

On Nutrition: by Helayne Waldman, Ed.D., N.E.

Vitamin D: Definitely Not Dispensable

Meet vitamin D, one of the newest darlings in the nutritional world today. It appears that vitamin D is finally coming into its own, and not a moment too late. Not only does this hormone-like vitamin prevent rickets, a disease of painful bone weakness and deformity that we all learned about in grade school, but it is rapidly emerging to play a starring role in a host of bodily functions – not just the healthy maintenance and renewal of our bones, but of our kidneys, our immune system, our heart and arteries, brain and yes, even our weight. The bad news is that an astounding 80-90% of us in the U.S. appear to be clinically deficient! In fact, nutritionist Krispin Sullivan, whose vitamin D tract “Naked at Noon” is due out momentarily, has indicated that of 100 patients whose vitamin D levels she tested, 98 showed sub optimal levels.

How can this be? Hasn't it been a century already since German researchers noted that consuming 1-3 teaspoons daily of cod liver oil, rich in vitamin D, could reverse rickets in children, and didn't milk producers start fortifying their product with vitamin D in the 1930's as a result? Yes. In fact, fortifying milk with vitamin D made rickets a rare disease throughout most of the 20th Century. Rickets, however, has recently re-emerged, especially among African-American infants and children, according to the *Journal Pediatrics International*.

Blame it on Coppertone?

One change that's been easy to track over the last several decades has been the extensive and habitual



use of sunscreen. Now, before the dermatology community puts a price on my head, let me assure you that I'm well aware that excessive sun exposure is harmful to skin, that sunburn can lead to skin cancer, and that the depletion of the ozone layer means that we all need to maintain extra vigilance in avoiding the risks of overexposure.

But – and this but is a big one – the sun is also our primary source of vitamin D. Research has demonstrated that when our skin is exposed to the UVB part of the ultraviolet spectrum, a compound in the skin is transformed into a precursor of vitamin D (called D3 or calcitriol), which is then converted by the kidneys into an active form that our bodies proceed to use in a multiplicity of ways. For example, we use it as a messenger chemical to alert the small intestines to absorb more calcium and phosphorous, the essential building blocks of healthy bone tissue. We send more of it to help out the specialized cells in our immune system, providing protection from juvenile diabetes and other autoimmune disorders, and to the kidneys, to support specialized enzymes in regulating blood pressure. In fact, vitamin D plays a role in virtually every organ system in the body.

Here are some other pearls from Sullivan's book:

- Vitamin D has been shown to lower blood pressure, restore insulin sensitivity and lower cholesterol.
- Obese persons have impaired production of UV-B stimulated D and impaired absorption of food -derived and supplemental D; weight normalization is associated with higher levels of D and adequate calcium. (Some prescription drugs have also been shown to interfere with vitamin D absorption and metabolism, including cholestyramine /Questran, Dilantin, and phenobarbital.)
- Low vitamin D status is associated with several auto-immune diseases including multiple sclerosis, Sjogren's Syndrome, rheumatoid arthritis, thyroiditis, and Crohn's disease.
- Breast, prostate, skin and colon cancers show a strong association with low levels of vitamin D and lack of sunlight.
- Low levels of vitamin D may contribute to chronic fatigue and depression.

As the scientific evidence stacks up in favor of higher vitamin D levels, I suspect we'll see changes in both the RDA (recommended daily allowance) for this critical nutrient,

as well as a deluge of vitamin D-fortified goodies on supermarket shelves.

Keep in Mind

It's not easy to obtain vitamin D from food sources, however, so don't rely solely on food, if you can help it. Your best bets are salmon, mackerel, sardines, and other cold-water fish. There's a bit of it in egg yolks and organ meats (e.g., liver), in fortified milk, and a hefty dose in cod liver oil, that nutritious staple that adorned the shelf of our more discerning grandparents and has recently made a comeback in the health-conscious community.

But lest you think you're getting a full dose of vitamin D from skim milk, think again. Like Vitamins A, E and K, D is a fat-soluble nutrient, meaning it can only be absorbed in the presence of fat. There are a host of reasons to throw out your skim milk anyway – now here's one more. Use organic low fat or whole milk, or

better yet, drink fresh wholesome raw milk (for a refresher on the health benefits of raw milk, see my recent column on this).

Catch a Ray or Two

The experts, including the cautious National Institute of Health (NIH), are now recommending that we all get some sunshine on unexposed skin to maximize our vitamin D reserves, and to carry us through the UVB-less winter months, where the rays are weak here in the Northern areas of the U.S. . Exposure proposals vary, with some professionals recommending 15 minutes a day between 11 and 2, while others contend that 5-10 minutes, 2 to 3 times a week is sufficient (after which you should proceed to apply your sunscreen, please). If sun exposure is limited or difficult, supplements are also an option.

Be careful, though, and don't try this at home without supervision. Too much vitamin D can be as

hazardous as too little, so it pays to work with someone who can monitor you as you go along. There's little risk of overdosing from the sun, but in some cases, excess supplementation can be problematic. The best strategy is to ask your practitioner to check your vitamin D levels and then proceed cautiously with your program.

As the musical "Hair" advised us over 30 years ago, "Let the sunshine in!"

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