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VITAMIN D, THE NEW MIRACLE NUTRIENT?

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In recent years, the term "miracle" has been used repeatedly by media and advertisers to describe everything from diets to nutritional supplements. Indeed, the Mediterranean Diet, co-enzyme Q10 and omega-3 fatty acids, among others, have had curative effects for some individuals. One particular nutrient that has been garnering widespread attention and research activity for several years, and that nutrition scientists are touting as having miraculous healing effects, is vitamin D.

Many medical researchers and clinicians believe vitamin D has the potential to prevent or treat numerous diseases. This has been demonstrated in several studies, including one of older adults in which vitamin D appeared to significantly reduce all-cause mortality. This suggests vitamin D may help lower the number of fatalities from degenerative diseases, including cardiovascular disease, a leading cause of death¹. Other studies also show this to be the case. For example, in a study reviewed by Drs. P. Autier and S. Gandini of the

International Agency for Research on Cancer in France, and published in the Archives of Internal Medicine, vitamin D decreased the overall incidence of cancer by 60%². In another study they reviewed, an average of only 528 IU (International Units) of vitamin D was found to be effective in reducing mortality rates³. Moreover, the beneficiaries

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of vitamin D supplementation included all ages and both sexes.

Suboptimal vitamin D levels have been associated with a number of health problems,

such as high blood pressure, stroke, diabetes, multiple sclerosis, rheumatoid arthritis, inflammatory bowel disease, and osteoporosis. Severe and prolonged deficiency can result in impaired bone mineralization, pain, bowing of legs, and joint enlargement,

manifestations of a disease known as rickets in children. Its adult form, osteomalacia, is similarly characterized by muscle weakness, bone tenderness, low bone density, and increased fracture risk. Statistical associations imply that optimal levels of vitamin D may aid in the prevention or treatment of these types of disorders.

Vitamin D serves many functions. It has long been known to improve calcium absorption, which helps with mineralization of bones at any age. This may help stave off bone thinning and weakness that can occur with diseases such as osteopenia and osteoporosis.

When vitamin D is adequately supplied, the body produces a natural antibiotic substance called cathelicidin. Cathelicidin helps the immune system identify foreign microorganisms. Because of this, vitamin D may support strong immune function, helping overcome infections.

Another action of vitamin D is to control excessive inflammation, which has been linked to autoimmune diseases, type I diabetes, and diseases associated with aging. Vitamin D supplements may even improve insulin resistance, which helps prevent type II diabetes⁴.

How could a single vitamin exhibit all of these benefits? Vitamin D serves as a precursor to a powerful hormone known as dihydrocholecalciferol, also known as calcitriol. Most organs respond to stimulation by calcitriol, which has been found to activate over 2000 genes. When activated, genes direct the synthesis of proteins, including enzymes, which are needed for normal metabolism and body functions. Additionally, vitamin D prevents damage to

structures called telomeres, located at the ends of chromosomes, which help prevent destruction of cells.

Groups at greatest risk of vitamin D deficiency include: African Americans, due to greater amounts of melanin pigment in their skin; the elderly, whose bodies make less vitamin D; overweight people, since body fat absorbs vitamin D; and, indoor workers, especially those in northern latitudes and using excessive amounts of sun-block. Even residents of the south, where sunshine is plentiful year-round, may lack adequate amounts of vitamin D.

There are a few ways to increase vitamin D levels. Vitamin D can be made by the body if the skin is exposed to a sufficient and sensible amount of sun, or ultraviolet, light. Salmon or canned sardines are dietary sources of vitamin D, which, unfortunately, is not found in most foods. To prevent vitamin D deficiency through daily supplements, John Cannell, MD, Director of the Vitamin D Council, and Bruce Hollis, PhD, Professor of Biochemistry, Molecular Biology and Pediatrics at the Medical University of South Carolina, recommend 800 IU for breast-fed infants and 400 IU for formula-fed infants. Toddlers and young children not receiving regular exposure to sunlight

require 1,000 to 2,000 IU daily. Pregnant and lactating women need 5,000 and 7,000 IU daily, respectively. Most adults require 2,000 IU daily⁵. Vitamin D-3 (cholecalciferol) is recommended as a supplement rather than vitamin D-2 (ergocalciferol), since the latter has less potency. Even with this information suggesting miraculous health effects associated with sufficient vitamin D levels, a doctor should be consulted to determine whether, and what dosage of, supplement use is appropriate.

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"We travel together, passengers on a little spaceship, dependent on its vulnerable reserves of air and soil; all committed for our safety to its security and peace; preserved from annihilation only by the care, the work and, I will say, the love we give our fragile craft."

~ Adlai Stevenson

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