**Measuring Wellness Website Content**

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# What is Measuring Wellness?

So your not ill, but how “well” are you. The degree of wellness can me measured. Measuring Wellness™ offers a proprietary analysis of basic laboratory blood chemistry that uncovers subtle imbalances in your health. Your metabolism is a sophisticated equilibrium that operates optimally when your blood chemistry is maintained within narrow ranges. When analytes deviate from these narrow ranges they become “subclinical defects”. We call them “subclinical” because they are not clinically recognized by western medicine to be defective. The symptoms of these imbalances are initially subtle best described by feeling suboptimal. However, if left untreated through simple lifestyle, dietary and supplementation, the subclinical defects progress into full-blown illness.

Recognizing that your body and its metabolism are like performance sports cars is the first big step toward wellness. You have the best performance and longevity with the correct maintenance.

Measuring Wellness looks at the following six health maintenance processes operating continually within your body:

Acid Stress

Anaerobic Tendency

Free Calcium

Protein metabolism

Inflammation

Toxin Exposure

Connective Tissue Strength

Oxidative Stress

# Here’s how Measuring Wellness works.

Measuring Wellness starts with you having blood drawn at your local laboratory. The laboratory performs a custom analysis on your blood. Measuring Wellness receives the results from the laboratory and performs the proprietary analysis. A customized treatment plan, based on your analysis, is developed specifically for you. You follow the lifestyle, dietary, and supplementation guidance that the treatment plan advocates. You feel better and your health improves.

It’s that simple.

(demonstrate this process with a visual diagram indicating retesting in 6mo)

# Whom can Measuring Wellness Benefit?

No matter what your goals, Measuring Wellness can help you achieve them.

## Measuring Performance

Whether you are a Weekend warrior, enthusiast, amateur or professional athlete, you’ll perform at their best and get the most enjoyment from exercise if your health is optimized. When you hit the gym, road or trails, optimal health will give you the most from your workouts. Because your metabolism is finely tuned, you will get more benefit from less working out. Notice significant gains in performance simply by supporting your metabolism and you will feel better while you do the activities you enjoy.

A single analyte deficiency or excess will influence your metabolism. Don’t let less-than-optimal health prevent you from performing at your best.

Feel your best and maximize your gains. Measure your Wellness.

## Measuring Restoration

Busy lives distract us from ourselves. Years of self-sacrifice and personal neglect take a toll on our metabolism. Refocus some of your valuable time on you and take the first step towards restoring your youthful self. Rest assured that those surrounding you will be thankful, as they will see a new, invigorated you. Our diets, exposure to environmental toxins and numerous other factors gradually create imbalances in our metabolism. Balance is not difficult to restore, but it does require accurate measurement and our rededication to caring for ourselves. Simple lifestyle and dietary changes and supplementation are all that’s required.

You owe it to yourself and those around us to ensure we are at your best, inside and out.

## Measuring Longevity

What scares us about growing older is not age itself, but the our perception that advanced age comes with poor health. This paradigm does not have to be the case. By keeping your metabolism in optimal condition, aging is little more than extra birthdays to celebrate. You can keep you vigor, enthusiasm and mental acuity.

Measuring @ Work

Would you ask your staff to due less-than-perfect work? Would you request that they give less-than their best?

As an employer these questions would appear absurd. However, by leaving your staff’s wellness to chance, less-than their best is what you’re getting.

By offering this simple, voluntary benefit to your staff, you can ensure your company has the opportunity to reach it’s potential. Provide the opportunity for your staff to Measure their Wellness and see for yourself how staff performance, enthusiasm, and even relationships will improve.

Fatigue has very detrimental effects in the workplace. For example, even improving someone’s energy level can have a profound impact on the perception of their role, career, and those around them.

# Customized Analysis & Individualized Action Plans:

We diagnose and treat both disease and dysfunction, and offer a “concierge” type service that delivers personalized medical analysis, personalized treatment plans, and personalized service.

We help people design and integrate treatment plans that include both standard Western medicine and complimentary/alternative approaches.

We utilize supplements only when needed to correct a known deficiency or to promote an efficient physiology, and we provide a personalized dietary lifestyle that

Concierge service is only available for CO residents. Call Dr. Luce’s office for more information, and to get started.

# Six Health Maintenance Processes

The process of maintaining physiological balance in the body was termed ‘Homeostasis’ by the esteemed Harvard physiologist, Walter Cannon, almost 100 years ago. We all witness this every day in ourselves, our friends, and family. We get sick, sustain an injury, suffer an emotional trauma and yet our body always seems to ‘find a way’ to restore balance and become ‘healthy’ again. The study of the mechanisms that maintain our biological equilibrium is called Physiology.

Doctors study how physiology works in a healthy state. Every system has its own checks and balances that work to keep its particular area in tip top shape. The heart and vascular system has extraordinary ways of altering how fast the heart beats; how high or low the blood pressure should be; and how fast and deep we must breathe in order to keep the correct amount of oxygen in our blood. Doctors then learn what happens when the system does not work correctly, and these are states of disease. This is called Pathology or Pathophysiology.

What are the most basic mechanisms the body uses to maintain homeostasis? What are these processes; how many are there; and how can we measure them? Are the homeostatic health maintenance processes the same for individual cells as for the body as a whole? Can you learn how well you maintain your own body and, if it is struggling, what you can do to help it?

While taking a very detailed, science-based course on biochemical nutrition (how to use basic biochemistry knowledge to find significant problems that either cause or contribute to symptoms/diseases), I met a man, Sam Queen, who quietly supplied the answer to these questions. Sam has spent his life studying laboratory science, medical science, physiology, and investigating all manner of health issues. He is one of the foremost nutritional experts in our country. He specializes in uncovering and reporting on the true “Realities of Health”. He is the man who taught us to evaluate an individual by looking at the 6 Homeostatic Health Processes in the body: Acid Stress; Aerobic/Anaerobic Metabolism; Calcium/Phosphate Metabolism; Healthy Inflammation; Connective Tissue Integrity; and Oxidative Stress.

The body, and these health maintenance processes, are all held together by a web of protein. Every disease process reveals defects in the functioning of these ‘Health Processes’. As the body moves from a state of Health into a state of Dysfunction, these processes become emerging sub-clinical defects. A state of dysfunction will reflect defects in the Health Processes that are less severe than those found in a full- blown disease. These ‘Health Processes’ can be measured through common blood chemistry parameters. They can be followed longitudinally over time. They will reflect improvements, deepening dysfunction, and guide treatment through balancing physiology.

## Acid Stress

The body works very, very hard to control the amount of acid. Acid is measured and discussed in terms of pH. The ideal pH of the body has been scientifically determined to be 7.4. The body works very hard to maintain itself as close to that level as possible. All of clinical chemistry is based on this concept of pH and its ideal level. Acid is controlled by compounds that are alkaline. The process is called buffering.

Acid stress worsens just about everything. It promotes calcification; worsens inflammation; promotes oxidative stress; creates anaerobic metabolism; and destabilizes connective tissues. Every disease process increases the acid stress in the body, and increased acid stress promotes the emergence and continuity of disease. Infections and cancer both like an acid environment. Proteins denature and do not function well in an acid environment. Poor food choices can certainly promote acid stress.  However, it is more often the presence of toxins in the system that creates ongoing acid day after day.

The body has 7 different mechanisms to help keep pH balanced. These are all reflected in blood chemistry. By analyzing the blood chemistry a physician can know which of the 7 buffering mechanisms are struggling and need support. Depending on the severity, interventions can occur.

Correcting acid stress is frequently done in relative silence. This means that you may not notice any obvious difference in symptoms or in your body. However, your chemistry is a very sensitive indicator of your success in controlling the tendency to become more acid. Said another way, uncorrected acid stress is the foundation of aging. Correcting and maintaining an ideal pH would then be the foundation of any anti-aging approach to wellness and health. Bottom line, every other health maintenance process is made better by monitoring and correcting acid stress.

## Anaerobic Tendency – Your body’s ability to operate aerobically

The body prefers to make energy using oxygen. This is called Aerobic Metabolism.  It is the most efficient method of creating energy from foods. You get a much higher return (you make MORE high energy phosphate bonds, ATP) when things are done aerobically. However, the body has the capacity to make energy without oxygen. This is called Anaerobic Metabolism. It is much less efficient. Put it this way, anaerobic metabolism is in the neighborhood of 5-6 times less efficient than aerobic metabolism. Would you rather make $35 or $5 on an investment? It is a ‘no brainer’ for the body.

However, there are times when the body has trouble being totally aerobic, and there are blood parameters that can reflect this. There are diseases that like things to be more anaerobic, cancer for instance. All infectious diseases like relatively more anaerobic conditions as the body cannot defend itself as well. There are also certain vitamin and mineral deficiencies that promote anaerobic conditions. All of these can be measured, followed, and frequently corrected.

Anaerobic conditions are promoted by acidosis, inflammation, and oxidative stress.  Thus, if blood parameters suggest that there is a struggle with being aerobic, one can influence this situation by correcting acid stress, balancing the inflammatory process, and reducing toxicity and oxidative stress. Your success and progress will then be reflected in subsequent blood chemistries, and your treatment/maintenance plan will change accordingly.

You learn how to be more in control of your own health. You learn the best maintenance program for you as an individual. You can follow your personal state of balance for the rest of your life!

## Free Calcium Excess

Calcium balance is absolutely crucial for your health and wellness. Calcium is the only mineral that has its very own glandular system devoted to maintaining its balance: the parathyroid glands. Why is the balance of calcium so important? We mostly think of calcium in terms of bone loss as we age and with arthritis or coronary artery calcification. Yet, every muscle contraction and every nerve impulse in your body depends totally on the proper calcium physiology.

Calcium exists either bound to proteins or as ionized (free/non-protein bound) calcium. Think of it like most of the calcium rides on a bus (protein bound) while the rest of the calcium walks as a pedestrian (free). It is kept in a tight ratio. Calcium also depends on phosphate, and the proper ratio of calcium:phosphate in the blood is 1:2.5. Thus, if the ideal calcium is 10.0, the ideal phosphate level is 4.0.

Information is delivered to the cells via calcium that can enter cells through special doors on the cell membrane. If you have too much calcium things can get overcrowded, and the opposite problem occurs if there is too little calcium. The other interesting thing about calcium is that it is the body’s band-aid for chronic inflammation. Chronic inflammation creates destruction of connective tissues, and the body responds by depositing calcium to try and strengthen the tissue. This is what happens in arthritic joints and inflamed coronary arteries.

It is important not to over supplement with calcium. As long as the ratio of calcium to phosphate is balanced, it is safe to supplement with calcium. However, if phosphate is deficient or low (this occurs in states of extreme acid stress), you need to be very careful with supplementing calcium. Over-supplementation of calcium could lead to an excess of ionized (free) calcium, and that can tend to promote tissue deposition of calcium.

## Protein metabolism

Your body is literally held together by a web of protein. Proteins are constructed from amino acids. The supply of amino acids in the body is tightly tregulated and monitored. Your body demands that you have a certain level of amino acids available for the synthesis of new proteins. Amino acids come from two sources: diet and the recycling of worn out proteins in the body.

Most people thing that they will be protein deficient only in they do not eat enough protein. Consequently, if they eat enough protein they must have adequate protein. However, what if they cannot digest well or if they have inflammation in their intestines that prevents the absorption of the amino acids? If you have symptoms in your intestinal tract, you probably have problems with absorption. Diet accounts for 33% of you amino acid needs.

Recycling protein requires the presence of active protease enzymes. These enzymes unzip a worn out protein thereby releasing the amino acids back into the amino acid pool of the body. Toxins can negatively impact protease enzyme activity. This results in sluggish recycling and traps lots of proteins in a kind of never-never land where they cannot be used. Recycling accounts for 66% of the amino acids in the body’s amino acids pool.

Your body has two very general types of proteins: structural and metabolic. The structural proteins give from and function to the physical body: they are the form-defining tissues of the body: bone matrix, cartilage, muscles, connective tissues, ligaments, fascia, and tendons. Metabolic proteins are how the body communicates with itself. They include nucleic acids, neurotransmitters, enzymes, and hormones. Deficits in amino acids will eventually lead to problems with all types of metabolic proteins.

## Inflammation

Inflammation is above all a health maintenance process. Its study occupies the whole area of medicine known as immunology. It cannot be measured directly by a single specific laboratory test, but is viewed through many different parameters, much like looking at the US economy through various economic indicators. The higher the levels of the various indicators, the more inflammation the body struggles to control. There are 14 parameters of inflammation, and they must be looked at as a package.

As a cornerstone process of both wellness and disease, inflammation is a physiological constant and serves 4 major wellness functions: it repairs tissue; kills invading microbes of all types (viruses, bacteria, fungi, parasites, etc.); kills cancer cells; and helps eliminate toxins. In wellness, inflammation turns on, accomplishes its task, and then turns off. Its operation can be paralleled to that of an efficient road crew that is called out to fix a pothole. The crew comes, does the repair with minimal traffic disruption, and then leaves. In the body, inflammation turns on through well- known mechanisms (injury, infection, cancer, toxic exposure, etc.) and its presence is reflected in various laboratory tests. Some of these include WBC, ESR, CRP, LFT’s to name but a few.

Chronic inflammation is present in every disease. It is inflammation that is out of control, and does not turn off. Following our analogy, imagine an out-of-control highway department. It sends a crew to repair a large pothole. The crew arrives, sets up, and before it can make the repair and leave, the highway department sends more crews. Eventually there are so many crews working that traffic is not only disrupted, but the street may be closed altogether. Similarly, chronic, out-of-control inflammation spreads and increasingly disrupts bodily functions.

Chronic inflammation causes increased acid stress; an increase in oxidative stress and free radical production; and connective tissue destruction. One of the responses to chronic inflammation is the deposition of calcium in tissues. This is done to reinforce the integrity and strength of the tissues. Inflammation can be controlled by bringing balance to the other functions that fuel this process – infections; acidosis; oxidative stress. Through the knowledge gleaned from laboratory testing, appropriate interventions can be identified to re-balance the system.

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## Toxin Exposure

## Connective Tissue Strength

Connective tissues connect the body together. Healthy connective tissue reflects in smooth skin, strong muscles, strong bone matrix, and healthy amounts of cartilage in joints. It is an unappreciated property of youth and, usually is not appreciated fully until it is gone. Healthy connective tissue is the focus of much, if not most, of the “anti-aging” health promotion. Plastic surgery, joint replacements, and literally hundreds of magic creams all promise the hope of the vibrant return of healthy connective tissue. As is usual in most things health-related, an ounce of prevention is worth a pound of cure if preservation or restoration of healthy connective tissue is your goal.

Connective tissues comprise a large branch of the structural proteins of the body. Composed of proteins, amino acids, and other compounds such as glucosamine and hyaluronic acid, their strength reflects the balance of bodily protein. Alternatively, imbalances in other basic physiologic processes will result in weakened connective tissues. Thus, increased acid stress, inflammation, toxicity, and anaerobic metabolism will all undermine the strength of the connective tissues.

Connective tissue that is infirm forms an atmosphere for latent bacterial infection. Small amounts of bacteria can survive in a latent state in connective tissue and cause smoldering destruction with the possibility of erupting into a larger ‘fire’ in the future. Weakened connective tissues mean a structurally weak body. One of the body’s major responses to structural weakness is to put down calcium. The calcium acts to strengthen tissues, like putting a structural reinforcement in a weakened building. And, the body uses protein from the connective tissues to supply amino acids in times of protein deficiency.

As with all of the homeostatic processes, there are multiple detectors that reflect the balance or imbalance of the connective tissues. Many of these are obvious such as X-rays and CT Scans. However, it is the more subtle parameters of chemistry that can warn an individual if their connective tissue is under attack.

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## Oxidation

Oxidative Stress can be likened to ‘biological rusting’. Oxidative stress is part of life, all life. It is the process that causes us to age. It involves one molecule taking an electron (oxidation) from another molecule. It happens literally billions of times every second in your body. When a molecule loses one of its electrons, this changes the chemistry and shape of the molecule, and therefore can alter its function. How does our body deal with this?

Antioxidants can be thought of as floating bags of electrons. We get them in foods and in supplements. Different antioxidants are found in different environments within the body – vitamin E works in a different locale than does vitamin C. When a reaction of oxidation occurs, an antioxidant in the area can stop the damage by donating an electron to the molecule that just had its electron stolen. Think of it this way: oxidation is like having the pin pulled from a hand grenade, and then the antioxidants go and put the pin back into the grenade before it can blow up!

Oxidative stress is part of normal biology. It occurs with exercise; when making energy in every mitochondria in every cell; during digestion; from sunlight; and with many other processes. It is increased with exposure to toxins, increased inflammation, increased acidosis, and with every disease. The process of Oxidative Stress produces molecules called ‘Free Radicals’; they are special because they are missing electrons. They need the electrons to stabilize themselves and that is why they search for them, and the process of oxidation occurs.

When we are young, most of us have balanced oxidative stress. We have a lot of antioxidants to quiet the needs of the free radicals. As we age, and our exposure to toxins, infections, chemicals, etc. increases, our supply of antioxidants slowly cannot keep up with the demand. The oxidative stress in our bodies then begins to become dominant, and we age more quickly.

You can follow oxidative stress through blood chemistry. There are many parameters that reflect the strength of the oxidative stress in our body and our ability to control it. Controlling oxidative stress is the foundation of any serious anti-aging effort.  However, as with all things biological, the key is balance. Measure the levels of your anti-oxidants. Measure the amount of the oxidative stress in your system.  Find out how your individual body struggles, and then supply specifically what it needs.