

CHAPTER 2

THE FIVE FUNDAMENTAL BALANCES

Introduction

We have set as our goal the ability to define function vs. dysfunction in every metabolic control system. This may sound absurdly unrealistic to you. After all, there are thousands upon thousands of biochemical reactions occurring in the human body. How can we possibly give each a clinically significant definition?

Fortunately, these thousands of biochemical reactions do not occur independently. In fact, they are so interdependent that each occurs only in conjunction with many others, and only under the direction of a fundamental control system. In the interest of clinical efficacy we need not be concerned with each of the thousands of individual biochemical reactions, only with those control systems.

NUTRI-SPEC defines five such control systems. We call them "The Five Fundamental Metabolic Balances." They are as follows:

- Electrolyte/ Water Balance
- Anaerobic/Dysaerobic Balance
- Glucogenic/Ketogenic Balance
- Sympathetic/Parasympathetic Balance
- Acid/Alkaline Balance

Your goal as a Metabolic Therapist is to analyze your patients in terms of Metabolic Imbalances --- using a set of easily administered objective test procedures

A Dualistic, Diphasic Model of Physiological Processes

What we are presenting here with this idea of Metabolic Balance systems is a dualistic, diphasic model of physiological processes. To visualize what we mean by this, picture any biochemical or physiological quality which must be maintained in homeostasis --- body temperature for instance --- which has a theoretical normal of 98.6, but which in fact, fluctuates continually above and below the normal over time. This is an example of a dualistic, diphasic system in operation.

Dualism is defined, then, as an oscillatory dynamic balance resulting from the alternate operation of opposed forces. The forces employed are the various biochemical, neurological, endocrine and exocrine functions. So, in maintaining body temperature homeostasis, the forces that elevate temperature operate until a certain point is reached, at which time they shut off and the forces that lower body temperature take over.

To better illustrate this concept of alternating opposed forces we can use the simple analogy of two children on a seesaw. The position of the seesaw is seen to vary between two extremes equidistant from the horizontal position. The movement of the seesaw does not, however, represent an average of the simultaneous efforts of the two children. Rather, it represents the force of one child's efforts acting independently, followed by the independent action of the opposing child. There is a phase during which the one child's efforts are operational, followed by a phase when the other child's efforts are operational.

This model applies to body temperature, to blood pressure, to electrolyte levels, to sugar levels, to enzyme production --- to every biochemical or physiological quality. Furthermore, each of these groups of forces operates under the direction of one or more of the fundamental metabolic control systems, that is, one or more of the Five Fundamental Balances. It is essential to note also that each of the Five Fundamental Balances is, in itself, a dualistic, diphasic system.

From a nutritionist's point of view it is important to realize that air, water and food must be supplied in proper quantity, quality, proportion and timing that the Fundamental Balances be maintained. It is even more essential to recognize, for the purposes of the NUTRI-SPEC system, that for each normal condition, **two opposite abnormalities are possible**. In other words, when considering blood sugar levels we may see either high blood sugar or low; when considering Acid/Alkaline Balance we may see either excess acidity or excess alkalinity.

For the practical purposes of Metabolic Therapy, the NUTRI-SPEC system states that **all normal physiological processes** involve the operation of one or more of the Fundamental Balances as the means to maintain homeostasis. Essentially, then, we have five seesaws going simultaneously; and this "balancing act" is what maintaining health is largely about.

The corollary to this statement on maintaining homeostasis is that **patho-physiology** involves a loss of homeostasis associated with aberration in one or more of the Fundamental Balances. And an extension of that statement is that **pathology** reflects dysfunction in the Fundamental Balances of sufficient intensity or duration to cause tissue destruction or degeneration. ----- Patho-physiology occurs in association with the inflammation of what NUTRI-SPEC practitioners call Immuno-Neuro-Endocrine Stress (INE Stress).

Simply, all your patients have some involvement of the Five Fundamental Balances. Maintaining their health requires restoring the Five Fundamental Balances. To a large extent, that is the essence of the NUTRI-SPEC system ----- defining **specifically** the patterns of Metabolic Imbalance that exist in a patient; then instituting NUTRI-SPEC procedures to restore balance.

Look at the graph in Figure 1. It illustrates the diphasic nature of physiological processes. In particular, it shows the oscillatory dynamic balance resulting from the alternate operation of opposing physiological forces. This happens to be a graph illustrating the diphasic movement of the Anaerobic/Dysaerobic fundamental balance system. It could just as well be a graph of body temperature, of blood sugar, or of any other biochemical or physiological quality.

In a healthy body there is no such thing as a steady state. Everything cycles up and down and up and down. This graph shows how we all tend to cycle into the Anaerobic phase, then into the Dysaerobic phase through time.

The horizontal line B in this graph represents the theoretical balanced point. But, as we said, there is no such thing in the body as a steady state. The dotted lines n represent the limits of a normal, healthy Anaerobic/Dysaerobic cycle. Dysaerobic forces predominate until the normal limits of Dysaerobic activity are reached, at which time the Dysaerobic forces switch off, Anaerobic forces switch on, and the person moves out of the Dysaerobic phase and into the Anaerobic phase of metabolism until the limits of normal Anaerobic activity are reached.

Note that normal healthy people spend virtually all their time within the normal limits defined by the n lines. Note also the uniformity of these cycles in time. In other words, the length of time from Anaerobic peak to Anaerobic peak and from Dysaerobic trough to Dysaerobic trough is pretty consistent. Again, this is what we mean by the oscillatory dynamic balance resulting from the alternate operation of opposing forces.

Health problems invariably occur when a person cannot maintain this diphasic movement. Look at Figure 2. This is another illustration of Anaerobic/Dysaerobic cycles, but note that this person is "stuck" in the Dysaerobic phase. There is an inability to put together enough Anaerobic forces to maintain a normal Anaerobic/Dysaerobic cycle. This patient is particularly likely to manifest symptoms associated with a Dysaerobic Imbalance during those periods when the graph is outside the n line for the Dysaerobic phase.

If you were to do your NUTRI-SPEC testing on this patient you would find the test results conform nicely to the Dysaerobic pattern of Metabolic Imbalance. You would then give the patient the dietary recommendations and nutrition supplements essential to reverse this Dysaerobic pattern of test results, thus enabling the patient to cycle normally. Note that your recommendations for this patient with a Dysaerobic test pattern disregard symptoms altogether. Here we see that Key Concept of NUTRI-SPEC --- you are offering your patients a patient-specific, not a disease-specific Metabolic Therapy.

What about causative factors? What causes a loss of fundamental balance? Causative factors fall into two categories, innate and acquired. By innate factors we simply mean that many people are born with a tendency to shift into a certain phase with respect to one or more of the Five Fundamental Balances. That tendency may be truly genetic, or it may have been acquired in utero due to aberrations in the trophic influence of the mother on the fetus. Once your NUTRI-SPEC testing has identified a Fundamental Imbalance in such patients, they will need to follow the dietary and supplement regimen for that imbalance to some degree for the rest of their lives.

Acquired causative factors are the cumulative effects of environmental inputs on that patient since birth. In a very broad sense, there is only one acquired cause --- Immuno-Neuro-Endocrine Stress. Loss of fundamental balance involves a **stress input** that exceeds the normal elastic limits of the homeostatic balance mechanisms. In other words, a stress input which tips the seesaw too far too fast.

Following is a list of six stressors:

- a) Psychic (mental, emotional, spiritual)
- b) Chemical (toxic substances, anti-nutritional dietary excesses)
- c) Nutritional (insufficient quantity or quality)
- d) Physical (neuro-muscular, structural, traumatic, degenerative)
- e) Electro-magnetic (insufficient Zeta Potential & Liquid Crystalline Water, X-ray, microwave, geomagnetic, etc.)

Patients with these acquired causes of their fundamental imbalances will tend to respond quite quickly to your NUTRI-SPEC therapy. In many cases the imbalances can be corrected not only quickly but permanently, and the patients can come off the supplements and diet you recommend. However, if INE Stress is ongoing in their lives then they either need to confront that stress factor (for example, an emotional stress), or expect to remain on their NUTRI-SPEC regimen indefinitely, to maintain a healthy balance despite the unusually heavy stress load.

In summary, the Five Metabolic Control Systems determine how efficiently each patient's body and mind work. They control energy production; they influence the healthy function of the heart and circulation; they influence the healthy function of the brain and nervous system; they influence the efficiency of digestion and assimilation of nutrients; they influence the chemical balance in the blood and in the cells; they help regulate healthy hormone balance; they help to efficiently eliminate the toxic waste products of metabolism; and, they maximize health during the aging process.

In other words, these Five Fundamental Metabolic Control systems are the engines that drive body and mind. When these engines are working efficiently, we move through life with strength and vitality. When one or more of these control systems loses efficiency, body and mind simply cannot perform at their best. When the Metabolic Imbalance is severe enough or exists for a prolonged time, pathological changes occur and we suffer fading health --- from oxidative free radical inflammation and reductive inflammation = and ultimately, INFLAM-AGING

And what specific problems does your NUTRI-SPEC metabolic balancing address? Each of the Metabolic Imbalances found in a patient disables his ability to perform the following essential functions:

- a. maintain glycemic control
- b. maintain normal oxidative metabolism
- c. maintain ideal pH
- d. maintain ideal concentrations of electrolytes and biologically active water
- e. maintain detoxification and regeneration

How important are these five essential functions? They are the whole story. If you are talking about health --- they are the difference between “Living Stronger Longer” and being sicker-quicker = the difference between **Metabolic Balance** and **INFLAM-AGING**.

Look briefly at what these five essential functions mean to your patients’ health:

a. **Maintain glyceemic control.** Glyceemic control is all about the ability to maintain normal blood sugar levels and normal brain sugar levels. All of your 5 metabolic control systems are involved in glyceemic control.

When your patients lose glyceemic control they suffer to some extent from either hypoglycemia or diabetes or Dysinsulinism. All three of these conditions have a major impact on how they feel and how they look. But more than that, poor glyceemic control is tied in with a breakdown in many body systems.

Now, look at Glyceemic Control in the light of what you have just learned about NUTRI-SPEC. Does it make sense for people to take remedies or drugs to “treat” symptoms without making any attempt to restore glyceemic control?

Chronic fatigue is almost invariably associated with poor glyceemic control. Does it make sense to take stimulants to give the illusion of increased energy when the lack of energy is due to poor glyceemic control? The only way patients can maintain healthy vitality is to restore normal blood and brain sugar levels -- and the only way to do that is by restoring balance to the Five NUTRI-SPEC Metabolic Control Systems.

b. **Maintain normal oxidative metabolism.** Every cell in the body produces its energy with oxygen. In the state of health, sufficient oxidative energy production occurs in each cell to perform its essential functions, while at the same time excessive free radical oxidation is minimized. Your goal, of course, is for each of your patient’s cells to produce enough oxidative energy to keep those cells humming happily and healthfully, with no concern about the INFLAM-AGING that occurs when oxidation gets out of control.

In NUTRI-SPEC terms that means the patient wants to be eating just the foods that his body oxidizes most efficiently, while avoiding the foods that will oxidize out of control. He also needs just the vitamins, minerals, trace minerals and amino acids that will act as oxidants to keep his body highly charged with energy, while at the same time taking just the right types and quantities of antioxidants to protect from free radical damage.

What is this ideal balance between oxidants and antioxidants? It is different for every individual. Only NUTRI-SPEC can determine what balance is correct for each of your patients.

c. **Maintain ideal pH.** There is a very narrow range of pH that is ideal for the blood; an ideal pH range that is ideal for the tissue fluids; and an ideal pH within the cells. Maintaining Ideal pH in all 3 body fluid compartments is a fundamental component of Living Stronger Longer.

Your patients may be too alkaline or too acid in any one or more of these three body fluid compartments. Furthermore, they can be too alkaline in one area while at the same time being too acid in another. NUTRI-SPEC is the only means to determine where they may have abnormal pH, why that pH is abnormal, and what exactly must be done in the way of diet and supplementation to correct the abnormal pH's.

d. Maintain ideal concentrations of electrolytes and biologically active water. Not only must the blood, the interstitium, and the cells all maintain normal pH – each of these compartments must also maintain balance between electrolytes and the several stages of biologically active water. Each of the NUTRI-SPEC Five Metabolic Control Systems influences electrolyte and water movements within and between these three body fluid compartments by increasing Zeta Potential and the formation of Liquid Crystalline Water. Correcting each patient's NUTRI-SPEC Metabolic Imbalances will move the electrolytes and bio-active water to exactly where they are deficient. This state of balance will facilitate the movement of nutrients and waste products into and out of all cells. It is a fundamental requirement of maximizing health --- a strong resistance to INE Stress.

e. Maintain detoxification and regeneration. Detoxification and regeneration require metabolic energy --- the Vital Reserves to generate the Adaptative Capacity required to Live Stronger Longer in the face of INE Stress.

What you are learning is that if you maintain in your patients' normal glycemic control, normal oxidation, normal pH, and normal flow and concentration of electrolytes and water, then they will be in a state of health. Their Adaptative Capacity and vitality will be at a level approaching their innate potential. Only as a NUTRI-SPEC practitioner can you show the way for each patient. When you have so empowered your patients you will have done everything for their health you can do metabolically.

Once you are accustomed to so empowering your patients, you will scoff at the idea of giving remedies for this and that condition --- as so many doctors do in a disease-specific desperate attempt to control symptoms --- without any regard to the cause of those symptoms.

The goal of your NUTRI-SPEC clinical procedures is to restore balance to your patients' metabolic control systems, thus increasing their Adaptative Capacity. The result will be more efficient handling of Immuno-Neuro-Endocrine Stress, a high level of vitality, while minimizing INFLAM-AGING.

LIVE STRONGER LONGER