iodine, EFA's in balance, and full spectrum light/sunshine.

Lead toxicity is linked to brain damage, lower I.Q., depression, behavioral problems, and multiple sclerosis.

Fluoride leaches lead out of pipes, which exacerbates the problem of lead toxicity. It also blocks the uptake and production of iodine in the thyroid gland. Adding it to water supplies is reckless and defies all logic. Birth defects, lower I.Q., obesity, depression, heart disease, bone loss, osteoarthritis, joint and bone pain, osteoporosis, thyroid disease, and some types of cancer are symptoms of iodine deficiency.

BIOCHEMICAL STAGES OF STRESS

Hans Selye, MD, the Canadian physician accredited with discovering the stress theory of disease, defined three biochemical stages of stress, which a hair analysis can assess.

ALARM – Fast oxidation, excessive adrenal and thyroid activity (inflammatory hormones), a high sodium/potassium ratio, high blood pressure and blood sugar, higher body temperature, more frequent bowel movements, and a dominant, sympathetic nervous system (part of the autonomic nervous system that tends to depress secretion, decrease the tone and contractility of smooth muscle, and causes the contraction of blood vessels). This is the early stage of stress where the body has adequate energy to fight back against the stress.

RESISTANCE - Mild to slow oxidation, reduced adrenal and thyroid activity (anti-inflammatory hormones), a sodium/potassium inversion and a dominant parasympathetic nervous system (part of the autonomic nervous system that has the opposite effect on body functions as the sympathetic nervous system). The body still has some energy reserves

available to resist the stress, though less than in the alarm stage. It is an endless battle in an attempt to contain the stress as it is unable to eliminate it.

EXHAUSTION – Very slow oxidation, low medullary adrenal hormones, increased cortisol, fatigue, depression, apathy, despair, constipation, dry skin and hair, adrenal exhaustion, less than optimal thyroid activity, low sodium/potassium levels, and a dominant parasympathetic nervous system. This stage occurs when the body has exhausted its energy levels and no longer has the necessary energy to contain the stress and is in a holding pattern to prevent further decline in health. This is the most common stage of stress among adults today.

According to Dr. Paul C. Eck, scientist and renowned pioneering mineral researcher, the slow oxidizer dies from mineral accumulation (e.g. calcification), while the fast oxidizer dies from mineral bankruptcy. And, the *Eck Institute Healthview Newsletter* reported that 95 percent of people die as slow oxidizers.

OXIDATION BALANCING

Oxidation is the process by which certain elements in the body chemically combine with oxygen. The oxidation rate is associated with the rate of metabolism and is largely due to the activity of the sympathetic nervous system. In addition, this process also affects the thyroid and adrenal glands to determine a slow, fast, mixed, or normal oxidizer.

If both the thyroid and adrenal glands are over active, a person will be a 'fast oxidizer' and needs to be 'hyped up' to keep going. This person functions at high speed until he or she suddenly collapses. With both glands under active, a person will be a 'slow oxidizer' and often feels tired. This person can be oversensitive, defensive, anxious, emotionally evasive, and may worry about what other people are thinking about him or her. However, if one of these glands is overactive and one is under active, a person will be a 'mixed oxidizer' and on an energy roller coaster. Each of these paths lead to premature aging and premature death.

Higher than normal calcium and magnesium levels and lower than normal sodium and potassium levels create the slow oxidizer profile with sluggish thyroid and adrenal glands. Along with balancing body chemistry and correcting the diet, a slow oxidizer will benefit by avoiding change, emotional confrontation, and stress. For a slow oxidizer, animal protein foods, vegetables, vitamins B-complex, C, and E, and iodine are recommended. Higher than normal sodium and potassium levels and lower than normal calcium and magnesium levels create the fast oxidizer with overactive thyroid and adrenal glands. To keep going, the body starts cannibalizing tissues for minerals. In this case, increasing protein intake is necessary, along with supplementation and correcting the diet to help balance body chemistry. Too much vitamins C, E, and B complex can make this pattern (fast oxidizer) worse because they raise the sodium and potassium levels even higher, which can bring a person closer to a heart attack. For a fast oxidizer, high quality fats, heavier proteins, calcium, magnesium, copper, zinc, vitamins A and D, choline, and inositol are recommended.

Balancing the mixed oxidizer (temporary state) requires professional assessment to determine if they lean towards a fast or slow oxidizer.

Dr. Paul C. Eck, made some important discoveries in using hair mineral analysis. Contrary to what one would expect, he found that giving a particular mineral may actually lead to a lowering of that mineral level if other synergistic minerals were not also provided in the right amount. For example, giving calcium to someone with low calcium would result in a lower

hair level of calcium because it upset the balance with magnesium. In order to raise a low calcium level, both magnesium and copper were needed in the right amount. Another example is that giving zinc doesn't always raise the zinc level because it lowers the sodium/potassium ratio. Balancing this critical ratio helps the body better utilize zinc.

The "balanced oxidizer" is happy, content, and open with an inner calm and steadiness. This person is also the most powerful and productive type of person. The goal of a mineral balancing program, which includes having a hair analysis, is to bring a person into a state of balanced oxidation.

DIET AND SUPPLEMENT BALANCING

Eating the wrong foods can be as damaging as taking the wrong supplements. Slow oxidizers should eat more lean protein, fruits, vegetables, high fiber; less fats, oils, and dairy; and no soy, refined carbohydrates or sugar. Fast oxidizers should eat a moderate amount of protein, various nuts and seeds; specific unrefined fats, oils, and dairy; high fiber vegetables and fruits; gluten free grains; and no refined carbohydrates or sugar. Eating for one's blood type enhances the outcome of every type of diet.

Supplements can be very beneficial, but taking them without knowing what the body needs may do more harm than good over the long-term. Too much of one element can be as detrimental as too little. Since each mineral in the body has an effect on every other mineral, if one mineral is out of balance, all other minerals are affected, which starts a chain reaction of mineral imbalances and illnesses.

For example, if a person takes an iron supplement, sodium and potassium levels increase; magnesium, calcium, and zinc levels decrease; nitrogen levels decrease (protein breaks down); copper levels decrease (at levels below 1.0, the person move into a cancer danger zone); and manganese levels increase. Manganese in balance with iron can make a person feel powerful – physically and emotionally, and also angry.

Determining mineral patterns, ratios, and levels is the basis of a good nutritional program and necessary for body chemistry balancing. Keep in mind that mineral ratios are more important than mineral levels. Also, toxic levels of metals such as lead, mercury, cadmium, copper, arsenic, and aluminum are also major factors in disrupting body chemistry.

As the body begins to balance its chemistry, it will get well in the reverse order of the way it became ill. This is called retracing. As chemical patterns retrace, prior illnesses may briefly repeat themselves. Emotions from past experiences are released during the retracing process. Retracing episodes are not side effects. They are metabolic corrections necessary for complete healing. Toxic metals released by the tissues, can cause a wide variety of reactions, such as emotional outbursts, skin rashes, headaches, and fatigue.

The time it takes to balance one's body chemistry depends on the degree of imbalance that exists, genetics, and how well the person follows a good program. It could take anywhere from several months to several years.

HAIR ANALYSIS FOR NUTRITIONAL PHYSIOLOGY

Since Nutritional physiology takes place at the cellular level (i.e. not within blood or urine), a hair tissue analysis provides the best information about cellular activity. It is also the least invasive and most cost-effective method of long-term tissue analysis.

What the body cells are assimilating is of great importance. Heavy metal toxicity, chronic deficiencies, thyroid and adrenal function, as well as the various stages of stress and metabolic imbalances can also be determined with hair analysis. Blood tests are valuable to determine cholesterol, haemoglobin levels, and other parameters. However, along with kinesiology and electro diagnosis, they can fluctuate from hour to hour. They are also incapable of providing the same information as hair analysis.

Hair analysis, which has been around for over 43 years, provides a long-term metabolic blueprint and is used in every industrial and university chemistry lab. It is one of the few methods approved by the Environmental Protection Agency for detecting toxic metals in the body.

Computer-controlled instruments make excellent hair analysis reliability possible. Some labs and procedures are better than others. *Analytical Research Lab*, a pioneer in this industry, is one of the most respected and experienced leaders in this field. They use the most advanced and sophisticated instrumentation available (Perkin Elmer Elmer 9000 ICP Mass Spectrometer) which is extremely accurate. ARL is also one of only two labs that does not wash the hair at the laboratory. Washing the hair has been shown to wash out the water-soluble elements. A hair mineral analysis can be obtained through a nutritionist or health practitioner who works with a lab.

FOOD, VITAMINS, AND BODY CHEMISTRY

In his informative book, "*Nutritional Balancing and Hair Mineral Analysis*" (L.D. Wilson consultants, Inc., 1990), Dr. Lawrence Wilson points out the effects some foods, minerals, and vitamins have on body chemistry as follows:

FOODS AND VITAMINS	EFFECTS
High-fat diet	Slows oxidation
High-purine intake: organ meats, sardines, Anchovies, herring, mackerel, salmon, tuna & wild game	Slows oxidation
High intake of raw cabbage, cauliflower, broccoli, & Brussels sprouts	Contributes to slow oxidation due to an anti-thyroid effect
Low-protein diet	Can slow the oxidation rate in the slow oxidizer
Vegetarian diet	Temporarily can increase the oxidation rate due to lower fat content. Eventually slows the oxidation rate due to a higher copper content & often a low zinc & B vitamin content
Intake of refined sugars	Increases the oxidation rate temporarily, but later contributes to burnout. Also, lowers zinc &

	copper, & can worsen the sodium/potassium ratio, as well as the calcium/magnesium ratio
High-salt intake	Contributes to fast oxidation
High-grain intake	Phytates (phosphorus compounds found in grains) can bind calcium magnesium, & zinc; contributes to faster oxidation
High-protein diet	Can lower calcium, & magnesium levels; promotes fast oxidation
Ingestion of too much tuna or swordfish	May raise mercury levels
Alcohol consumption	Lowers zinc, magnesium, & iodine
Margarine, artificial whipped creams & commercial peanut butter	Sources of nickel & perhaps cadmium used in processing
B complex vitamins, especially high doses of B1, B3, B5 (pantothenic acid), & B6	Increases oxidation
Bentonite & other clay products	May raise aluminum
Vitamin A	Lowers sodium
Vitamin C	Raises sodium & iron, lowers copper & toxic metals
Vitamin D	Raises calcium, favors slow oxidation
Vitamin E	Raises sodium

Since the skill of body chemistry balancing is quite complex and highly technical, it is best to work with a nutritionist or health practitioner who is knowledgeable in this field.