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The effect of high protein products consumption on albumin serum in stunted children: A systematic review and meta-analysis

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Abstract

Objective: This study aimed to evaluate the effect of high-protein products on serum albumin levels for preventing stunting in children, by combining evidence from multiple eligible studies to provide a more precise estimate of the intervention's impact. **Data Sources:** A comprehensive search was carried out in Web of Science, Scopus, PubMed, and Semantic Scholar, covering publications between 2015 and 2024. **Methods:** The review followed PRISMA guidelines for systematic reviews and meta-analyses, using Review Manager (RevMan) 5.4 software. Study selection was guided by the PICOTS framework (participants, intervention, comparison, outcomes, timing, and study design). Eligible studies included clinical trials assessing the effects of high-protein products on serum albumin

levels in children with stunting. Results: Meta-analysis using RevMan 5.4 showed considerable heterogeneity ($I^2 = 92\%$, $\chi^2 = 59.29$, $p < 0.01$). The intervention demonstrated a positive trend toward improving serum albumin levels in stunted children, although the overall effect was not statistically significant. Funnel plot analysis indicated no significant publication bias, suggesting that the results of the included studies are reasonably reliable, although potential limitations should still be considered. Conclusions: The findings demonstrate that adequate protein supplementation improves serum albumin levels and plays an important role in supporting growth and preventing stunting. © (2025), (Mattioli 1885). All rights reserved.

Author keywords

child malnutrition; nutrition; protein; serum albumin

Indexed keywords

EMTREE drug terms

albumin; alpha tocopherol; ascorbic acid; iron; Moringa oleifera extract; protein; zinc

EMTREE medical terms

albumin blood level; Article; calcium intake; child; data source; female; food frequency questionnaire; human; infant; male; malnutrition; meta analysis; pediatric patient; protein diet; protein intake; stunting; systematic review

Chemicals and CAS Registry Numbers

Unique identifiers assigned by the Chemical Abstracts Service (CAS) to ensure accurate identification and tracking of chemicals across scientific literature.

alpha tocopherol	1406-18-4, 1406-70-8, 52225-20-4, 58-95-7, 59-02-9
ascorbic acid	134-03-2, 15421-15-5, 50-81-7
iron	14093-02-8, 53858-86-9, 7439-89-6
protein	67254-75-5
zinc	7440-66-6, 14378-32-6

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