

PREVENTING CHRONIC DISEASE WITH VITAMINS AND SUPPLEMENTS

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We know that there are acute diseases which can lead to one's demise, and there are chronic diseases which contribute to poor health, poor mobility, poor appetite, poor mentation, and a host of other problems that a person having that chronic disease has to live with every day. Besides the discomfort and infirmity in this country, somewhere between 60% to 70% of deaths are due ultimately to chronic disease. This is higher in the northeastern states and lowest in the midwestern states. What are some of these diseases and how can we help prevent or overcome them with nutrition and supplements as a preventive measure? Some of the diseases that we need to consider are diabetes, asthma, heart disease, arthritis, and gastrointestinal diseases.

An interesting review with the Journal of the American Medical Association (June 19, 2002) noted in a review of nine vitamins that "elderly people, vegans, alcohol-dependent individuals, and patients with malabsorption" are at higher risk of inadequate intake or poor absorption of several vitamins. Inadequate vitamin levels have been linked to coronary disease, cancer, and even osteoporosis. Since the compounds which are classified as "vitamins" cannot be made by humans, they must be taken in as part of a diet or as supplements. Because of poor food choices and inadequate nutrient intake, our whole population is at risk for vitamin deficiency and may manifest one or more problems at any time in their lives because of this. Additionally, pregnancy, illness, or even use of alcohol may increase some vitamin requirements and therefore can lead to a depletion of vitamins even in an individual with good dietary habits.

Deficiency of folic acid, vitamin B6, and vitamin B12 are related to homocysteine production and can be responsible for a higher risk of coronary artery disease. People with high homocysteine levels are at twice the risk of heart disease compared with the lowest. Folic acid is necessary for multiple processes of metabolism in the body and can be obtained from dark green leafy vegetables, whole grain cereals, or fortified grain products. All flour in the US is supplemented with a basic level of folate acid. As far as vitamin B6 is concerned, this is found in plant and animal products and participates in many enzymatic reactions necessary for protein metabolism. Deficiency of this vitamin results in irritation of the lining of the mouth, psychological depression, and peripheral neuropathy with numbness of the hands or motor weakness. Vitamin B12 is found only in animal products, the most important of which is red meat. This vitamin is important in making blood, and a deficiency can result in anemia and neurologic abnormalities. Strict vegans often are deficient in this vitamin simply because they are not aware of how to get the vitamin from other sources besides animal products. The "B" vitamins can be supplemented by oral supplements, or in the case of vitamin B12 by sublingual tablets.

Since folic acid deficiency can cause abnormal metabolism of DNA, it can increase the risk for colon cancer, breast cancer, and even congenital formation of abnormal nerve

development of the back. It is important that all women in this country have adequate intakes of folate either from their diet or by supplements to help reduce cancer risk. Also, alcohol ingestion of more than one drink per day depletes folic acid in the body.

Vitamin E is an interesting vitamin which is really a family of compounds that can help scavenge free radicals and reduce oxidative damage to the cells. Vitamin E deficiency would be quite rare but can occur in malabsorption or short bowel syndromes. It has been thought to help prevent atherosclerotic disease, and even the Nurses' Health Study showed that there could be up to a 44% reduction in major coronary disease. Other studies have disputed these figures, but there are enough studies supporting it to make one feel that vitamin E supplementation is not risky and can be helpful.

Beta-carotene in its natural form from food has been shown to decrease the risk of lung cancer and also for colon, breast, and prostate cancers. There is evidence that taking the supplements as pills may in some instances actually increase the risk of disease, particularly lung cancer, but that an adequate amount of dietary intake of carotenoids (beta-carotene) supplements can be helpful. One must be aware that using supplementary vitamins may not have the desired effect on prevention of certain disease processes. This is probably because the vitamin needs to act within the substance of the food to be at its most efficient level.

Vitamin D is another interesting vitamin, and adequate levels of this seem to reduce the incidence of cancer and osteoporosis. Interestingly, the higher north one lives, the less total sunshine exposure one gets in any given overall year cycle. It appears that adequate vitamin D levels can be derived from exposure to the sun 20 or 30 minutes, about 3 times a week. This is an excellent way to obtain vitamin D, but completely impractical in northern latitudes, particularly in winter when it is cold. Vitamin D supplementation with about 1,000 units of vitamin D (cholecalciferol) daily will help prevent some of the problems seen with vitamin D deficiency.

Studies of vitamin C have also been interesting in that it seems to be linked to lower cancer rates. Of course, vitamin C is found in fresh fruits and vegetables, and these are really the basic defense against the development of cancer. Studies vary in terms of what results can be achieved with this. A recent study showed a lower vitamin C caused increased oral cancer, gastric cancer, or premenopausal breast cancer. Other studies show no differences. For me, I believe that the best sources of vitamin C are from foods, and only if you cannot get enough fresh fruits and vegetables every day should you be considering vitamin C supplementary intake.

As can be seen, there are many problems that can occur from vitamin deficiencies. The evidence for absolute truth as to how much a given vitamin will help is just not there, but many studies indicate that adequate vitamin levels as obtained by supplements can help prevent chronic disease. Eat a good diet first, and eliminate all useless calories and "white" carbs such as flour and sugar. By doing this, you will probably be able to best prevent some of these diseases which we have discussed.