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3rd International Conference on FOOD AND NUTRITION

August 25, 2022 | Webinar

# Vitamin D supplementation and multiple health outcomes in Vitamin D deficient population

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**Statement of the Problem:** A potential role for vitamin D supplementation in improving multiple health outcomes is supported by numerous observational studies but need to be confirmed in randomized clinical trials. We wanted to determine the effects of vitamin D supplementation on multiple health outcomes in vitamin deficient children

**Methods:** We conducted randomized, placebo-controlled, clinical trials of vitamin D3 supplementation in schoolchildren of Mongolia to determine whether daily and weekly doses of oral supplementation with vitamin D3 will influence a range of health outcomes among schoolchildren in Mongolia.

**Results:** A total of 8,117 children completed the trial. Supplementation with weekly vitamin D elevated mean 25(OH)D levels to 29.8 ng/ml in the active treatment group compared to 9.7ngml in the placebo group (p=0.001). D supplementation did not influence the risk of latent tuberculosis infection acquisition (LTBI) (P=0.42), incident active tuberculosis (P=0.63) acute respiratory infection (ARI) (p=0.38), hospitalization due to ARI (p=0.38), incident asthma (P=0.32), incident allergic rhinitis (P=0.32) and atopic dermatitis (P=0.39), mean height for age Z- score (p=0.84) and mean BMI for age Z-score (p=0.75) Conclusions: A weekly oral dose of 14,000 IU vitamin D3, administered for 3 years, was safe and effective in elevating 25-hydroxyvitamin D levels into the high physiological range in vitamin D-deficient schoolchildren, but it did not but did not influence any health outcomes studied. This contrasts with positive findings from our previous trials: it is possible therefore that the longer period of vitamin D supplementation (3 years), the weekly dosing regimen and/or the higher dose of vitamin D administered (14,000IU per week) in the current trial may have been less effective in boosting growth than the shorter, lower-dose daily intervention previously investigated.

## Biography

Ganmaa is an Associate Professor at Channing Division of Network Medicine, Department of Medicine, Harvard Medical School and Associate Epidemiologist at Brigham and Women Hospital, Boston, MA. Her research focus is on global health nutrition and respiratory disease and TB. To date, Ganmaa has authored peer-reviewed publications, serves in numerous societies, organizations, and is a member of the editorial board Contemporary Clinical Trials.