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Pompano Beach and Vitamin D

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In healthy people, short sleeves and skin exposure for a minimum of ten minutes a day in South Florida generate Vitamin D from the sun. While it is impossible for people in the mid and high latitudes to generate Vitamin D in winter months, Pompano Beach, at latitude 26.2379° N, 80.1248° W, is a perfect location for obtaining ultraviolet radiation (photons) necessary to kickstart Vitamin D production in the body.

Photons Combine With Cholesterol

Cholesterol, that’s been given a bad rap, actually plays an important role in Vitamin D production. Four Ultraviolet B photons combine with one molecule of cholesterol in the skin to make Vitamin D3 (cholecalciferol). However, Vitamin D3 is not a biologically active hormone. It is a prehormone. It needs to be converted to 25 hydroxy Vitamin D3 in the liver and finally converted to biologically active 1,25 dihydroxy Vitamin D3 in the kidneys.

Vitamin D Deficiency

Traditionally, the most well-known Vitamin D deficiencies are rickets and osteomalacia that develop due to defective bone development. We need Vitamin D to absorb calcium and build strong bones.

Over the last 10 years, the latest medical science indicates Vitamin D deficiency has also been associated with an increased incidence of cancer, autoimmune diseases such as multiple sclerosis and rheumatoid arthritis, inflammatory bowel disease, and Type I diabetes. It is also associated with hypertension, chronic pain, obesity, influenza (flu), tuberculosis, heart disease, and accelerated aging. Recent scientific research indicates that the incidence and severity of many types of cancer inversely correlates with Vitamin D status in the body.

In 2014, researchers at McGill University in Quebec published their findings from a Mendelian Randomization Study identifying gene variants that play a role in Vitamin D deficiency. The study, published in the Public Library of Science (PLOS) journal, found that the more of these variants an individual had, the greater the risk of having low vitamin D levels.

Safe Sun Exposure

For the last 50 years, there have been strong recommendations to avoid sun exposure and increase the use of sun block lotions to prevent skin cancer and damage to the skin. It became medical heresy to recommend sun tanning in any form. During that time period, there has been a dramatic increase in the incidence of every form of chronic illness from cancer to autoimmune diseases. Michael F. Holick, M.D. is a well-known author who has written two books about Vitamin D. Holick is director of the General Clinical Research Unit and professor of medicine, physiology, and biophysics at Boston University Medical Center. In his books, Dr. Holick recommends getting sunlight, but not sunburn. People with very fair skin may need to limit their exposure to 10 minutes each day, while those with darker skin may be able to withstand longer periods.

Vitamin D2 Fortification in Food or in Supplements

Medical doctors sometimes prescribe Vitamin D for patients that exhibit a deficiency. Not all Vitamin D is the same. Some Vitamin D is synthetic. Natural Vitamin D3 is cholecalciferol, and a synthetic version, called Vitamin D2 is ergocalciferol. Researchers at the School of Nutrition and Dietetics, Acadia University in Wolfville, Canada, published a report in 2006 stating that Vitamin D2 should not be regarded as a nutrient suitable for supplementation or fortification.

Very few foods naturally contain Vitamin D3 (cholecalciferol). Examples include wild caught salmon, other oily fish, cod liver oil and sun-dried mushrooms. Because Vitamin D3 (cholecalciferol) is not biologically active and requires conversion in the human liver and kidneys, any food source should be considered far less potent than Vitamin D production that
starts with cholecalciferol synthesis in the skin.