



# D POWER

## To Fight Cervical Cancer

January is Cervical Cancer Awareness Month

FBL/WD3/INTL/01/26/01

Vitamin D, in addition to its essential role in maintaining calcium and phosphorus homeostasis and bone health, exhibits notable antiviral and immunomodulatory effects. Vitamin D deficiency impairs immune function and heightens susceptibility to infection, which has been strongly associated with the progression of cervical cancer. Vitamin D is also known to enhance radiation sensitivity by modulating the autophagy process. Fermenta, a leading manufacturer of Vitamin D, presents this D-Essence Newsletter to highlight the latest research on the role of Vitamin D in cervical cancer and its associated factors.

### Vitamin D supplementation might improve radiotherapy response in advanced cervical cancer

The impact of Vitamin D supplementation on radiotherapy outcomes in advanced cervical cancer patients was evaluated in a randomized controlled trial. Among 123 subjects, 79.7% in the supplementation group had squamous cell carcinoma and the remaining had adenocarcinoma. After 12 weeks, Vitamin D supplementation was significantly associated with a 32.8 ng/ml and 27.5% higher serum Vitamin D levels and complete response rate, respectively, compared to the control group. Additionally, although not significant, tumor size reduction was -9.6 cm<sup>3</sup> greater with Vitamin D supplementation Vs. control group.

Suardi D et al. Med Sci Monit. 2025;Mar 24;31:e945964

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### Vitamin D supplementation potentially lowers the persistence of high-risk HPV infection



The influence of Vitamin D supplementation on HPV infection was analyzed in a retrospective study that enrolled 512 patients. After 6 months of loop electrosurgical excision procedure, Vitamin D supplementation significantly reduced the persistence rate of high-risk HPV by 20.4% compared to placebo and this trend remained consistent through 12 and 18 month follow-ups. Vitamin D supplementation led to greater improvements in metabolic outcomes (insulin, HOMA-IR and triglycerides), as well as inflammation and immune response, and was associated with a lower overall incidence of adverse reactions Vs. placebo.

Xu C et al. Ab J Reprod Health. 2024 Oct 31;2(8):88-98

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### Vitamin D deficiency possibly correlates with cervicovaginal HPV infection



A systematic review of 7 full-text articles explored the relationship between human papillomavirus (HPV) and serum Vitamin D levels. Almost half of the included studies showed that there was a significant relationship between Vitamin D deficiency and cervicovaginal HPV. Additionally, one study demonstrated that higher cervicovaginal HPV prevalence was associated with less-than-optimal levels of serum Vitamin D (optimal level:  $\geq 30$  ng/mL). Another study displayed that deficiency of Vitamin D metabolites can possibly lead to HPV DNA persistence and related cervical intraepithelial neoplasia (P = 0.009).

Khalil SM et al. BMC Infect Dis. 2024 Jan 13;24(1):80

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