

final word

A surprisingly challenging question – What is a vitamin?

It is often the simple questions that bring about epiphanies. In my line of work, one such question to which I often bear witness is “What is a vitamin?”

While we are so in tune with the current studies and research, such as “Higher Dietary Intake of Soluble Fiber from Fruits, Vegetables and Beans May Improve Metabolic Health in Overweight Children” (the study on my desk at the moment), we are often unaware of the “what” of something we routinely use and advise patients to take every day – vitamins.

Defining a vitamin is not as easy as one might think. The common textbook answer for the definition of a vitamin is “an organic substance that cannot be manufactured by an organism that is necessary in small amounts.” Yet, this does not give a full understanding, as vitamins have a very diverse range of functions. Vitamins can be hormones, antioxidants, or act as coenzymes for many metabolic functions.

All vitamins are phytonutrients since all were originally discovered in food; thus we can add phytonutrient to the definition of a vitamin. If a patient is missing the phytonutrient $C_6H_8O_6$ (vitamin C) from their diets, for example, they will develop signs of scurvy; lack of $C_{27}H_{44}O$ (vitamin D) will present rickets. We can therefore also say a vitamin is a phytonutrient needed in small amounts regularly in order to prevent nutritional diseases that develop over a relatively *short term*.

This exercise inevitably leads to a quandary. How many patients have visited you for short-term nutritional deficiencies such as scurvy or rickets? When was the last time a patient with one of these disease states walked through your door? Many patients may have vitamin deficiencies, such as low vitamin C, and possibly a broad range of other nutrients for which they can use supplementation; actual vitamin deficiencies that cause a short-term disease state are quite rare.

Today, we are well aware of unprecedented levels of *long-term* nutritional deficiency disease states; notably, metabolic syndrome, type II diabetes and cardiovascular disease continue to rise. It is these long-term disease states that bring patients to your office, having developed over a *long term* of unhealthy eating habits and inadequate exercise, taking several years to develop. Unfortunately, vitamins can't be defined as preventing long-term nutritional diseases; studies have proven that vitamins by themselves are incomplete for optimal long-term health.

There have been attempts to classify phytonutrients that prevent long-term nutritional deficiencies as vitamins; one that comes to mind is vitamin P. Albert Szent Gyorgyi, the scientist who discovered vitamin C, felt strongly that vitamin C is not effective without the other synergistic factors present in the original food (peppers). Shortly after his discovery of vitamin C, Albert Szent Gyorgyi discovered vitamin P. Since vitamin P wasn't shown to prevent any known short-term nutritional deficiency it lost its designation as a vitamin. Vitamin P is now known as the phenolic compounds, which are known to be crucial for the nutritional support of long-term nutritional deficiencies, including cardiovascular health. The union of phenolic compounds and vitamin C in a FoodState (interwoven as it naturally occurs in food, not simply mixed) is the best source for long- and short-term nutritional support. Beyond phenolic compounds many other phytonutrients are thought to be important in the prevention of long-term nutritional deficiencies, including organosulfur compounds, carotenoids, alkaloids, etc.

Look at the current long-term studies into these disease states; almost all of the studies with increased consumption of fruits, vegetables and whole grains show an inverse correlation with these diseases. Many of these studies point to the phytochemistry of these foods and the necessary inclusion in the diet. The studies that utilized isolated vitamins show mixed results at best. It is therefore the union of vitamin and phytonutrient in whole food that is essential for the prevention of these long-term nutritional deficiencies.

This leads to the inevitable answer: If whole food provides the phytochemistry patients so desperately need for optimal long-term health, then the best foundation for patients is a whole food multiple vitamin.

So the next time you create a supplementation foundation for your patients, consider whole food supplements. Whole food supplements provide not only the defined vitamin phytonutrients, but also all of the as yet undiscovered factors and broad array of phytochemistry for optimal long-term health.



BIOGRAPHY

James Doherty has over ten years experience in the natural products industry coupled with extensive training in biology and chemistry. Through these years of study, James has seen his beliefs and passion for whole food nutrition as the optimal source of nutrition turn into scientific reality. He has lectured throughout the US and in Canada on the complex science of whole food nutrition, uncovering the benefits of whole food supplementation with a focus on vitamin manufacturing, peer-reviewed studies, whole food as dynamically evolved sets of interacting food constituents, and the limits of reductionist approaches that seek to identify single nutrient compounds. James is presently the director of the professional division of BioSan Laboratories, Inc., makers of Innate Response and publishers of Unified Health.