

Prenatal High-Dose Vitamin D Supplementation and Childhood Atopic Dermatitis: Study Findings

Based on the attached study by Brustad et al. (2025) published in the British Journal of Dermatology, this secondary analysis of a randomized clinical trial examined prenatal vitamin D supplementation and its effects on childhood atopic dermatitis until age 6 years. However, the specific quantitative results regarding atopic dermatitis reduction are not fully detailed in the available search results, as this appears to be a very recently published study.

Vitamin D Dosing Protocol

The study was based on the COPSAC2010 randomized controlled trial, which employed the following vitamin D supplementation protocol:

High-dose group: 2,800 IU/day total vitamin D3, consisting of 2,400 IU vitamin D3 supplementation plus 400 IU from a standard multivitamin^{[1] [2]}.

Standard-dose group: 400 IU/day total vitamin D3 from multivitamin alone (placebo for the additional supplementation)^{[1] [2]}.

The supplementation period extended from gestational week 24 (range 22-26 weeks) until one week postpartum, representing approximately 3.5 to 4 months of intervention^{[2] [3]}.

Study Population and Design

The trial included 623 pregnant women from Denmark who were randomized in a 1:1 ratio between the high-dose and standard-dose vitamin D groups^[2]. Exclusion criteria included gestational age above 26 weeks, daily vitamin D intake exceeding 600 IU, or presence of endocrine, cardiovascular, or nephrological disorders^[2].

Maternal Vitamin D Response

The supplementation successfully increased maternal 25(OH)D levels, with post-interventional measurements showing an increase from 31 ng/ml to 43 ng/ml in the COPSAC2010 cohort^[1]. This demonstrates effective absorption and biological activity of the supplementation protocol.

Limitations in Available Results

While the attached study specifically focuses on atopic dermatitis outcomes through age 6 years, the search results do not provide the complete quantitative findings regarding the magnitude of atopic dermatitis reduction. The study represents a secondary analysis of the COPSAC2010 trial data, but the specific effect sizes, confidence intervals, and statistical significance for atopic dermatitis outcomes are not detailed in the available abstracts.

Comparative Context

For context, other prenatal vitamin D supplementation studies have shown varying results. The MAVIDOS study, which used 1,000 IU/day cholecalciferol during pregnancy, demonstrated a protective effect against infant eczema at 12 months with an odds ratio of 0.55 (95% CI, 0.32-0.97; P=0.04), representing approximately a 45% reduction in risk^[4] ^[5]. However, this effect was not sustained at 24 or 48 months of age^[5] ^[6].

Clinical Implications

The COPSAC2010 trial's higher vitamin D dose (2,800 IU/day vs. 1,000 IU/day in MAVIDOS) may provide different therapeutic outcomes, but the specific magnitude of atopic dermatitis reduction from this recent secondary analysis requires access to the full publication to determine the precise quantitative benefits achieved with this supplementation protocol.

*
*

1. <https://pmc.ncbi.nlm.nih.gov/articles/PMC5659607/>
2. [https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370\(21\)00535-6/fulltext](https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(21)00535-6/fulltext)
3. <https://jamanetwork.com/journals/jama/fullarticle/2484338>
4. <https://www.uspharmacist.com/article/vitamin-d-supplementation-during-pregnancy-reduces-infant-eczema-risks>
5. <https://www.obgproject.com/2022/08/05/rct-results-does-antenatal-vitamin-d-supplementation-impact-risk-of-atopic-eczema-in-infants/>
6. <https://www.uspharmacist.com/article/vitamin-d-during-pregnancy-could-reduce-infant-eczema>