

# Early life Vitamin D supplementation for preventing allergic diseases: A systematic review and meta-analysis of randomized controlled trials

chao luo<sup>1</sup>, dongdong hong<sup>2</sup>, yaning sun<sup>1</sup>, zuojing zeng<sup>1</sup>, ying liu<sup>1</sup>, and shunlin peng<sup>1</sup>

<sup>1</sup>Hospital of Chengdu University of Traditional Chinese Medicine

<sup>2</sup>Hospital of Chengdu University of Traditional Chinese Medicine

October 8, 2020

## Abstract

**Abstract Background:** It is still unclear if and to what extent antenatal or early postnatal or infants vitamin D supplementation would affect the development of allergy diseases later in life. **Methods:** Randomized controlled trials about vitamin D supplementation in pregnant or healthy children from birth to five years of age to prevent allergic diseases were selected. Descriptive and quantitative information was extracted. Relative risk estimates were synthesized under a fixed or random effects model. Heterogeneity was assessed by using the I<sup>2</sup> metric. Grading of Recommendations Assessment, Development and Evaluation (GRADE) was used to assess certainty of findings. MEDLINE(PubMed), EMBASE(OVID), and The Cochrane Central Register of Controlled Trials were searched up to March 1st 2020. Eligibility criteria for selecting studies: (1) the design was an randomized controlled trial(RCT); (2) healthy pregnant or lactating females and/or healthy children from birth to five years of age;(3) vitamin D protocol was specified in the treatment group; (4) outcomes were asthma/wheeze, allergic rhinitis, eczema(atopic dermatitis), food allergy and atopic sensitization; (5) the study contained relevant data to calculate the effect size. **Results:** In the present systematic review and meta-analysis, the available published randomized evidence on vitamin D supplementation in pregnant or infants for preventing allergic diseases across 7 RCTs were systematically assessed. Our meta-analysis showed that non-significant trends between vitamin D supplementation in pregnant or infants and the primary prevention of allergic diseases in offspring. The Grade quality assessment for all these conclusions indicated an evidence confidence level of low. **Conclusions:** In terms of practice implications, the data in this review should not make patients, doctors, and public health authorities confident that vitamin D supplementation in pregnant or infants or young children can primarily prevent allergic diseases. Systematic review registration: PROSPERO (CRD42020167747)

## Hosted file

P-3-paper.pdf available at <https://authorea.com/users/365342/articles/485479-early-life-vitamin-d-supplementation-for-preventing-allergic-diseases-a-systematic-review-and-meta-analysis-of-randomized-controlled-trials>

## Hosted file

table 1-2.pdf available at <https://authorea.com/users/365342/articles/485479-early-life-vitamin-d-supplementation-for-preventing-allergic-diseases-a-systematic-review-and-meta-analysis-of-randomized-controlled-trials>

## Hosted file

figure1-8.pdf available at <https://authorea.com/users/365342/articles/485479-early-life-vitamin-d-supplementation-for-preventing-allergic-diseases-a-systematic-review-and-meta-analysis-of-randomized-controlled-trials>

analysis-of-randomized-controlled-trials