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The Art and Science *of Tailored Supplementation*

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It is often said that you don't really need to take supplements because there's more than enough nutrition in a good diet. And if you're feeling okay on a daily basis, why bother to supplement? In a perfect world, this view would be correct: The ideal way to meet your nutritional needs is from eating unprocessed, organically-grown whole foods—foods that are not only chemical-free but have a substantially higher nutrient density compared to their conventional counterparts. So, if you're in excellent health, have good digestion, and have access to such high-quality fare, you may not need supplements.

When it comes to meeting these conditions, however, most Americans do not fill the bill. Most of us are overfed yet undernourished due to poor eating habits, maldigestion, and other factors. Conventionally grown vegetables and fruits are harvested from nutrient-depleted soils and then shipped over great distances, thus further lowering their micronutrient content. Many people favor processed convenience foods that have been exposed to high temperatures and other factors, resulting in the destruction of vital yet fragile nutrients. These same foods are laden with pesticides and other chemicals, the detoxification of which poses an increased nutritional demand on the human body. Various types of environmental pollution—xenobiotics, heavy metals, and even electromagnetic pollution—can further drain your nutrient reserves.

NUTRIENT DEFICITS ABOUND

At the Carolina Center for Integrative Medicine, we find that at least nine out of ten people walking in the door are deficient in one or more nutrients, and some individuals are deficient to the point of requiring more intensive supplementation. Improper food choices, digestive weaknesses, and disease situations can promote "subclinical" or marginal deficiencies that, in turn, lead to a number of taken-for-granted health problems—fatigue, irritability, poor sleep, brain fog, mood swings, and just feeling off kilter. In most cases, the underlying nutrient shortages are ignored, and the problems are treated symptomatically with the help of pharmaceutical drugs.

The health consequences of such widespread nutritional deficits may be profound. For example, vitamin D deficiency has been linked with increased risks of osteoporosis, compromised muscle strength, osteoarthritis, rheumatoid arthritis, diabetes, multiple sclerosis, periodontal disease, heart disease, hypertension, and various cancers. In addition, suboptimal levels of folic acid and vitamins B6 and B12 are a risk factor for cardiovascular disease, neural tube defects, colon cancer, and breast cancer. Deficiency of zinc, iron, or vitamins B6, B12, folic acid, C or E, may result in increased DNA damage, and half the population may be deficient in one or more of these micronutrients, as reported in the 1 March 2004 issue of *Archives of Biochemistry and Biophysics*.

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Dietary supplements are a convenient way to improve nutritional status and guard against nutritional deficits. The first area where most people can obtain a degree of "biological insurance," at least in the context of a whole-foods diet, is by taking a multivitamin-mineral supplement. Second, people who supplement with fish oil or algae oil are better able to maintain optimal levels of omega-3 fatty acids, which can confer numerous health benefits. Third, supplementing with probiotics (beneficial bacteria) can support digestive health and immunity—and until digestion is optimized, many people are just wasting their money taking supplements.

Beyond these basic levels of supplementation, we find that many people are deficient in specific micronutrients, such as vitamin D, magnesium, and various B vitamins and trace minerals. Any particular supplement strategy will depend on the specific deficiency as well as on the relative severity of that deficiency. Some people will initially need higher doses on a daily basis, while others can have a more relaxed schedule.

Antioxidant support may also be critically important. Because of pollution, aging, stress, erratic exercise patterns and other factors, many people have a condition known as oxidative stress in their bodies, due to an excess of free radicals and a lack of antioxidant power. Again, depending on the type of deficiency or imbalance, specific antioxidant supplements will be recommended to help restore biological order. Very often people only need to use these substances for a short period of time to attain the desired outcomes.

TAILORING SUPPLEMENTS TO INDIVIDUAL NEEDS

If you do need supplements, how would you know which ones are best for you on the individual biochemical level? This is a crucial question. At the Carolina Center, we believe that individual tailoring of nutritional and botanical supplement strategies is a vital aspect of designing the regimen best suited to meet your biochemical needs.

Most people visiting the Center have adopted a generic or "shotgun" approach to supplementation, using products that they have themselves selected after reading about them on the Internet or in health magazines. The problem is that this "kitchen sink" approach overlooks the unique needs of the individual, and we now know that individual nutrient requirements can vary by 20-fold or more, depending on the genetics, biochemistry, physiology, and bioenergetic state of the individual.

This is why appropriate testing is so important. The right kinds of testing can provide key insights into what your body actually needs and how to bring about the best results. At the Carolina Center, we use several cutting-edge testing methods to assess your biochemical individuality and comprehensively identify your specific needs. Such testing enables us to target specific nutrient deficits and many aspects of biochemistry that are associated with health-related outcomes such as sleep, energy, strength, and pain reduction. Our in-house supplement store, Total Health Nutrition Center, carries an extensive formulary of high-quality supplements and offers unrivaled cost analysis of products, as well as evaluations of strength, dosing, substitutions, and potential interactions.

Supplements may play an integral role in effective self care. Nutritional testing enables us to pinpoint key deficiencies or imbalances that may be missed or even worsened by the usual "kitchen sink" approach. With the right expertise and testing, you can optimize your supplement choices and create the best nutritional wellness plan possible. h&h

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