In mothers supplementing with 2000 IU/day of vitamin D, nearly all (98%) unsupplemented breastfed infants are protected against vitamin D deficiency.

High level of Vitamin D Supplementation (2000 IU) may be necessary to protect unsupplemented breastfed infants from vitamin D deficiency

Essentials of Health

Vitamin D supplementation is recommended during pregnancy. But after birth, the ability to maintain healthy vitamin D levels in breastfed infants is more difficult, so vitamin D supplementation is generally recommended for breastfed infants.

In a new study published online in the *American Journal of Clinical Nutrition*, researchers sought to determine the effect of three different doses of maternal vitamin D supplementation on infant serum vitamin D levels when taken during pregnancy and continuing for 8 weeks after birth.

The study included 226 normally healthy pregnant women who were randomly assigned to receive vitamin D dosages of 400 IU, 1000 IU, and 2000 IU per day from the second trimester until 8 weeks postpartum. The infants were not given vitamin D supplementation. Blood was collected for analysis at 8 weeks after birth.

The average serum vitamin D level in infants whose mothers took 2000 IU/day was higher (75 mmol/L or 30 ng/ml) than in 1000 IU/day group (52 mmol/L or 20.8 ng/ml) and the 400 IU/day group (45 mmol/L or 18 ng/ml). Only 2% of the infants born to mothers supplemented with 2000 IU were considered deficient (<30 mmol/L or 12 ng/ml) compared to 16% and 43% in the 1000 IU and 400 IU group respectively. Less than 15% of the infants in the 1000 IU and 400 IU group reached a vitamin D level over 75 mmol/L (30 ng/ml) compared to 44% born to the group supplemented with 2000 IU/day. The mothers supplemented with 2000 IU/day had an average vitamin D level of 88 mmol/L (35.2 ng/ml) at 8 weeks postpartum, while the mothers taking 1000 IU and 400 IU had lower average levels at 78 mmol/L (31.2 ng/ml) and 69 mmol/L (27.6 ng/ml) respectively.

The results of this study indicate that supplementation with 2000 IU/day is required beginning in gestation and during the first 8 weeks of breastfeeding to protect 98% of unsupplemented infants against vitamin D deficiency. Nearly half of unsupplemented infants of mothers taking 400 IU/day were vitamin D deficient after 8 weeks of breastfeeding.

Kaitlin M March et al. Maternal vitamin D3 supplementation at 50 µg/d protects against low serum 25-hydroxyvitamin D in infants at 8 wk of age: a randomized controlled trial of 3 doses of vitamin D beginning in gestation and continued in lactation. First published July 8, 2015, doi: 10.3945/ajcn.114.106385.