

January 1997 Issue | Miklos Boczko, M.D.

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We begin 1997 by renaming *Preventive Medicine Update*. From now on this publication will be known as *Functional Medicine Update*.

The reason for the name change is that we have witnessed an evolution beyond prevention to individualized, biochemically tailored functional medical approaches to health care. Preventive medicine now refers to public health-related concepts of lowering cholesterol, limiting salt intake, blood pressure management, alcohol and smoking cessation or limitation, and weight management, general public health considerations that relate to improving health and reducing risk of disease.

Over the last 10 years, however, this concept has been extended to the care of individuals, because we know that not everyone benefits to the same extent from a low-fat, low-cholesterol diet. Not everyone benefits from a low-sodium diet as it relates to blood pressure control. Not everyone benefits from rigorous exclusion of dietary cholesterol. Therefore, in the last decade in *Preventive Medicine Update*, and in the practice of medicine, we began to take a serious look at individually tailored programs based on genetic needs and uniqueness.

We have evolved beyond prevention, in the traditional sense of public health-related indicators for risk, to functional programs based on the individual's need to enhance functionality of organ systems, improve organ reserve, control chronic conditions, and, ultimately, to increase life expectancy and life span.

Functional medicine has been defined as the field of health care that employs assessment and early intervention to improve physiological, cognitive/emotional, and physical function. It encourages practitioners in various fields to bring the best of their knowledge to enhance and improve the functional integrity throughout the life cycle of individuals.

Functional Medicine is also a field of health care that uses new functional assessment tools and challenge testing to assess reserve rather than endpoint analysis of fasting blood samples or conditions.

In the practice of functional medicine, we look at the molecular and physiological fabric of a person as it relates to his or her reserve, which can be mobilized under conditions of stress or need. Individuals with compromised reserve, as Dr. James Fries pointed out in his landmark work at Stanford Medical School, are at increased risk of age-dependent diseases, and that translates to increased biological age. The focus of functional medicine, therefore, is to assess and improve functional integrity of organ systems and treat the body as a homeodynamic interconnected series of organ systems in constant dynamic interaction with their environment and, in so doing, bring about some kind of control, which we call homeostasis, against

the changing environment.

Extending health to age 70, 80, and beyond depends upon maintenance of organ reserve and homeodynamic balance. The more metabolic energy resources a person has, the more stable his or her system will be. It can be compared to wires to a generator. If you lose a wire or two along the way and you have multiple connections between your energy source and your energy need, you still have a functionally stable system. That redundancy is what is found in a homeodynamic, functionally capable physiological system. Stress the individual or organism experiences that may place demands on one specific pathway will have other, collateral routes for moving around a block or through a situation of stress to maintain function.

We have explored these topics in *Preventive Medicine Update* during the recent years. We now need to redefine and focus our perspective for the future as we look toward managed self care and improved functional integrity throughout the life span. This is the reason for renaming this product *Functional Medicine Update*. We will, however, continue to make connections between prevention at the functional level and what we now call *Functional Medicine Update*

We will be hosting the Fourth International Symposium on Functional Medicine, May 14 - 17, 1997, at the Ritz Carlton resort in Aspen, Colorado. The title of the symposium is "Functional Modulation of Diseases Throughout the Life Cycle." Clearly, we are focusing on functional aspects of health and disease.

The first day's program will be a course on the fundamentals of functional medicine for individuals to learn about some of the assessment and intervention techniques that have been developed for the use and application of functional medicine.

The second day, Thursday, May 15, we look at endocrine imbalances and oxidative stress and its relation to insulin resistance. There will be a panel discussion, debate, and presentation on how various hormones interrelate throughout the aging cycle, how they participate in antioxidation, proper control of redox, or prooxidant conditions related to oxidative stress, and what to do about those problems in terms of clinical management, recognizing that one of the themes of accelerated biological aging is increased oxidative stress.

The program on the 16th will focus on the topic this month's Clinician of the Month will be referring to, the modification of genetic expression related to coronary heart disease and Alzheimer's disease through the E4 and E2 apolipoproteins. We will hear presentations on nitric oxide modulation and coronary heart disease and Alzheimer's disease, and how these genetic markers may be modified so they are not expressed as premature disease.

On the final day, Saturday, May 17, we will look at functional modulation of the immune system, with focuses on the GI and reticuloendothelial system and some of the new assessment techniques, and again on the interconnectedness among the immune, endocrine, and nervous systems. Each afternoon we will focus on workshops and "how-to" applications of the "whys" we discuss in the mornings. I strongly urge you to attend the Fourth International Symposium on Functional Medicine in May. I think you will find it a very informative meeting

Acid/base balance within systems, and its relationship to physiological function, is a seminal concept that relates equally to pathology-based medicine, preventive medicine, functional medicine, and complementary medicine. The metabolic event we call respiration produces a series of byproducts of metabolism, which are (in complete respiration) carbon dioxide, water, sulfate, phosphate, and urea.

How does glycosylated hemoglobin correlate with the oral glucose tolerance test? The "gold standard" for the diagnosis of diabetes and insulin insensitivity has been the oral glucose tolerance test and the glucose tolerance test with postprandial insulin. Recently, however, as reported in the *Lancet* (1997;339:223), there is increasing recognition that hemoglobin A_{1c} glycosylated hemoglobin levels at or above the upper 5 percent of normal are considered indicative of poor insulin sensitivity and glucose intolerance, and poor glucose regulation, or dysglycemia. This test, which we might have disregarded previously as having little clinical value, is proving to have significant potential value as a screening tool for insulin insensitivity. So, glycosylated hemoglobin, hemoglobin A_{1c} in the upper 5 percent of normal (between 6.4 and 7 percent glycosylated hemoglobin in the blood) indicates potential insulin insensitivity. One might wonder about looking at other shorter-term indicators rather than the 120 days of the red cell and its relationship to glycosylated hemoglobin. Why not look at glycosylated albumin, which has a much shorter lifetime? We *can* look at glycosylated albumin, which does give us a much closer timeline of dysglycemia and insulin insensitivity, but most labs don't routinely run glycosylated albumin; therefore, my suggestion from this data is that the more available and less expensive test for glycosylated hemoglobin, hemoglobin A_{1c}, might be considered useful.

For most of this century, consideration of acid/base physiology has included detailed presentation of the relationships in isolated blood, and the importance of change in pH in the system is emphasized. The large contribution of buffering by hemoglobin occurs as a strict function of change in pH, and most teaching diagrams give pH the position of primacy on the abscissa, suggesting that pH kind of stands over everything. But, maybe pH is more the effect than the cause, and we should be looking at other factors that actually relate to inter- and extracellular pH, including oxidoreductive balance, or what we call redox balance, membrane potential gradients that are controlled by membrane pumping, and ultimately the oxidative phosphorylation energy pump that drives the whole system.

INTERVIEW TRANSCRIPT

Clinician of the Month: .

Miklos Boczko, M.D

Dr. Miklos Boczko is a neurologist by training. He has been in private practice and is an adjunct medical professor in New York State with 40 years' experience in medicine. Dr. Boczko has experienced a series of evolutionary transformations in his own practice. Most recently, he has been focusing on environmental and nutritional applications in neurological disorders. This follows up a Clinician of the Month interview we had last year with Dr. Perlmutter, who spoke about his work as a neurologist in multiple sclerosis.

JB: Dr. Boczko, let's begin by asking what led to your interest in nutrition and environmental

relationships to neurological disorders?

MB: I have always had a broad interest in neurology and psychiatry, but in 1978 I read an article in the *Lancet* by a British neurologist named Grant, about food allergy and migraine. My whole family suffered from migraine, so I was always interested in this subject. In the 1960s I worked at the Migraine Clinic at Montefiore Hospital under Dr. Arnold Friedman.

As far back as the 1950s when I was still in Hungary I had read that an allergist was investigating the relationship of migraine and allergy. After reading Grant's article, I investigated 21 patients with migraine and came up with the same answers he did. I found that environmental factors, specifically foods, were triggers for migraine. My whole world changed. I became convinced that a large part of the environment had been excluded from orthodox medical thinking. Slowly, my interest changed to the broad environment. I have discovered through this experience that I have had serious problems for which I had no solutions or known causes.

In 1982 I found I had been exposed to DDT in the late 1940s in Hungary, and I had low-grade chronic chemical toxicity. That was probably related to many of the symptoms that I used to have but could not explain, including migraine. So from the early 1980s I became convinced that chemical sensitivity plays a very important part in the environment and assessment and management of patients. Being a neurologist, I applied all of this in my practice, with two effects. One was that I lost a lot of referrals because everyone thought I was crazy. Second, I was able to treat neurological disorders a lot more effectively than before. And, so, here I am

JB: Over the past 10 years you have written about some of the techniques you and your colleagues are using, including desensitization. The article on environmental desensitization you published a couple of years ago was one of the most lucid and informative articles that I have read on this topic. Could you tell us about this approach?

MB: My ideas about desensitization evolved over time. In the 1970s and early 1980s I used the usual advanced allergy desensitization, mainly the Miller method, intradermal testing, and subcutaneous injections for foods, inhalants, molds, etc.

But in 1983 I saw a TV broadcast on a Saturday morning on which this new computerized machine was shown by one of the prominent people in the field who was in Las Vegas. He showed that people's problems can be diagnosed with electroacupressure. I had the good fortune to meet a Connecticut naturopath who had the machinery. I found this electroacupressure technique for diagnosis is superb and superior to what we used to have because it is noninvasive. It is very rapid, and it can detect just about anything you want to look for, including environmental chemicals, heavy metals, neurotransmitters, other chemical messengers in your body, foods, hormones, etc.

When you make a diagnosis using this machine, you can fashion homeopathically desensitizing drops which the patients takes sublingually three times a day. The two of us have found in private study that we were able to desensitize two hydrocarbons that are very, very important. We chose only a few for the article, but we find, with the passage of time, and depending upon individual sensitivity, you can diminish the sensitivity. And secondly, in many patients, you can completely desensitize them to chemicals, food, inhalants, etc. For example, I was deathly sensitive to formaldehyde. For example, I couldn't touch plastic

bags because I had an immediate reaction. With this method I was desensitized to formaldehyde; I have no problem at all with it now.

Up to now, at least, I feel this is an ideal way to diagnose and treat a wide variety of sensitivities. The list is practically endless. You can desensitize to your hormones, which are a problem for a lot of people, especially women. You can desensitize to candida. You can desensitize or detoxify to chemicals. For example, I have been using detoxification methods for my own chemical problems, and I have had a most dramatic reduction that was shown by fat biopsy.

One year I had large amounts of more than 10 pesticides in my fat, and I was able to reduce them dramatically with this sublingual detoxification method. The doctor who did the analysis was absolutely astounded that I could get to this point with homeopathic desensitization. The usual method of detoxification of these chemicals is biotransformation, a very arduous procedure. I am not saying this sublingual method it is painless, because it is not, but you can really unload tremendous amounts of toxins from your body.

JB: That method is a good example of *primum non nocere*, first, do no harm. It is a very mild treatment for the patient and provides a wide range of clinical opportunities for evaluation. Do the approaches have any dependence on the nutritional status of the patient? Do you find that nutrition plays any role at all?

MB: We deal with a lot of sick people who are nutritionally impoverished for various reasons. We do find that those people who are extremely sensitive may even have difficulty with the desensitizing drops. I have had only about two patients who absolutely were unable to tolerate the drops in any manner. If the patient is extremely sensitive, we advise use of the drops on the skin. You rub only one drop into the skin. Many people who are very sensitive can tolerate this. We slowly increase to more and more drops and then finally get to sublingual testing. I have found that, over time, people who cannot accept drops even in this manner get better through detoxification and are able to tolerate these drops eventually. We find that most of the patients, I would say 99.9%, are able to deal with this effectively. The results vary from individual to individual. We find that some people lose sensitivity to certain substances within a few months while others have to do it for years and continue to do it.

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