

Nutritional Supplements
Video Blog – Jeffrey Bland, PhD
3/11/2010

Transcript:

So, have you had that interesting degree of controversy, as I have, which is: “Why do you take nutritional supplements? They really don’t work. The data that is coming out is negative. It’s just kind of like a waste of money.” That’s an interesting question that has been at the forefront of so many people for the last 50 years in their investigations, so I would like to just say a quick word about why I take nutritional supplements, just as a thought.

Back in the days of nutritional deficiency diseases, which was the turn of the last century, it was recognized that there were specific small molecules in food that could prevent and even treat diseases of unknown origin that have names like scurvy, beriberi, pellagra, xerophthalmia, and rickets. I think you all know those are vitamin deficiency diseases. Imagine if you lived back in that time in which people were dying of conditions that had symptoms like diarrhea, dermatitis, and dementia. Those are the “3 Ds” of pellagra associated with niacin deficiency (vitamin B3 deficiency). You were in the pre-vitamin era and people just died mysteriously with these very horrible symptoms and it was thought they had some demonized problem they were suffering from, or they had bad genes, or whatever it might be—they were suffering from an infectious illness that caused their death.

But then later, the Goldbergers find that, lo and behold, these conditions of diarrhea, dermatitis, and dementia associated with pellagra were really a result of a nutrient deficiency (vitamin B3/niacin). And now suddenly everyone says, “Oh yeah, that makes good sense to me.” If you eat the right diet—in that case it was liver squeezed through cheesecloth that treated these pellagrous victims—now we start recognizing that this small molecule (niacin) can prevent and treat this condition. That was a very big breakthrough in our thinking—a completely remarkable change from just thinking of food as calories (as energy), to thinking of food as molecules that could actually promote the effective use of energy in food through metabolism, and activate metabolism.

Then we go on from there to the 1950s, in which very notable people like Dr. Roger Williams and Dr. Linus Pauling and Dr. Abram Hoffer started showing how nutrients can have an effect on health beyond that of just the protection against deficiency disease by promoting function by optimizing metabolic activity and by improving immunity, cell reparation, healing, recovery from infection—all sorts of things that appeared to be beyond just deficiency diseases that these nutrients could play a role in.

In fact, there is a very interesting kind of extension to this which was discussed in the McCollum Award winning address by Dr. Robert Heaney. This is the most prestigious nutritional research award that is given in the United States each year. Dr. Heaney, a Creighton University Medical School endocrinologist, talked about nutrient deficiencies that produce long latency diseases—disorders that don’t appear in the immediacy, but they appear years later as a consequence of nutrient insufficiency. These diseases have names not like scurvy, beriberi, pellagra, xerophthalmia, and rickets, but they have names like osteoporosis, coronary heart disease, cancer, type 2 diabetes, arthritis, or in other words, conditions that we call chronic, age-related degenerative diseases that may also be related to nutrient not deficiencies, but nutrient insufficiencies that have long latencies before they appear.

More recently, I had the privilege of interviewing Dr. Bruce Ames, a professor emeritus of biochemistry (ex-head of the department) at the University of California at Berkeley, and developer of the Ames test, a renowned test that is used by people all over the world to evaluate potential carcinogenicity of chemicals and substances. And Dr. Ames, who is a well-renowned biochemical and nutrition researcher, in his interview with me, went on to say that there is now evidence that we have a wide range of functional needs for specific nutrients in the individual that will promote function based upon their unique genetics (these things called genetic polymorphisms or uniqueness), and that the level of one may not be the level needed for another for optimal function. In fact, As Dr. Roger Williams once said when I attended a seminar in the 1970s, he said, “Nutrition is for real people. Statistical humans are of little interest.” Ironically, many of us study, in school, statistical 70 kg mythical human beings, not the real person who may require specific levels of need according to their genetic uniqueness.

With that in mind, Dr. Ames goes on to talk about things like vitamin D and vitamin K, which are not traditional vitamins that activate enzymes, but rather what they do is they modulate gene expression patterns. They serve as pleiotropic (meaning, multiple activity) modulators of how cells express their genetic message and ultimately regulate their functions across a wide range of differing functions. This would open up the door to explain why things like vitamin D insufficiency and vitamin K insufficiency have more effects than just osteoporosis or rickets or blood coagulation disorders, but can influence things like risk to heart disease, risk to dementia, risk to cancer, risk to bone formation that is associated with osteoporosis.

What I am starting to recognize when people ask me, “Why do you take vitamins? Why do you take a nutritional supplement?” is it is really as that insurance—kind of a gap-filler—between what is the ideal for what is the rule of the average to the ideal for the individual. What is it that really promotes individual function? When we start looking at people who take routine nutritional supplements, you’ll often find that they’ll say, “My word, my energy goes up. My mental clarity goes up. My sleep improves. My muscle strength and recovery from activity improves.” These are not deficiency signs of functional capacity—improving the function of the individual. So that’s an answer to the question based on the long-winded evolution of science over the last 100+ years, but the bottom line in decision-making is, for many individuals, the difference between high-level function and just kind of going through the motions.