

Can the biofactor vitamin D₃ protect against cancer?

Three meta-analyses of a total of 35 clinical studies from the USA and Asia show that **vitamin D₃** might significantly reduce cancer mortality. Researchers from the German Cancer Research Center in Heidelberg have now transferred these results to Germany and published the following recommendation: The vitamin D₃ supplementation of all people over the age of 50 could reduce the number of cancer deaths by 30,000 per year – while saving the health system money due to fewer cancer treatments.

With over 230,000 people nationwide, one in four deaths in 2019 was tumour-related.¹ According to studies, **vitamin D₃ deficiency** might also be a cause, in addition to other factors. And such a deficiency is not at all rare: almost 62% of the population do not receive a sufficient supply of the **biofactor** vitamin D₃,² with this figure being even higher among elderly individuals.³

These causes can lead to vitamin D₃ deficiency

The possible causes of vitamin D₃ deficiency are many and varied and are triggered by reduced synthesis or intake, as well as an increased requirement for the biofactor, above all in infants, pregnant women, breast-feeding women and senior citizens. In addition, insufficient sun exposure, e.g. due to sunscreens and not enough time spent outdoors, can generally result in insufficient vitamin D₃ synthesis through the skin.^{4,5}

Furthermore, vitamin D₃ absorption can be reduced by chronic intestinal diseases such as Crohn's disease, coeliac disease or liver diseases. In patients with chronic renal insufficiency, more vitamin D₃ is excreted through the kidneys and less active vitamin D₃ is formed, which can also lead to a deficiency of the biofactor. The long-term use of **drugs** such as anti-epileptics, sedatives, glucocorticoids, proton pump inhibitors or cytostatics can also lead to an undersupply of vitamin D₃.

Last but not least, magnesium deficiency can cause vitamin D₃ deficiency, as the two biofactors act synergistically in the body: on the one hand, the biofactor **magnesium** is a co-factor for the conversion of the inactive vitamin D₃ form to the active form, while on the other hand, vitamin D₃ promotes magnesium absorption in the small intestine.

Biofactor Vitamin D₃ – Fewer Cancer Deaths?

“For years, scientists have been studying the influence of vitamin D₃ on the prognosis of diseases outside the skeletal system, including cancer. However, the evidence for preventive effects on tumour diseases has so far been considered insufficient,”⁶ is how experts from the Society for Biofactors (GfB) assess the current study situation.

In 2019, three large meta-analyses⁷ of high-quality clinical studies were published that examined the effect of the vitamin D₃ status on cancer mortality – with the following result: with the vitamin D₃ supplementation of 400 to 2,000 IU daily, the mortality rate across all cancers decreased to the highly significant extent of around 13% compared to placebo, while only a small, statistically insignificant reduction was observed for cancer incidence.

Epidemiologists at the DKFZ (German Cancer Research Center) then carried out model calculations and took into account figures on population density, the costs of cancer therapies and for vitamin D₃ supplements of 1,000 IU per day: By supplementing all people over the age of 50 with the biofactor throughout Germany, the annual number of cancer deaths could be reduced by 30,000, 300,000 life years could be gained and 254 million euros saved due to fewer cancer therapies.⁸

The number of years of life lost from the time of death from cancer was calculated using the mortality tables of the Federal Statistical Office. Strictly speaking, the costs of the vitamin D₃ diagnostics should also be incorporated into the model. However, the DKFZ scientists consider the routine determination of the vitamin D₃ blood level to be unnecessary, as with the “blind” supplementation of 1000 IU per day, an overdose need not to be feared anyway.

Conclusion of the Society for Biofactors (GfB): Consider vitamin D₃ in the treatment of cancer and substitute it if there is a deficiency

The GfB also assesses the results of studies and the model calculation as extremely positive and also points out the frequency of **vitamin D₃ deficiency**. However, for reasons of reimbursability alone, the society advocates supplementing the biofactor only after a deficiency has been shown.

Further information on vitamin D₃ and other biofactors can be found [here](#).

Bibliography:

¹ www.destatis.de/Gesundheit/Todesursachen/_inhalt/

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⁴ Pietrzik K, Golly I, Loew D: Handbuch der Vitamine (Handbook of Vitamins), 2008, p. 275

⁵ Wacker M et al.: Sunlight and Vitamin D: A global perspective for health. Dermato-Endocrinology 2013, 5(1): 51-108

⁶ Muller DC et al.: No association between circulating concentrations of vitamin D and risk of lung cancer: an analysis in 20 prospective studies in the Lung Cancer Cohort Consortium (LC3) Ann Oncol. 2018 Jun, 29(6): 1468-1475

⁷ Keum N et al.: Vitamin D supplementation and total cancer incidence and mortality: a meta-analysis of randomized controlled trials. Ann Oncol. 2019, 30(5): 733-743

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⁸ www.dkfz.de/de/presse/pressemitteilungen/