

D POWER

To Assist Immunity

National Immunization Day - 16th March

Vitamin D is essential for bone health and maintaining calcium and phosphorus homeostasis. Beyond this, it acts as an important regulator of the immune system, influencing both innate and adaptive immunity. Research shows Vitamin D affects how the body responds to pathogens and plays a key role in the prevention and progression of acute, chronic and autoimmune diseases. Fermenta, a leading manufacturer of Vitamin D, presents this D-Essence Newsletter to highlight the latest research on the role of Vitamin D in Supporting Immunity.

Maintaining Vitamin D levels might be beneficial for urinary tract health

The association between serum Vitamin D levels and urinary tract infections (UTIs) was evaluated in a case-control study which enrolled 120 children aged 2-18 years. A significantly lower level of Vitamin D was noticed among participants with UTI as compared to the healthy individuals (17.7 ng/mL vs. 37.91 ng/mL). Additionally, 86.2% and 54.8% individuals with Vitamin D deficiency (<20 ng/mL) had pyelonephritis and cystitis infections, respectively, indicating a significant association between infection type and Vitamin D status. For predicting UTI, the optimal cut-off value of serum Vitamin D levels was determined as 20.15 ng/mL.

Piyadah Koushar N et al., *Caspian J Intern Med.*
2023 Oct 15;14(4):653-658

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Vitamin D supplementation may improve outcomes in rheumatoid arthritis



A systematic review and meta-analysis investigated the impact of Vitamin D supplementation on the outcomes of rheumatoid arthritis. Among 11 included studies, Vitamin D supplementation resulted in a significant increase in the serum Vitamin D levels with a weighted mean difference (WMD) of +12.69 compared to the control group. Vitamin D supplementation also significantly improved disease activity [assessed by disease activity score-28 (DAS-28)] vs. control group. Additionally, the C-reactive protein and erythrocyte sedimentation rate were reduced by a WMD of -0.24 and -4.08, respectively, with Vitamin D supplementation vs. control group.

Ranjbar M et al., *Heliyon.*
2023 Feb 4;11(2):e02463

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Vitamin D deficiency potentially increases active tuberculosis risk



A prospective, case-control study assessed the association between Vitamin D deficiency (VDD; <20 ng/ml) and incident active tuberculosis (TB) among 310 adults [TB patients (cases): 62 & subjects without active TB (controls): 248]. Compared to the control group, 73% more patients with TB had VDD. The mean Vitamin D concentration was also significantly lower by -3.2 ng/ml in patients with TB vs. control group. More than half of the TB patients with VDD had multiple lobar involvement. There was an inverse association between absolute Vitamin D level and incident active TB risk.

Hsu MS et al., *J Microbiol Immunol Infect.*
2024 Jun;57(3):490-497

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