

The American Diet and The Need For Dietary Supplementation

*Barry S. Kendler, PhD, FACN, CNS., **Karen Siclare, MS,
***David M. Brady, ND, DC, CCN, DACBN

THERE IS GENERAL, IF NOT UNIVERSAL, AGREEMENT among objective nutrition scientists, that the vast majority of the foods typically consumed by Americans are best described as fraudulent foods or, better yet, as “dismembered foods,” a term used by Donald Davis, PhD, a nutritional biochemist at the University of Texas. Such food products include most snacks, virtually all foods sold in fast-food chains, over-processed and over-refined food products sold in supermarkets and grocery stores, and soft-drinks, both “naturally” and artificially sweetened. Collectively, these food products are high in added sugar, salt, saturated and omega-6 polyunsaturated fat and contain numerous additives, including artificial colors and flavors, artificial sweeteners, preservatives and synthetic antioxidants. Annually, billions of dollars are spent in promoting sales of these food products through the mass media.

Such food products bear no resemblance to the foods that humans evolved on for many thousands of years. In the past, our species is known to have consumed significantly greater amounts of micronutrients, phytochemicals, dietary fiber, and monounsaturated and omega-3 polyunsaturated fats. To many nutrition scientists, this disparity between the current diet and the diet on which humans evolved, is a major contributor to most chronic, degenerative diseases, including cardiovascular disease and cancer. This hypothesis is based on the fact that the human genome has not had sufficient time to adapt to this radical dietary change. Recent discoveries in genetic polymorphism, that is, differences in enzyme activities, provide biochemical and physiological support for insufficient dietary micronutrients as a cause of human disorders.

Nutrition educators and practitioners are faced with the daunting task of getting Americans to change their dietary habits to include greater amounts of minimally processed and unrefined foods, especially fresh vegetables and fruits and also unfarmed fish and meat from free-range and free-roaming animals.

One strategy that can be used to mitigate the poor dietary habits of Americans is to advocate use of dietary supplements. These would generally consist of physiological, not pharmacological, amounts of micronutrients, dietary fiber, phytochemicals, and various sources of macronutrients, such as fish oils and whey protein. Although as yet there is a paucity of scientific studies that demonstrate disease preventive effects of dietary supplements among Americans, (see Haskell, et al. *Br J Nutr* 2008, 100(5);1086-96) there are numerous intervention studies that have shown the therapeutic effects of a wide variety of supplements in the alleviation and even, cure, of many common diseases.

Vitamin D is now recognized as an exceedingly important nutrient, whose deficiency has been linked to a wide variety of disorders (see Adams and Hewison, *Clin Endocrinol Metabol* 2010, 95(2); 471-8). However, nutrition scientists have cited controlled studies in the peer review biomedical literature involving favorable therapeutic

effects of virtually all micronutrients when they have been appropriately supplemented (see Rakel D, ed. *Integrative Medicine* 2nd ed. 2007, Philadelphia, Saunders). It is only reasonable to conclude that disorders that are cured by administration of a given micronutrient can be prevented by that same micronutrient.

Unfortunately, conventional clinical practitioners have been reluctant to incorporate these research findings into patient care and treatment. One reason for this is the conflicting results of randomized clinical trials, the gold standard of evidence-based medicine. In a recent paper, Robinson et, al, of the Dep't. of Internal Medicine, Division of Endocrinology and Metabolism at the University of New Mexico (*Endocr Pract* 2006, 12(5); 576-82), provided an insightful explanation of clinical trial failures. Although their paper pertained to vitamin E intervention, their suggestions could easily be applied to most other micronutrients. Among the 8 reasons they cited for failure of intervention are inclusion of inappropriate patients, inadequate duration of treatment, suboptimal dosage, failure to consider nutrient interactions, use of single nutrients, inappropriate administration to meal ingestion, poor patient compliance and failure to monitor plasma nutrient levels.

What health care practitioners need to be especially aware of is the importance of increased micronutrient needs, especially during physiologically more demanding stage of the life cycle, such as growth, pregnancy, and aging, and during excessive physical and emotional stresses. Also important is an understanding of nutrient interactions with other nutrients and with pharmaceuticals. In this context, the full complement of micronutrients should be provided and not given individually. Finally, guidelines in use of supplements should preferably be given by adequately trained nutritionists, and nutritionally-trained doctors, such as Diplomates of the American Clinical Board of Nutrition (DACBN), Certified Nutrition Specialists (CNS), and Certified Clinical Nutritionists (CCN), who can recommend dietary supplements that are not available to the public but only through health care professionals. This is needed for accountability, which is completely lacking when micronutrient supplements are self-purchased.

*Professor of Clinical Nutrition, Human Nutrition Inst., University of Bridgeport; **Assistant Director, Human Nutrition Inst., University of Bridgeport; ***Director, Human Nutrition Inst., University of Bridgeport