

Vitamin D Associated with Reduced Risk of Cardiovascular Disease

Source: American Journal of Clinical Nutrition

Cardiovascular disease or heart disease is a class of diseases that involve the heart or blood vessels (arteries and veins). There are several risk factors for cardiovascular disease that are essentially immutable. These are older age, male gender, and a family history of CVD. Additionally, three major risk factors identified include cigarette smoking, dyslipidemia (high cholesterol), and hypertension. Other identified factors associated with increased risk for cardiovascular disease include physical inactivity, sleep problems, diabetes mellitus, rheumatoid arthritis, obesity, excessive intake of alcohol, thrombotic and fibrinolytic factors, elevated homocysteine levels, certain infections and inflammation, exogenously administered estrogens and androgens, certain psychosocial factors, increased fasting glucose, and frequency of migraines. The synergism of the presence of multiple risk factors must also be considered.

Vitamin D is known as the "sunshine" vitamin because it is formed in the body by the action of the sun's ultraviolet rays on the skin. The fat-soluble vitamin is converted in the kidneys to the hormone calcitrol, which is actually the most active form of vitamin D. The effects of this hormone are targeted at the intestines and bones. Decreased vitamin D intake along with not enough sunlight exposure can cause a vitamin D deficiency. Other causes could be inadequate absorption and impaired conversion of vitamin D into its active form. When vitamin D deficiency occurs, bone mineralization is impaired which leads to bone loss. Rickets, osteomalacia, osteoporosis, crohn's disease and cancer are associated with vitamin D deficiency.

A current study investigated the relationship between vitamin D intake and cardiovascular disease in men and women. The study included 74,272 women and 44,592 men who were free of cardiovascular disease and cancer at baseline. The participants were followed up to 12 years. Over the course of the study, it was found that 9,886 incident cases of coronary heart disease and stroke were identified. After adjusting for age and cardiovascular risk factors, a higher intake of vitamin D was associated with a lower risk of cardiovascular disease in men, but not in women. Men who had an intake of at least 600 IU per day had a risk 16 percent lower than men who had an intake of less than 100 IU per day. These findings suggest that further research is needed to confirm these findings and also to investigate the biological basis for potential sex differences.

Sun Q, Shi I, Rimm EB, et al. Vitamin D intake and risk of cardiovascular disease in US men and women. *Am J Clin Nutr.* Jun2011.