



The health benefits of vitamin D

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The majority of people are deficient in vitamin D. The reasons for this include the use of sunscreens, spending more time indoors, and less efficient absorption of vitamin D as we age. Darker skin and living at higher latitudes also increases the risk. People at extreme risk include house or office bound people, those with renal disease, persistent musculoskeletal pain; osteoporotic people, inflammatory bowel disease or celiac disease and people who are on anticonvulsants. The best measure of vitamin D levels is 25 hydroxy vitamin D. Deficiency is less than 20 ng/ml, normal levels are above 32 ng/ml, but optimal levels are in the range of 60 ng/ml. The old dose recommendation of 400 IU/day of vitamin D is not sufficient to prevent fractures in the elderly. Doses of above 1000 IU (especially if older than 50) are required to prevent deficiency. Doses of up to 2000 IU have been proven safe. ⁽¹⁾

Vitamin D is important for calcium absorption, immunity, avoidance of autoimmune reactions, maintenance of weight and blood pressure, prevention of arterial calcifications and also for the prevention of cancer.

Michael Holick of Boston University says “sensible sun exposure (usually 5-10 minutes of exposure of the arms and legs or the hands, arms, and face, 2 or 3 times per week) and increased dietary and supplemental vitamin D intakes are reasonable approaches to guarantee vitamin D sufficiency.” ⁽²⁾

Robert Heaney of Creighton University claims that it would require 2600 international units of

oral vitamin D3 to ensure that 97.5% of older women achieve optimal vitamin D levels. ⁽³⁾

Sunscreen lotions block the vitamin D producing UV-B rays and allows the deeper penetrating UV-A rays to reach the skin. Mortality rates due to malignant melanoma increased after the initiation of campaigns to promote the use of sunscreen lotion blockers in the 1970s. It is important for the skin to be exposed to UV-B sun rays, which help in the production of vitamin D naturally. Sunscreen lotions applied to the face though will protect from premature wrinkling. Safer ways to protect the skin from sun damage and skin cancer includetopical or oral antioxidant supplements. For example topical vitamin C and E combined with green tea extract, ferulic acid or other antioxidants may be an option to prevent skin aging and skin cancer. ⁽⁴⁾

So let us take a look at some of the health benefits of vitamin D :

Higher vitamin D levels have been associated with a lower risk of dying from all causes over a 7 year period, as well as specifically from cardiovascular disease. ⁽⁵⁾

“This prospective cohort study demonstrates for the first time, to our knowledge, that low 25-hydroxyvitamin D and 1.25-dihydroxy vitamin D levels are associated with increased risk in all-cause mortality compared with patients with higher vitamin D levels”

Vitamin D has been linked to the prevention of breast cancer. ⁽⁶⁾

The conclusion of this pooled analysis of vitamin D and the prevention of breast cancer was that

the intake of 2000 IU/d of vitamin D3, and, when possible, very moderate exposure to sunlight, could raise serum 25(OH)D to 52 ng/ml, a level associated with reduction by 50% in the incidence of breast cancer, according to observational studies.

For women already diagnosed with breast cancer, vitamin D may slow the progression of the disease. In 2006, researchers at the Imperial College of London.⁽⁷⁾ Vitamin D levels were significantly higher in the women with early-stage disease than in women whose breast cancer had progressed to a more advanced stage.

In August 2007 researchers at the University of California reported that an estimated 250 000 cancers of the colon and 350 000 breast cancer cases could be prevented worldwide each year with vitamin D supplementation. They recommended doses of 2000 IU/d for a meaningful reduction in breast cancer. ⁽⁸⁾

Studies show more links between vitamin D and multiple sclerosis. ⁽⁹⁾

Children later diagnosed with multiple sclerosis had far lower levels of vitamin D than other youngsters, Canadian researchers reported in studies showing more links between low vitamin D and disease. Other studies show that adults who live in northern latitudes, who get less sun exposure, may have a higher risk of multiple sclerosis. They also support a growing body of studies that link low vitamin D with disease, including breast and colon cancer, heart disease, diabetes and tuberculosis. Evidence suggests that vitamin D helps lower blood pressure, reduces inflamma-



tion and boosts the immune system. Vitamin D acts as an immune modulator. In multiple sclerosis, there are many lines of evidence that immune cells are not regulated properly, and one of the things that influences that balance is vitamin D. Interestingly, Canadians have one of the highest rates of multiple sclerosis in the world. In Canada for 6 months of the year the sun is not intense enough to manufacture vitamin D in the skin.

Low levels of vitamin D are also linked to cardiovascular challenges. ⁽¹⁰⁾

There is an increased incidence of peripheral arterial disease in individuals who have low vitamin D, a new study has found. After examining the data, the study authors found that there was a greater prevalence of peripheral arterial disease in subjects with the lowest levels of vitamin D compared to subjects with the highest levels. For each 10 ng/ml decrease in vitamin D level, the risk for peripheral arterial disease increased by 29 percent.

Vitamin D could anti-age you! ⁽¹¹⁾

New evidence suggests that high levels of vitamin D has a strong correlation with increased leukocyte telomere length. This is important for one's health and longevity. Leukocytes (white blood cells) are the backbone of the body's immune system. Like all cells, leukocytes contain our chromosomes, which consist of dna and associated proteins. Telomeres are tiny terminal segments at each end of the dna molecule. They serve a vital role by protecting dna from damage during cell division. Telomeres also prevent the ends of dna molecules from joining to each other to form loops, or from joining end-to-end with the dna in other chromosomes-disastrous scenarios both. By extending the length of the dna strands with their genetically blank material, they give the enzymes enough space to work with

in replicating the genetically useful material all the way to its end, thus preserving every last gene. Were it not for this protective action, some of that material would be lost in each replication, resulting in deterioration of cell function, and of one's health.

Telomere length decreases in cells as we age, ultimately resulting in aging of the cell, and eventually no further cell division. A ribonucleoprotein telomerase, whose function is to extend the length of telomeres is only found in appreciable amounts in sex cells, stem cells and UNFORTUNATELY cancer cells.

Extending telomere length has huge potential as an antiaging tool in preserving the cellular and dna health

Vitamin D and pre-eclampsia

Pre-eclampsia (proteinuria, high blood pressure and odema in pregnancy) can cause huge health problems for both mother and fetus.

A study carried out at the University of Pittsburgh found that vitamin D deficiency early in gestation is associated with a five-fold increase risk of developing pre-eclampsia. ⁽¹²⁾

Vitamin D and diabetes

Recent research has demonstrated that those who receive high amounts of vitamin D during childhood have a lower risk of developing type 1 diabetes later on in life, the greater the amount of vitamin D, the greater the benefit. ⁽¹²⁾

Type 1 diabetes comes about due to the insulin producing beta cells of the pancreas being destroyed by our own immune system, starting early in childhood.

Vitamin D and brain function

Because of the vitamin D receptors in the brain, it has been discovered that vitamin D plays a very important role in maintaining and achieving a healthy mind. What is known also is that low vitamin D levels have been implicated to increase depression in the elderly. This information is use-

ful because depression can potentially be treated in the future with vitamin D rather than with dangerous psychotropic medications. ⁽¹²⁾

Vitamin D - a new pain killer?

Women who get the right amount of vitamin D are less likely to suffer from chronic widespread pain, according to a new study in the annals of rheumatic diseases. Vitamin D is actually a hormone that is intimately involved with bone and immune system health. In addition to promoting normal bone development, there is evidence (as outlined above), that getting enough vitamin D helps protect against multiple sclerosis, type 1 diabetes, and certain cancers. Studies have shown that many people suffering from chronic pain have low vitamin D levels and that supplementing with vitamin D can relieve certain types of pain. ⁽¹³⁾

Good food sources of vitamin D include egg yolks, fortified foods, and oily fish such as salmon and herring. For most people supplementing though with 1000-2000 IU is the way to go. Suggested is to check your levels. Personally I am finding in my practice that more than 70% of my clients are deficient in vitamin D and require supplementation. It is my belief that this critical vitamin can no longer be overlooked or underestimated!

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