

Abstract

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Vitamin D in the prevention and treatment of coronary heart disease.

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PURPOSE OF REVIEW: The pathogenesis of coronary heart disease is of multifactorial origin. Probably, not all risk factors are satisfactorily understood. This article outlines beneficial vitamin D effects on cardiac function and the vasculature. In addition, human data associating serum vitamin D metabolite levels or oral vitamin D dosages or both with coronary heart disease outcome parameters are reviewed.

RECENT FINDINGS: There is accumulating evidence that the vitamin D hormone calcitriol exerts important physiological effects in cardiomyocytes, vascular smooth muscle cells, and the vascular endothelium. Low levels of the calcitriol precursor 25-hydroxyvitamin D are associated with myocardial infarction, congestive heart failure, and calcific aortic stenosis. Deficient calcitriol concentrations probably contribute to the massive vascular calcification seen in chronic kidney disease. In patients with end-stage renal disease and end-stage heart failure, very low-circulating calcitriol levels or nonuse of active vitamin D or both are independently associated with high mortality rates.

SUMMARY: Despite these exciting data, it is still too early to recommend exact dosages for the prevention or therapy of coronary heart disease. Prospective, randomized controlled trials with different amounts of vitamin D and probably with its active form calcitriol are needed to determine whether vitamin D can prevent coronary heart disease events and mortality.

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