INPLASY

Effect of Vitamin D on the Prevention of Respiratory Tract Infections in Children: A Meta-Analysis and Bibliometric Analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 August 2025 and was last updated on 23 August 2025.

INTRODUCTION

Review question / Objective We conducted a meta-analysis and bibliometric analysis, aiming to evaluate the impact of vitamin D on the prevention of respiratory tract infections in children, as well as to analyze past research hotspots and future research trends.

Condition being studied Number of cases of respiratory tract infections, influenza, and tuberculosis (TB).

METHODS

Participant or population Healthy children under 18 years of age.

Intervention Vitamin D supplementation.

Comparator Placebo or regular diet.

Study designs to be included The search strategy were RCTs.

Eligibility criteria (1)Children under 18 years of age; (2) Healthy children without underlying diseases; (3) Vitamin D supplementation or placebo (regular diet); (4) Outcome indicators include the number of cases of respiratory tract infections.

Information sources A comprehensive manual search of the PubMed, Embase and Cochrane databases was conducted in order to select relevant randomised controlled trials. Should the necessity arise to obtain pertinent research data, the authors will be duly contacted.

Main outcome(s) Number of cases of respiratory tract infections.

Quality assessment / Risk of bias analysis We evaluated the methodological quality of the individual studies using the Cochrane risk of bias tool for RCTs.

Strategy of data synthesis The estimates are expressed as odds ratio (OR) with a 95% confidence interval (CI).

Subgroup analysis The study conducted subgroup analysis based on vitamin D supplementation duration (≤ 6 months and > 6 months), age stratification (≤ 12 years and > 12 years), and administration frequency (daily or weekly).

Sensitivity analysis We conducted sensitivity analyses to investigate the in fluence of a single study on the overall pooled estimate of each predefined outcome.

Language restriction None.

Country(ies) involved China.

Keywords Vitamin D; Children; Respiratory tract infection; Meta-analysis; Bibliography.

Contributions of each author

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