

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)

'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.'

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.

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 au-

toimmune 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 D₃ 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 D₃ 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.



Indication

FLECTOR® Patch (diclofenac epolamine topical patch) 1.3% is indicated for the topical treatment of acute pain due to minor strains, sprains, and contusions.

Carefully consider the potential benefits and risks of FLECTOR® Patch and other treatment options before deciding to use FLECTOR® Patch. Use the lowest effective dose for the shortest duration consistent with individual patient treatment goals.

Important Safety Information

Cardiovascular (CV) risk

- NSAIDs may cause an increased risk of serious CV thrombotic events, myocardial infarction, and stroke, which can be fatal. This risk may increase with duration of use. Patients with CV disease or risk factors for CV disease may be at greater risk
- FLECTOR® Patch is contraindicated for the treatment of perioperative pain in the setting of coronary artery bypass graft surgery

Gastrointestinal (GI) risk

- NSAIDs cause an increased risk of serious GI adverse events at any time during use and without warning symptoms including bleeding, ulceration,

and perforation of the stomach or intestines, which can be fatal. Elderly patients are at greater risk of serious GI events

FLECTOR® Patch is contraindicated in patients with known hypersensitivity to diclofenac. FLECTOR® Patch should not be given to patients who have experienced asthma, urticaria, or allergic-type reactions after taking aspirin or other NSAIDs. Severe, rarely fatal, anaphylactic-like reactions to NSAIDs have been reported in such patients.

FLECTOR® Patch should not be applied to nonintact or damaged skin resulting from any etiology, eg, exudative dermatitis, eczema, infected lesion, burns, or wounds.

NSAIDs, including FLECTOR® Patch, can lead to new onset or worsening of hypertension, contributing to increased incidence of CV events. Fluid retention and edema have been observed in some patients taking NSAIDs. Use with caution in patients with hypertension, fluid retention, or heart failure.

Elevations of one or more liver tests may occur during therapy with FLECTOR® Patch. If abnormal liver tests persist or worsen, if clinical signs and/or symptoms

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 supple-

mentation 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 reduc-

tion 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. ■



The National Osteoporosis Foundation recommends that adults younger than 50 years ingest 400-800 IU/day of vitamin D. Those aged 50 years or older need 800-1,000 IU/day.

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consistent with liver disease develop, or if systemic manifestations occur, FLECTOR® Patch should be discontinued immediately.

Long-term administration of NSAIDs has resulted in renal papillary necrosis and other renal injury. Renal toxicity has also been seen in patients in whom renal prostaglandins have a compensatory role in maintaining renal perfusion. FLECTOR® Patch is not recommended in patients with advanced renal disease. Anemia is sometimes seen in patients receiving NSAIDs, and platelet inhibition has been shown to prolong bleeding times.

NSAIDs, including FLECTOR® Patch, can cause serious skin adverse events without warning such as exfoliative dermatitis, Stevens-Johnson Syndrome, and toxic epidermal necrolysis, which can be fatal. Patients should be informed about the signs and symptoms of serious skin manifestations, and use of the drug should be discontinued at the first appearance of skin rash or any other sign of hypersensitivity.

Overall, the most common adverse events associated with FLECTOR® Patch were skin reactions (pruritus, dermatitis, burning, etc) at the site of treatment, GI disorders (nausea, dysgeusia, dyspepsia, etc), and

nervous system disorders (headache, paresthesia, somnolence, etc).

In late pregnancy, as with other NSAIDs, FLECTOR® Patch should be avoided because it may cause premature closure of the ductus arteriosus. FLECTOR® Patch is in Pregnancy Category C. Safety and effectiveness in pediatric patients have not been established.

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