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Vitamin D Deficiency Puts 40 percent of US Infants and Toddlers At Risk

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TUESDAY, June 3 (HealthDay News) -- At least 40 percent of American infants and toddlers aren't getting enough vitamin D, according to researchers from Children's Hospital in Boston.

Twelve percent of the youngest children in the United States are already deficient in vitamin D, and another 28 percent are at risk for vitamin D deficiency, according to the study, which appears in the June issue of the Archives of Pediatrics and Adolescent Medicine.

Because human breast milk lacks sufficient vitamin D, the number of babies in the research sample being breast-fed were important to the findings.

"These data underscore the fact that breast-fed infants should be supplemented with vitamin D," said study author Dr. Catherine Gordon, director of the bone health program at Children's Hospital in Boston. She added that mothers who are breast-feeding often need vitamin D supplements as well.

Breast-feeding is a known risk factor for low vitamin D levels in infants, which is why many pediatricians routinely recommend vitamin D supplementation for breast-fed infants. Other factors that may contribute to low levels of vitamin D include not drinking enough vitamin D-fortified milk (for toddlers), staying out of the sun or using sunscreen.

Vitamin D, also known as the sunshine vitamin, is produced naturally when the body reacts to sunlight. However, the use of sunscreen and advice to stay out of the sun -- which is important for preventing skin cancer -- may also be reducing levels of vitamin D in people. Few foods naturally contain vitamin D, which is essential for strong bones because it helps the body absorb calcium.

In addition to helping maintain bone health, Gordon said that vitamin D also appears to play a role in maintaining the immune system and that people with low levels of vitamin D may be more susceptible to autoimmune diseases, such as type 1 diabetes and multiple sclerosis, and to certain cancers.

Previously, Gordon and her colleagues studied vitamin D levels in adolescents and found very high levels -- about 42 percent -- of vitamin D deficiency in teens. That finding made them interested in assessing levels in younger children.

The current study included 380 children between 8 and 24 months old. About 80 percent were from urban areas, and the majority of the youngsters were black or Hispanic, according to the study. However, the study made no association between skin pigmentation and vitamin D levels.

For this study, the researchers defined severe vitamin D deficiency as blood levels of less than 8 nanograms per milliliter (ng/mL), vitamin D deficiency as less than 20 ng/mL and suboptimal as less than 30 ng/mL. Gordon said there is some debate within the medical community about what truly signifies vitamin D deficiency, but that they felt current evidence supports the levels they used, and less than 20 ng/mL is the level her hospital uses as a cut-off point.

In an accompanying editorial, Dr. James Taylor, a professor of pediatrics at the University of Washington, said that although he believed the study was well done, Gordon and her colleagues used a "higher cut-off" than what has been used by other researchers.

But, he added, because Gordon's team found X-ray evidence of low bone density in children who fell into their category of low levels of vitamin D, "it might be that this might be an indication of long-term problems. If this is the case, then Gordon and colleagues might have picked the right definition. However, it might be that for many of the children with osteopenia [low bone density], the changes are transient and not indicative of disease. Time and more research will tell."

The key findings from the study, according to Gordon are:

Breast-feeding without vitamin D supplementation is a risk factor for vitamin D deficiency. A higher body-mass index was associated with a risk of vitamin D deficiency. There was no association between the seasons -- an indication of possible sun exposure -- and vitamin D deficiency.There was no association between skin pigmentation and vitamin D deficiency.Consumption of vitamin D-fortified milk confers protection against deficiency.

Gordon said it's very difficult to consume too much vitamin D, so she recommends vitamin D supplements for breast-feeding infants and lactating mothers. She also recommends a multivitamin containing vitamin D for older children.

Taylor wasn't as convinced about the need for routine supplementation, however. "I think that more research is needed before routine vitamin D supplementation is recommended for all children," he said.

More information

To learn more about vitamin D, visit the government's Office of Dietary Supplements.

SOURCE: Catherine Gordon, M.D., M.Sc., director, bone health program, Children's Hospital, Boston, Mass.; James Taylor, M.D., professor, pediatrics, University of Washington, Seattle; June 2008Archives of Pediatric and Adolescent Medicine