Dietary Vitamin D Goal Expected to Double

BY SHERRY BOSCHERT

SAN FRANCISCO — The first update in recommendations for dietary intake of vitamin D since 1997 is expected in May and probably will include a conservative change from the status quo, according to one expert.

The Institute of Medicine's Food and Nutrition Board has been reviewing the literature, including consideration of associations between serum vitamin D levels and disease indicators.

"The grapevine says they are going to come in very conservative. They are going to require evidence from randomized, controlled trials, and those don't really exist today," Dr. Neil Binkley said at a meeting sponsored by the American Diabetes Association.

The current Dietary Reference Intake (or Recommended Dietary Allowance) describes "adequate" intake as 200 IU/day for people up to age 50 years, 400 IU/day for those aged 51-70 years, and 600 IU/day for people older than 70 years.

'If we truly do need 1,000, 2,000, or 4,000 IU/day, that means you'd need to drink between 10 and 40 glasses of milk per day to get your vitamin D requirement.'

Dr. Binkley of the University of Wisconsin in Madison expects the new intake recommendation for older adults to roughly double, from 400 IU/day to 800 or maybe 1,000 IU/day.

"This will be an evolution," he said. "I think the next iteration coming out in May is going to be a step up, but it's probably not going to get us all the way there."

Recent data suggest that much higher levels should be consumed daily to keep serum 25-hydroxyvitamin D levels (25[OH]D) in desired ranges, he explained. Generally, levels lower than 10 ng/mL indicate vitamin D deficiency, 10-30 ng/mL reflects vitamin D insufficiency, and a 25(OH)D level above 30 ng/mL is considered optimal.

Optimal levels may differ by bodily system, he noted. Serum 25(OH)D levels greater than 40 ng/mL may be best for bone health, whereas leg function appears to be better with levels above 38 ng/mL. But a level above 36 ng/mL has been associated with reduced risk for colorectal cancer, and levels of 36-40 ng/mL have been associated with lower risk for periodontal disease.

One study calculated that 2,600 IU/day of vitamin D supplementation would be needed to ensure that 97.5% of older women have 25(OH)D levels at or above desirable levels (J. Nutr. 2006;136:1123-6).

Other experts recommend that between 2,000 and 4,000 IU/day be consumed to reduce risks for cancer and autoimmune disease, Dr. Binkley said.

He aims for levels above 40 ng/mL in his patients to consistently hit targets above 30 ng/mL, he said.

As a general rule of thumb, for every 1,000 IU of supplemental vitamin D_3 ingested, circulating 25(OH)D goes up by roughly 6 ng/mL, he said. For a patient with a serum 25(OH)D level of 20 ng/mL, taking 2,000 IU/day of vitamin D_3 would boost serum levels to about 32 ng/mL, and more than 3,000 IU/day would be needed to reach 40 ng/mL.

People are unlikely to get adequate vitamin D from sunlight, and fortified foods contain roughly 40-100 IU per serving. "If we truly do need 1,000, 2,000 or 4,000 IU/day, that means you'd need to drink between 10 and 40 glasses of milk per day to get your vitamin D requirement" at current levels of food fortification, he said. "I'm hopeful that after the Institute of Medicine meets, food fortification will go up," he added.

The American Academy of Pediatrics in 2008 recommended that children and adolescents get 400 IU/day of vitamin D, double the current Dietary Reference Intake. The National Osteoporosis Foundation recommends that people up to age 50 ingest 400-800 IU/day, and that adults aged 50 or older get 800-1,000 IU/day.

Observational studies suggest that low vitamin D levels are associated with increased risk for diabetes. Several studies found that children who received vitamin D supplementation had a lower risk for developing type 1 diabetes, and the Nurses Health Study found an association between low vitamin D status and higher risk for type 2 diabetes over 20 years of follow-up.

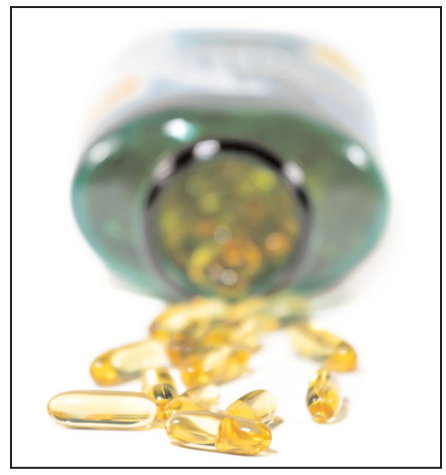
Two prospective studies with 36 patients each found no significant effect of vitamin D supplementation on diabetes risk, however, but these studies were too small, Dr. Binkley said.

A post hoc analysis of a randomized, controlled trial of 800 IU/day of vitamin D for fracture prevention in 3,314 women over age 70 found no protective effect against the development of type 2 diabetes, but compliance with vitamin D supplements in the trial was poor, he noted (Age Ageing 2009;38:606-9).

The Women's Health Study also found no significant reduction in risk for diabetes after a median 7-year follow-up in 33,951 women randomized to 1,000 mg/day of calcium plus 400 IU/day of vitamin D or placebo (Diabetes Care 2008;31:701-7). The vitamin D dose was too low, Dr. Binkley said, and the compliance rate was only around 60%.

"We need larger studies, with higher vitamin D doses," he said.

Dr. Binkley said he has no conflicts of interest related to these topics. ■



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