



Does Vitamin D Supplementation Reduce Cardiovascular Risk?



Several observational studies suggest an inverse association between vitamin D levels and risk of cardiovascular disease (CVD) events. Low vitamin D levels have been linked to an increased risk of myocardial infarction, stroke, mortality, and heart failure. Vitamin D receptors directly influence calcium influx, muscle relaxation, and diastolic function. In addition, Vitamin D has effects on the renin-angiotensin-aldosterone system and parathyroid hormone and may also influence endothelial function and arterial thrombogenesis.

The use of vitamin D supplementation has increased in the primary care setting, and there has been growing interest in determining whether vitamin D supplementation can help prevent cardiovascular disease. Since there is insufficient data regarding the cardiovascular benefits of vitamin D screening and treatment, the US Preventive Task Force has not made any recommendations regarding the use of vitamin D supplementation to prevent cardiovascular disease.

A meta-analysis was conducted to evaluate the efficacy of vitamin D supplementation in the prevention of cardiovascular disease. Only clinical trials that evaluated long-term supplementation with vitamin D and reported cardiovascular outcomes were included in this analysis. 83,291 patients were included out of which 41669 received vitamin D supplementation and 41622 received placebo.

The researchers found that vitamin D was not associated with reduced risk of major cardiovascular events, stroke/CVA, CVD mortality, or all-cause mortality. There was an absence of benefit for MI, and no reduction in stroke, mortality, or a composite MACE endpoint. Several studies conducted previously have focused on patients with chronic kidney disease as they have low vitamin D levels and are at a greater risk of cardiovascular disease. But in this analysis, no cardiovascular benefit was observed with vitamin D supplementation in these patients either.

Overall, the concept that vitamin D supplementation could help reduce the risk of cardiovascular events and/or help prevent the development of cardiovascular disease were not observed in this analysis and no benefits of vitamin D supplementation could be seen in terms of improved cardiovascular outcomes, reduced cardiovascular events or prevention of cardiovascular disease.

Source: [JAMA](#)

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