

VITAMIN D SUPPLEMENTATION IN REDUCING THE RISK OF VITAMIN D INSUFFICIENCY DURING INFANCY

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Background/Introduction

Infants in Adelaide South Australia may be at risk for vitamin D insufficiency due to limited sun exposure and poor vitamin D content in breastmilk. This evidence-based review critically examines the evidence surrounding the efficacy of vitamin D supplementation in the general mother-infant population to reduce the risk of vitamin D insufficiency in infants.

Methods

A structured search through Accesss; BMJ Clinical Evidence; Physicians Information and Education Resource (PIER); Evidence Updates from BMJ; Pubmed; Medline; and Turning Research into Practice (TRIP) was undertaken to find evidence concerning the efficacy of supplementation in reducing the risk of vitamin D insufficiency in infants.

Results

One valid randomised trial was retrieved which compared serum vitamin D in infants assigned to one of three groups: Placebo; low dose vitamin D3 (1000 international units [IU] maternal supplementation from 26-30 weeks gestation, then 400 IU daily infant supplementation); and high dose vitamin D3 (2000 IU and 800 IU correspondingly). Critical appraisal revealed both low and high dose intervention reduced the risk of insufficiency most markedly at birth and at two months of age. However the precision of risk reduction estimates was unable to be calculated due to insufficient sample sizes. No adverse events (defined as hypercalcaemia) were observed in any mother or infant.

Conclusion

The best available evidence suggests supplementation during pregnancy in conjunction with infant supplementation from birth may reduce the risk of vitamin D insufficiency in infants without causing hypercalcaemia. Although crude estimates of absolute risk reductions are impressive, further studies are needed to establish precision of estimates and address efficacy in particular groups including exclusively breastfed infants. It is possible that routine practice of vitamin D supplementation for prospective mothers and their infants in Adelaide may be beneficial in preventing vitamin D insufficiency in this infant population.

References

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