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## Early life vitamin D status and the development of infant eczema

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A “vitamin D hypothesis” has been proposed to explain the increased prevalence of eczema in regions with higher latitude. There is evidence that vitamin D acts through multiple pathways that influence the risk of eczema development. Most notably, this includes effects on skin barrier function, early immune development and bacterial defence. These biological effects are in keeping with observational studies that have indicated a link between vitamin D status and eczema outcomes, including lower serum vitamin D concentrations associated with increased incidence and severity of eczema symptoms. Measurements of cord blood 25-hydroxyvitamin D [25(OH)D] concentrations in infants, with a hereditary risk of allergic disease, have found a higher cord blood 25(OH)D concentration appears to be associated with reduced risk of eczema in early childhood. This has now been observed in two separate Australian cohorts, in Adelaide (n=270) at latitude of 35° South and in Perth (n=231) at latitude of 32° South. In these two Australian cohorts, no associations between cord blood 25(OH)D concentrations and development of allergic sensitisation, allergic rhinitis or asthma in early childhood until 3 years of age were found. Several randomised controlled trials of early life vitamin D supplementation for the prevention of eczema in infancy are now underway.

### Biography

Debra J Palmer (BSc, BND, PhD) is Head of the Childhood Allergy and Immunology Research Team at the University of Western Australia. She is undertaking research in the area of nutritional strategies for allergy prevention. Her current research activities include conducting randomised controlled trials focusing on nutritional interventions for the prevention of allergic disease, including 1) maternal fish oil supplementation during pregnancy, 2) optimal exposure of egg protein through breast milk to infants during lactation 3) optimal timing of egg introduction into the solid food diet of infants and 4) vitamin D oral supplementation to infants.

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