# Mother's Vitamin D Supplement May Benefit Infant

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CHARLESTON, S.C. — Give breast-feeding women enough vitamin D and you may supplement their babies, too, according to the results of a small but promising pilot study presented at a pediatric meeting sponsored by the Medical University of South Carolina.

"Our question was: 'Would direct vitamin D supplementation meet the needs of both the mother and her nursing infant?' " said Dr. Carol L. Wagner of the department of neonatology at the university, in Charleston.

Insufficient vitamin D causes many problems, primarily a lack of calcium absorption that can lead to bone loss. In addition, recent research suggests a link between insufficient vitamin D and immune system disorders such as diabetes, Dr. Wagner said.

People in the developed world are at risk for vitamin D deficiency because of a primarily indoor lifestyle that has limited adequate vitamin D intake from sunlight, she added.

Data from several recent studies suggest that doses of vitamin D that are significantly higher than the current recommended daily allowance will not cause toxicity and are in fact needed for adequate circulating 25-hydroxyvitamin D concentrations (25[OH]D).

To determine whether giving mothers high doses of vitamin D provides adequate 25(OH)D for both mothers and infants without toxicity to either, Dr. Wagner and colleagues randomized 18 breast-feeding women to receive 400 IU or 6,400 IU of vitamin $D_3$ as a daily pill for 6 months starting at 1 month post partum.

The mothers who were randomized to 6,400 IU of vitamin $D_3$ showed a substantial increase in circulating calcium levels with no adverse effects.

In addition, compliance rates were more than 90% because the mothers said that they were more likely to remember to take a pill themselves than to give supplements to their babies.

The infants whose mothers took 400 IU received their own supplement of 300 IU daily, while the infants whose mothers took 6,400 IU received a placebo supplement.

"What we found was a wonderful increase," in infant 25(OH)D levels from breast milk alone, Dr. Wagner said.

After 6 months, the average 25(OH)D level was 47 ng/mL in the mothers who received 6,400 IU and 46 ng/mL in their babies. By comparison, the average 25(OH)D level was 38 ng/mL in the mothers who received 400 IU and 43 ng/mL in their babies. There were no adverse events in either mother or infant related to vitamin D toxicity.

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"Supplementing the mom with high-dose vitamin D is still considered unproven," Dr. Wagner said. "We think it is safe, but we have to study it in large numbers." A study of 389 lactating women at sites in Charleston, S.C., and Rochester, N.Y., is planned, and the researchers will assess factors including bone mineral density and immune function.

For now, Dr. Wagner encourages physicians to recommend vitamin D supplementation for breast-feeding infants, but if the circulating vitamin D levels in the mothers are 50 ng/mL or higher, the infants are probably getting enough, too. Strive for circulating 25(OH)D levels of at least 30 ng/mL in all patients, she emphasized.

The American Academy of Pediatrics currently recommends vitamin D supplementation for all breast-fed infants because mother's milk is generally deficient in vitamin D. But 25% of the vitamin D in lactating women goes into breast milk, and it seems that increasing vitamin D in mothers results in adequate vitamin D for the breast-fed infant, Dr. Wagner explained.

Because a mother is the only source of vitamin D for her developing fetus and the primary source for a breast-feeding infant, more research is needed on whether increasing maternal vitamin D will help infants, too. ■