

THE OXIDATION TYPES - FAST AND SLOW



by Dr. Lawrence Wilson, MD

Introduction To Metabolic Typing. Metabolic typing is a very central concept in nutritional balancing science. However, metabolic typing is not familiar to most people because modern allopathic medicine does not focus on it. Many ancient healing systems embraced it, however.

The idea behind of metabolic typing is that often people display symptoms, illnesses, and hundreds of body traits in specific groupings or patterns. By identifying the metabolic types, one can immediately know a lot about a person in many, though not all cases. Astute physicians have observed this for centuries.

THE OXIDATION TYPES AND STAGES OF STRESS

This article focuses on a very modern biochemical classification of bodies. It is somewhat similar to the ancient concepts of yin and yang, but it is determined mathematically, which is a great advantage.

As a result, one can easily determine not only the oxidation type, but also the oxidation rate with precision. Older systems that do not use modern biochemical analysis methods cannot be as precise, and can often be vague.

WARNING: Before proceeding, I wish to clarify that some physicians determine the oxidation rate using blood tests, questionnaires and perhaps other means. They may also suggest different foods and nutrients for the oxidation types. This can be confusing, incorrect and even dangerous.

Everything written in this article and others on this website regarding the oxidation rate and oxidation types pertains to Dr. Paul Eck's method of assessment of the oxidation types using hair mineral analysis when the hair has not been washed at the laboratory. This is the only method and system of metabolic typing that I trust and use, as it has proven reliable and consistent in almost all cases.

One cannot use another method of determining the oxidation rate and expect that the information here will apply. Indeed, several of my clients were tested by other methods of oxidation assessment and were found to have very different oxidation types using these methods.

Simplicity, Not Perfection.

Also before proceeding, I wish to explain that the metabolic typing system referred to in this article appears quite simple. That is its virtue. It is also fairly accurate in most cases, but certainly not perfect. All metabolic typing systems suffer from this problem, however, because the body is basically not a "type", but rather each person is an individual.

Metabolic typing, however, has value because it appears to be a whole system behavior of the body. Whole system behaviors provide a tremendous amount of information at once, thus simplifying our assessment procedure and greatly assisting the recommending of diets, nutritional supplements and other procedures at times.

Also, balancing the oxidation rate, in our experience, appears to greatly enhance the healing of hundreds of symptoms at once, both physical and emotional ones. This most likely occurs because balancing the oxidation rate increases energy production or energy

efficiency of the body. It is like pedaling a bicycle at the right speed, which greatly enhances one's power and endurance.

In the body, it may have to do with specific requirements of thousands of enzymes that need an optimum physical and chemical environment in which to function best. If we can provide this, the body simply functions better with less stress, and, as a result, many symptoms improve easily without the need for remedies of any kind.

This is really quite amazing to see, and is one reason we do not need remedies in most cases to correct even the most difficult health conditions. This is the exact opposite of allopathic medicine in many cases, which depends upon remedies for various disease entities. In fact, it is very different from even holistic medicine, naturopathy and homeopathy, all of which depend upon the use of hundreds or more remedies for healing.

In contrast, the nutritional balancing method is to correct the whole system behaviors, of which the metabolic type is the main one. (Others are the diet, lifestyle, drinking water, several mineral ratios on a hair analysis, and a few simple nutritional deficiencies.) Then the 'details' of the body, or most symptoms, go away on their own without our needing to do anything at all.

A SHORT HISTORY OF THE OXIDATION TYPES

Dr. George Watson. The term 'oxidation types' was coined by George Watson, PhD, a researcher at UCLA. He wrote about his work in two fascinating small books entitled *Nutrition and Your Mind* (1972), and *Personality Strength and Psychochemical Energy* (1979). These are out of print but available through used book outlets including Amazon.com. They are extremely readable and must reading for anyone interested in the oxidation types.

Dr. Watson discovered two major metabolic types, first by using odor tests and later by using blood tests. He found that the blood pH of fast oxidizers was slightly more acidic

than that of slow oxidizers. He also found other differences in standard blood tests, such as the CO2 levels.

He also found that certain foods and nutrients benefited each metabolic type. He was able to correct the oxidation rate using diet and supplementary nutrients. This simple treatment often caused dramatic improvements in both his client's physical and emotional symptoms. This is as far as Dr. Watson went in his research, to the best of my knowledge. At least, he did not write other books.

Terminology. I use the term oxidation types and oxidation rate to honor Dr. Watson, even though the terms are not ideal. Some physicians call them fast and slow metabolizers, for example, but this is not much better, in my view. The oxidation types are extremely complex, so there is no simple term that can describe them adequately. The ancient Chinese terms yang and yin are probably best, but these terms are not used much in the West and are confusing as well.

Dr. Paul C. Eck. Dr. Eck was a physician and brilliant researcher and clinician who lived in Phoenix, Arizona most of his life. He was also my teacher and good friend. Dr. Eck did not write books, and was primarily a clinician and founder of Analytical Research Laboratories in Phoenix, Arizona, USA. I wrote about his work in Nutritional Balancing And Hair Mineral Analysis (1991, 1992, 1998, 2005, 2010).

Dr. Eck was thrilled to discover Dr. Watson's oxidation concepts. It helped him make sense of hair mineral tests and opened the way for a scientific method of interpretation of this test and much more. Dr. Eck extended Dr. Watson's work by making a startling correlation between the oxidation types and the stages of stress, as elucidated by Dr. Hans Selye, MD.

Dr. Hans Selye, MD. A Canadian physician, Dr. Selye is credited with the stress theory of disease, an amazing understanding of health and disease. Dr. Selye wrote The Stress of Life and about 1200 medical articles, as well as technical books such as Calciphylaxis.

His work on stress is monumental, but largely ignored. In part this is because it was very hard to apply clinically. Dr. Eck, however, found that the stage of stress, or at least an aspect of body chemistry related to it, could be assessed easily and rapidly with a hair tissue mineral analysis.

Dr. Selye also coined words we use commonly today such as homeostasis and elaborated what he called the General Adaptation Syndrome. This is ground-breaking work about how organisms always respond to stress. It involves the sympathetic nervous system, the role of the adrenal and thyroid glands in the stress response, and much more.

He theorized that all living organisms pass through three stages of stress before they die. He called these the alarm, resistance and exhaustion stages of stress. Dr. Selye further elaborated some of the biochemistry of each stage of stress.

Dr. Eck was able to see the intricate connections between Dr. Selye's stages of stress and Dr. Watson's oxidation types. He was able to figure out why Dr. Watson was able to help people with simple dietary suggestions and supplementary nutrients because he was addressing deep stress patterns in the organism. Dr. Watson was addressing the individual needs of his patients in terms of their stage of stress and the condition specifically of the adrenal and thyroid glands and the hypothalamic-pituitary axis, also called the HPA axis.

CORRELATING STAGES OF STRESS WITH OXIDATION TYPES

Essentially, fast and slow oxidation are homeostatic states and ways that the body responds to stress. The stress may be from within, such as nutrient deficiencies or fatigue. Stress may also arise from a multitude of external sources. Basically, slow oxidation correlates with a resistance or exhaustion stage of stress. Fast oxidation corresponds to an alarm stage of stress. In the ancient Chinese and macrobiotic typing

systems, fast oxidation corresponds to a more yang condition, while slow oxidation is a more yin condition of the body.

There is also a sub-oxidation state, so called by Dr. Watson, that most likely corresponds to Dr. Eck's four lows hair analysis pattern, when the hair has not been washed at the laboratory. This is a collapsed or "spinning the wheels" state of body chemistry that may be fast or slow oxidation, but has its own qualities as well.

DEFINITIONS OF THE OXIDATION TYPE AND THE OXIDATION RATE

Fast oxidation is defined on a properly performed hair mineral analysis when the calcium/potassium ratio less than about 4 AND when the sodium/magnesium ratio greater than about 4.17. The lower the calcium/potassium ratio or the higher the sodium/magnesium ratio, the faster the oxidation rate.

Slow oxidation is defined as a calcium/potassium ratio greater than about 4 and a sodium/magnesium ratio less than about 4.17. The higher the calcium/potassium ratio or the lower the sodium/magnesium ratio, the slower the oxidation rate.

The hair must not be washed at the laboratory in order to make an accurate determination of the oxidation type or stage of stress. This is a vital point, since most hair mineral laboratories in the United States and most around the world wash the hair in powerful detergents, alcohol, water or solvents. Only two laboratories do not wash the hair, Analytical Research Laboratories that Dr. Eck founded, and Trace Elements, Inc., founded by a student of Dr. Eck's.

SYMPATHETIC TONE AND FAST OXIDATION

Fast oxidizers have significant sympathetic nervous system tone. This, in part, accounts for their increased adrenal and thyroid glandular activity. Sympathetic nervous activity stimulates the activity of these two sets of glands. Understanding the relationship of the sympathetic nervous system with the glandular system is essential for a correct interpretation of the hair tissue test and for understanding many health conditions.

Fast oxidizers are in an early stage of stress in which their sympathetic nervous system is responding excessively. They are in a fight-or-flight mode too much of the time, which uses up many nutrients and leads to a set of symptoms and illnesses associated with this metabolic type.

INTRODUCTION TO SLOW OXIDATION

In slow oxidation, the activity of the adrenal and thyroid glands decreases. The glands themselves and at times the sympathetic nervous system are both basically depleted of nutrients and do not function well. It is more of an exhaustion stage of stress.

In part for this reason, slow oxidation is related to a parasympathetic state of body chemistry with less fight-or-flight activity. In almost all cases, the sympathetic nervous system is exhausted and the person moves into a parasympathetic state by default.

There is a common situation, however, which we call sympathetic dominance. In this common condition, the person is still attempting to use the sympathetic nervous system all the time. However, the body is exhausted and can no longer respond strongly. As a result, the person stays tired and often ill, because excessive sympathetic stimulation blocks or inhibits the activity of the immune system, digestive system, elimination system and other vital organs and systems needed for recovery of health.

This is a very important distinction that I have added to Dr. Eck's wealth of knowledge regarding hair analysis interpretation. It is displayed on a properly performed hair tissue mineral test that has not been washed at the laboratory as a potassium levels greater

than 1 and less than about 5 mg%. When the potassium is 1 mg% (10 parts per million) or below, the situation is quite critical.

Slow oxidation, especially when the rate is very slow, is an exhaustion stage of stress, according to Dr. Selye's stress theory of disease. Tissue sodium, you will recall, correlates well with the activity of aldosterone, an adrenal hormone. Thus, on a hair mineral analysis, slow oxidizers have low levels of sodium and potassium. Calcium and magnesium rise in the hair as the tissue sodium level decreases. This occurs, in part, due to reduced solubility of calcium that results when the tissue sodium level is low.

HOW THE OXIDATION TYPES AFFECT THE BODY

Frequency of Bowel Movements: Increased metabolic activity is associated with increased peristaltic activity and hence more frequent bowel movements in the fast oxidizer. Fast oxidizers may have more than one bowel movement per day. One or fewer movements per day is commonly associated with slow oxidation.

Dry or Oily Skin and Hair: Increased metabolic activity is associated with increased activity of the sebaceous and oil glands of the skin and scalp. This tends to cause more a greater tendency for oily skin and hair in the fast oxidizer. Slow oxidizers are more prone to dry skin and dry hair.

Also fast oxidizers tend to have a more watery appearance of their skin, and poorer muscle definition for this reason. Slow oxidizers may have better muscle definition and dryer appearance to their skin.

Also, fast oxidizers often have a more ruddy complexion. This may be due to higher blood pressure, use of alcohol or better circulation in the skin. This is true even though the sympathetic nervous system tends to move blood inward, away from the periphery of the body. However, many slow oxidizers are still in a sympathetic dominant condition described elsewhere, in which their sympathetic system is in fact even more active than in many fast oxidizers. This causes poor circulation to the extremities.

Blood Circulation: An increased rate of metabolism in the fast oxidizer is associated with enhanced blood circulation, and correlates with a tendency to warmer hands and feet, even in cold weather. Slow oxidation is commonly associated with impaired circulation and a tendency for cold hands and feet.

Food Cravings: Food cravings can express the body's desire to balance chemistry. Fast oxidizers tend to crave fats, butter and red meat, foods which slow the metabolic rate. They may also crave sweets or carbohydrates if they do not eat enough fats and oils. Slow oxidation is associated with chronic low blood sugar. There is a tendency for sweet cravings and at times salt cravings, as the body does not retain sodium and potassium as well in slow oxidation, due to impaired adrenal glandular activity. (low aldosterone).

Blood Pressure: Fast oxidation is associated with increased vascular (sympathetic) tone, and sodium retention due to elevated aldosterone levels. These frequently result in a blood pressure of 120/80 or greater. Fast oxidizers are also more prone to labile or changing high blood pressure. This is because greater sympathetic nervous system activity will cause momentary constriction of the arteries due to fatigue, emotional upset or other stressors. Healthy slow oxidizers tend to have blood pressures of 120/80 or lower. This is due to weaker vascular tone, and/or low sodium levels which cause a reduced blood volume and blood pressure. However, slow oxidizers are prone to hardening of the arteries, as are fast oxidizers. This can cause high blood pressure later in life, in particular.

Sweating: Enhanced metabolic activity increases the generation of heat in body tissues. This is associated with increased sweating in the fast oxidizer. Slow oxidizers generally sweat less, and many hardly sweat at all.

Mood: In fast oxidation, all metabolic processes speed up, including mental functioning. This can result in a tendency to anxiety, irritability, nervousness, or jitteriness. Slower mental activity in the slow oxidizer, on the other hand, causes a tendency for sluggishness, lethargy, apathy, and depression. Very slow oxidation is associated with despair, brain fog and confusion.

Energy Level: A fast metabolic rate, within certain limits, is associated with higher energy levels than is a slow oxidation rate. Fatigue and lethargy can be experienced by both types, but is more common with slow oxidation.

Animal Protein Preference: Fast oxidizers require more fat, and tend to prefer red meats to other meats, as they contain a higher percentage of fat. Fast oxidizers may also prefer the high-purine proteins such as sardines, anchovies and organ meats. Slow oxidizers tend to prefer chicken, fish, or vegetarian proteins because these low-fat sources of protein speed up and normalize the slow oxidizers' metabolic rate. They are

also easier to digest as they contain less fat. They also contain somewhat less etheric energy and thus have a lower dynamic action than the red meats.

Body Shape: Classically, the fast oxidizer corresponds to a more 'Cushinoid' body shape, so named after an illness called Cushing's disease. The person is not as tall, and is broad in the middle.

This is sometimes called the apple-shaped body. The legs and arms are thinner. There may be a "buffalo hump" in the back if the case is extreme, though most of the time this is not present. There is often a bulge in the belly. This is due to high cortisol, which in turn causes high insulin, which deposits fat in the belly area. The classic slow oxidizer has a pear-shaped body, especially later in life. This is due to sluggish thyroid gland activity, which is more associated with fat deposition on the hips and legs. The upper body is often thinner.

However, combinations of these two are very common, because people pass through various stages of stress at different times of their lives. Also, one can be a mixed type, which also gives rise to combinations of body shapes.

One final note regarding body shapes is in order. The sympathetic dominant person often has a very angular body. That is, there is little fat deposition. This is basically good, though if the sympathetic dominance persists, serious health problems including heart disease, cancer and others develop in these individuals as well.

This is seen in women, particularly, who are what is called progesterone dominant. Estrogen is responsible for fat deposition, especially in the hips and breast areas. Women with low estrogen tend to be more angular.

Women with higher estrogen levels tend to be more curvy, fleshy and at times one calls them more voluptuous shaped.

Caution: Beware of using body shape or other physical characteristics to assign a metabolic type to anyone or to recommend a nutrition program. Many times you are viewing a person as they were some years ago, in terms of their body chemistry. I tried this for several months and found the hair mineral analysis did not correlate with my guesswork based on symptoms and body characteristics.

I also found the hair test gave me more accurate information than just using the symptoms or signs described above. I learned through the experience to trust the hair tissue mineral analysis and began to get far better results with patients.

Cell Membrane Permeability: Fast oxidizers tend to have more permeable cell membranes than slow oxidizers. This may be because calcium that builds up in the tissues of slow oxidizers tends to stabilize cell membrane potentials. This fact is very

important for hormone imbalances, in particular, and perhaps for blood sugar and other types of metabolic problems as well.

Acid or Alkaline: Fast oxidizers tend to be more alkaline at the cellular level, while slow oxidizers tend to be more acidic at the cellular level. Blood, urine and saliva pH levels do not correlate well with the cellular level and are often useless for determining the true cellular acidity.

The reasons for the differences between fast and slow oxidizers is that fast oxidizers have less toxic metals, in general, which are very acidic. They also have far better alkaline mineral reserves, in general, than slow oxidizers. This is likely the major factor.

Slow oxidizers also have more biounavailable calcium that does not seem to neutralize acids as well in the body. In addition, slow oxidizers tend to have more infections, which tend to be more acidic.

Yang and Yin: Fast oxidizers are usually much more yang, while slow oxidizers are more yin. This may sound esoteric, but it affects every area of human functioning. Yang is warmer, more contracted, more masculine, more ruddy or reddish with better circulation and in terms of psychology more aggressive and sexual.

Yin is colder, more ill, more expanded and tired, less aggressive, less sexual, and more pale or white with poorer circulation. This is a very brief description of yin and yang.

BASIC SUPPLEMENTS FOR FAST AND SLOW OXIDIZERS

Dr. Watson and Dr. Eck found that fast oxidizers need more of nutrients such as copper, zinc, choline, inositol, calcium and magnesium. They also do well on more of vitamins A and D. Vitamins B-complex and C are less beneficial and tend make fast oxidation worse in many cases.

Slow oxidizers need more of the B-complex and vitamins C and E. They usually do not need much copper. They do, however, need zinc and most often calcium and magnesium. Both types benefit from a digestive aid. We find that they both also need extra chromium, selenium and perhaps even a general mineral supplement.

When one combines the extensive research of Dr. Hans Selye, Dr. George Watson and Dr. Paul Eck, one begins to develop a very clear picture of the physiology and biochemistry of fast and slow oxidation.

By identifying these states quickly with a hair mineral analysis, one knows at a glance how a person is responding to stress biochemically. Then one can recommend the correct foods, nutrients, lifestyle changes and detoxification protocol to bring the body to balance and harmony. Balancing body chemistry in this manner results in a significant increase in cellular energy production. This allows healing to occur at a greatly increased rate.

We always seek to move a person from a lower energy and less optimum homeostatic state to a healthier state with higher energy. Slow oxidation, for example, is a lower energy state than fast oxidation. A balanced state, neither too fast nor too slow, is considered optimum. It is a condition in which the metabolism can speed up when needed, and yet at other times remain peacefully at rest.

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