

Vitamin D supplementation improved growth in children and adolescents: A systematic review and meta-analysis of randomized controlled trials

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Abstract

High prevalence of obesity and vitamin D deficiency are two health concerns in childhood and adolescence. The effects of vitamin D supplementation on anthropometric indices were evaluated in several trials, but the results were inconclusive. The present systematic review and meta-analysis aimed to evaluate the effects of vitamin D supplementation on anthropometric indices of children and adolescents. A systematic search was undertaken in online databases (PubMed, Embase, Scopus, Web of Science and Cochrane Library) to detect the relevant randomized controlled trials (RCTs) assessing the effects of vitamin D supplementation on body composition in children and adolescents up to July 2019. In the case of high heterogeneity among studies, fixed or random effects models were used to calculate standardized mean difference (SMD) and its 95% confidence interval (CI). Potential publication bias was checked using Egger's regression tests. After excluding irrelevant papers, five RCTs which considered as eight separate studies were included in this meta-analysis. Pooled results of the present study stressed on a significant increase in body weight (SMD = 0.148, 95% CI: [0.009, 0.286], $p = 0.037$), fat free mass (SMD = 0.384, 95% CI: (0.119, 0.649), $p = 0.004$), and serum 25(OH)D level (SMD = 1.071, 95% CI: (0.591, 1.551), $p < 0.0001$) compared to the controls. However, no significant change was resulted in height, Body Mass Index (BMI) following vitamin D supplementation. This meta-analysis suggest vitamin D supplementation for improvement of body composition in children and adolescents.

functional foods and nutraceuticals that can improve various metabolic disorders and has obtained significant outcomes regarding important biomarkers. He also eminence in the field of meta-analysis studies.

Speaker Publications:

1. Jalali, Mohammad & Ranjbar, Tahereh & Mosallanezhad, Zahra & Mahmoodi, Marzieh & Moosavian, Seyedeh & Ferns, Gordon & Jalali, Ronak & Sohrabi, Zahra. (2020). Effect of Propolis supplementation on serum CRP and TNF- α levels in adults: A systematic review and meta-analysis of clinical trials. *Complementary Therapies in Medicine*. 50. 102380. 10.1016/j.ctim.2020.102380.
2. Jalali, Mohammad & Karamizadeh, Maliheh & Ferns, Gordon & Moosavian, Seyedeh & Zare, Morteza & Akbarzadeh, Marzieh. (2020). The Effects of Cashew Nut Intake on Lipid Profile and Blood Pressure: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Complementary Therapies in Medicine*. 50. 102387. 10.1016/j.ctim.2020.102387.
3. Jalali, Mohammad & Mahmoodi, Marzieh & Moosavian, Seyedeh & Imanieh, Mohammad & Mosallanezhad, Zahra & Jalali, Ronak. (2019). The effects of curcumin supplementation on liver function, metabolic profile and body composition in patients with non-alcoholic fatty liver disease: A systematic review and meta-analysis of randomized controlled trials. *Complementary Therapies in Medicine*. 48. 102283. 10.1016/j.ctim.2019.102283.

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Biography:

Jalali is an Iranian nutritionist, which receive honorary doctorate as health education at the age of 20 years old and also has a traditional medicine certificate from Shiraz University of Medical Sciences with score 100. He is a member of Nutrition Research Center of Shiraz, Iran. He is specifically working on