

Vitamin D and Preventable Cancer Deaths

Can daily vitamin D supplementation lower cancer deaths?

Can an inexpensive supplement save millions of dollars in healthcare spending on cancer treatments? More importantly, can it prevent cancer deaths and suffering?

Randomized clinical trials and meta-analysis have shown a positive effect of vitamin D supplementation on cancer mortality. This study sought to estimate costs of supplementing every adult over age 50 with 1000 IU of vitamin D daily and resultant savings by reducing cancer mortality in Germany. They estimate that almost 30,000 cancer deaths could be prevented and Germany's annual costs for cancer care would be cut by more than \$300 million.



Abstract

- Recent meta-analyses of randomized controlled trials (RCTs) have demonstrated significant reduction in cancer mortality by vitamin D supplementation. We estimated costs and savings for preventing cancer deaths by vitamin D supplementation of the population aged 50+ years in Germany. Our analysis is based on national data on cancer mortality in 2016. The number of preventable cancer deaths was estimated by multiplying cancer deaths above age 50 with the estimated proportionate reduction in cancer mortality derived by vitamin D supplementation according to meta-analyses of RCTs (13%). Saved costs were estimated by multiplying this number by estimated end-of-life cancer care costs (€40 000). Annual costs of vitamin D supplementation were estimated at 25€ per person above age 50. Comprehensive sensitivity analyses were conducted. In the main analysis, vitamin D supplementation was estimated to prevent almost 30 000 cancer deaths per year at approximate costs of €900 million and savings of €1.154 billion, suggesting net savings of €254 million. Our results support promotion of supplementation of vitamin D among older adults as a cost-saving approach to substantially reduce cancer mortality.

There have been multiple links between vitamin D supplementation and potential benefits regarding cancer, mainly in cancer deaths. The studies have shown around a 13% reduction in cancer deaths but did not appear to have any effects on cancer incidence. Vitamin D doesn't seem to prevent cancer from occurring but may be affecting the aggressiveness or the cancer or how likely it is to metastasize. While individual studies often fail to show statistical significance, pooled data in meta-analysis has found possible links. Based on this information, the researchers wanted to look at the cost of supplementing every adult over age 50 in Germany with vitamin D and compare it to the costs of cancer care. They calculated that distributing 1000 IU/day of vitamin D to all adults over age 50 in Germany would save \$302 million annually but more importantly, 321,671 years of life would be saved. Here in the US, we have 118 million people older than 50 and 610,000 die of cancer each year. It is estimated that it would cost \$2.2 billion to distribute the vitamin D but \$3.7 billion would be saved (net savings of \$1.5 billion) and we would prevent 78,000 cancer deaths and save 870,000 years of life. It's remarkable that an inexpensive supplement costing maybe a couple bucks a month could make such a remarkable difference in cancer deaths and lost years of life. While this study is looking at effects on society and the health care system at large, I prefer to look at it from an individual risk perspective. There are very few reasons not to supplement vitamin D if you have concerns about cancer.

Niedermaier, T., Gredner, T., Kuznia, S., Schöttker, B., Mons, U. and Brenner, H. (2021), Vitamin D supplementation to the older adult population in Germany has the cost-saving potential of preventing almost 30 000 cancer deaths per year. Mol Oncol. <https://doi.org/10.1002/1878-0261.12924>