

TITLE: EFFECT OF MATERNAL VITAMIN D SUPPLEMENTATION ON BREAST-FEEDING INFANTS' GROWTH AND BODY COMPOSITION

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LEARNING OUTCOME: To measure the benefits of Vitamin D supplementation in lactating women on the growth of their breastfed infants.

TEXT: Hypovitaminosis D remains prevalent among US lactating women, despite twice the Dietary Reference Intake (DRI) of Vitamin D (200 International Units (I.U.)) in prenatal vitamins (PNV) and fortification of our food supply. We hypothesized that in a warm US climate (Charleston, SC), lactating women remain at risk for hypovitaminosis D. We also explored the influence of maternal Vitamin D supplementation 20 times the DRI (which has been proven safe) on infant growth and fat accretion. Twenty-five mothers were randomized to either 1600 I.U. (controls) or 3600 I.U. (intervention group) daily oral D2 at 1 month (baseline) until 4 months postpartum. All women received a standardized PNV containing 400 I.U. D3/day. Maternal serum circulating 25(OH)D3 was drawn at baseline. Infant whole-body Dual Beam X-Ray Absorptiometry scans and growth parameters were obtained at baseline and at 4 months of age. Information on maternal and infants diet, sunlight exposure and activity were also collected to evaluate environmental factors that affect Vitamin D status. Results indicated that 10 mothers were Vitamin D deficient at baseline (25(OH)D < 20 ng/mL), and 6 exhibited marginal deficiency (21-30 ng/mL). Infants from the interventional group increased percent body fat significantly more than the control group (8.2±3.2 % vs. 5.1±3.8 %, p<0.05). Interventional group infants also gained greater head circumference (0.27 inches) and weight (0.59 pounds), though not significantly. Findings indicate that lactating women from warm US climates are susceptible to hypovitaminosis D. Daily maternal supplementation of 3600 I.U. is safe and may improve infant growth and fat accrual.

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