

Can Vitamin D actually Lower your Risk for Colorectal Cancer?

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Colorectal cancer is one of the most prevalent causes of cancer related deaths secondary to lung cancer in the United States. A number of factors have been shown to reduce the risk of colorectal cancer development; it has been postulated that there is a strong association between an individual's serum vitamin D level and colorectal cancer risk. Active vitamin D, 25-hydroxyvitamin D induces transcriptional regulation that targets anticancer genes, lowering cancer risk through antiproliferative, pro-apoptotic and antiangiogenic properties. There is a worldwide prevalence of vitamin D deficiency and the Institute of Medicine and the Endocrine Society has defined three thresholds, deficiency at a level of < 20 ng/ml, insufficiency at a range between 21-29 ng/ml and sufficiency measuring > 30 ng/ml. Studies have shown inconsistent results on the effects of increased vitamin D concentration and reduced colorectal cancer risk. Current recommendations for achieving adequate vitamin D consumption are particularly for maintaining bone health. Sixteen studies were examined and ten of the studies including one systematic review and two metanalysis were able to infer an inverse association between increased circulating 25-hydroxyvitamin D levels and reduced colorectal cancer risk. Considering the results of this review and previous studies, there is a strong consideration for the potential benefits of maintaining the populations serum 25-hydroxyvitamin D concentration in adults to a target of > 30 ng/ml or higher for the prevention of colorectal cancer. The Endocrine Society currently recommends a daily supplementation of at least 1500-2000 IU to maintain a concentration of > 30 ng/ml. The effects of optimal vitamin D status on health outcomes other than for bone health should be evaluated and integrated into public health guidance.

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