



Vitamin D: Reduced Heart Attack Risk

The latter part of 2007 heralded findings from two studies on vitamin D. A meta analysis—titled “Vitamin D Supplementation and Total Mortality”—appeared in the September 10, 2007 issue of the *Archives of Internal Medicine* and suggested that ordinary doses of vitamin D supplements seem to be associated with decreases in total mortality rates. Other research published in the November 2007 *Journal of National Cancer Institute* showed a decrease in colorectal mortality with a 72% reduced risk of dying from colorectal cancer when high levels of vitamin D were present.

More recently, a study published in the June 9, 2008 *Archives of Internal Medicine* says a vitamin D deficiency puts men at an increased risk—2.5 times more likely—for a heart attack.

The research. Epidemiologist Edward Giovannucci, MD, ScD, from Boston’s Harvard School of Public Health, led the prospective study, which was sparked by the hypothesis that a vitamin D deficiency may be involved in atherosclerosis and coronary heart disease development.

According to the study, the vitamin D axis “affects vascular smooth muscle cell proliferation, inflammation, vascular calcification, the renin-angiotensin system (RAS), and blood pressure, all of which affect risk of cardiovascular disease and myocardial infarction (MI).” And since hypovitaminosis D—a disease caused by a vitamin deficiency—is “prevalent and easily correctable, establishing the relationship between vitamin D and risk of MI is important.”

Researchers examined 25(OH)D concentrations in relation to myocardial infarction risk in a large cohort of US men (18,225), called the Health Professionals Follow-up Study (HPFS).

Per the study, the men (aged 40-75) were “free of diagnosed cardiovascular disease at blood collection.” Blood samples testing vitamin D levels were returned between April 1, 1993 and November 30, 1999. Using risk set sampling, researchers selected controls (n=900) in a 2:1 ratio and matched for age, date of blood collection and smoking status.

Only 23% of the men in the study—proportionally indicative of many populations—had vitamin D levels in the low normal range (30 nanograms per milliliter of blood). Typical of most of us, the other 77% had levels falling in the “below normal” range. In fact, the prevalence of vitamin D deficiency is often higher in subpopulations, such as dark-skinned individuals or elderly persons, per the study.

In the ten-year follow-up, 454 study subjects developed nonfatal myocardial infarction or fatal coronary heart disease.

The results. Investigators made adjustments for family history of myocardial infarction, body mass index, alcohol consumption, physical activity, history of diabetes mellitus and hypertension, ethnicity, region, marine-3 intake, low- and high-density lipoprotein cholesterol levels and triglyceride levels. Still, the relationship between a vitamin D deficiency and raised myocardial infarction risk remained.

Here is what the study concluded:

- Men with a vitamin D deficiency (15 nanograms per milliliter of blood or less)—were at increased risk for myocardial infarction compared to those with lower end of “normal” range (30 nanograms per milliliter of blood).
- Men with intermediate vitamin D levels—demonstrated a 60% increased myocardial infarction risk.
- The association was stronger for fatal coronary heart disease, but the number of cases was too small for conclusive findings.
- If this vitamin D association proves causal, which remains to be established, the amount of vitamin D required for optimal benefit may be much higher than current recommendations (200-600 IU/d), especially in those with minimal sun exposure. Thus, the present findings add further support that the current dietary requirements of vitamin D need to be increased to have an effect on circulating 25(OH)D levels substantially large enough for potential health benefits.

continued on page 2





Vitamin D: Facts You Should Know

Similar findings. In January 2008, the Framingham Offspring Study of over 1,700 men and women followed subjects for over five years. Researchers found a vitamin D deficiency associated with cardiovascular disease incident in a graded fashion. An analysis of 15,000 men and women in the National Health and Nutrition Examination Survey/NHANES III (June 2007) linked vitamin D deficiency with cardiovascular disease.

Also, NHANES III showed an association between vitamin D and blood pressure in over 7,600 men and women—which was backed up a month later by another study of over 28,000 women, ages 45 and older.

The Cenegenics approach. In an editorial that accompanied the meta analysis mentioned at the opening of this article, Dr. Giovannucci concluded that based on the total body of evidence of health conditions associated with vitamin D deficiency, abetted with the results from this meta-analysis, a more **proactive attitude to identify, prevent and treat vitamin D deficiency should be part of standard medical care.**

The Cenegenics program does just that, using solid science and comprehensive evaluation. Our patients undergo an intensive set of diagnostics—well beyond typical annual checkups—to determine their metabolic and physiologic baselines, which forms the basis of their customized, synergistic program: low-glycemic nutrition, quality nutraceutical supplementation, exercise and hormonal optimization, when clinically indicated.

As a result, our patients experience a new definition of aging:

- Youthful energy
- Improved libido
- Lean muscle mass
- Reduced body fat
- Sharper thinking
- Stronger immune system
- An ability to manage stress
- A vibrant life and well-being

Optimize your health. Learn more about personalized Cenegenics programs and the science behind age management medicine.

- **The more potent form of the vitamin, D₃ or cholecalciferol, is preferred**—the type generated by sun exposure when UV rays create a vitamin D synthesis in the skin. Using sunscreens with an SPF greater than 8, cloudy days, smog, various seasons, etc. can impact the amount of “sunshine” vitamin D we get from the sun. (Note: D₃ is also available in an oral supplement form, but watch what you are buying because vitamin D₂ is more commonly found in supplements.)
- **The dietary form**—D₂ or ergocalciferol—is present in egg yolks, fish oil and a number of plants. However, natural diets don’t contain adequate amounts.
- **Supplementing with vitamin D**—current upper limit as determined by the U.S. Food and Nutrition Board is 2,000 international units daily—yet the average American currently consumes only 230 IU/per day. A review article in the *American Journal of Clinical Nutrition* this year advocates increasing recommendation up to 10,000 IU/per day of D₃, based on its apparent benefits and the absence of toxicity using this dose.
- **Sufficient evidence**—“There is enough evidence now to conclude that vitamin D intake or production at the rate of 2000-4000 IU/day leading to serum calcidiol (25(OH)D) levels upwards to 60 ng/ml to 80 ng/ml can significantly reduce the burden of both chronic and infectious diseases. Those with darker skin should take higher vitamin D supplementation.” From a presentation by Joseph McWherter, MD entitled Bone Health & Cardiovascular Risk: Vitamin D & vitamin K, given on Clinical Applications for Age Management Medicine, AMMG Conference, May 15-18, 2008, Boca Raton, Florida.
- **Fat-soluble vitamin D benefits**—calcium and phosphorous absorption and utilization as well as having a healthy immune system.
- **Adult vitamin D deficiency**—may lead to osteopenia, osteoporosis, muscle weakness, fibromyalgia and chronic pain states, fractures, common cancers, autoimmune diseases including lupus and rheumatoid arthritis, infectious diseases and cardiovascular disease.

Call toll-free 866.953.1510.

Discussions are always confidential and without obligation.