Vitamin D Research Roundup

Seniors May Need More Vitamin D to Maintain Muscles

Vitamin D, known to be crucial to bone health, may also boost the muscle strength necessary for seniors to perform daily tasks. New research presented at the recent Experimental Biology conference reports that elderly people with higher blood levels of the “sunshine vitamin” are more likely to have better physical function.

“Current dietary recommendations are based primarily on vitamin D’s effects on bone health,” explained lead researcher Denise Houston, PhD, RD, of Wake Forest University. “It is possible that higher amounts of vitamin D are needed for the preservation of muscle strength and physical function as well as other health conditions.”

Houston and colleagues studied 2,788 generally healthy people, average age 75, living in Memphis and Pittsburgh. Researchers tested blood levels of vitamin D at the study’s start. Physical function was evaluated by walking speed, how quickly participants could rise from a chair five times, and ability to maintain balance in progressively more challenging positions at the study’s start and after two and four years. Other tests measured endurance and strength.

Two-thirds of the elderly participants had insufficient levels of vitamin D, and 90% consumed less than the recommended amount of the vitamin. Although the skin naturally manufactures vitamin D when exposed to sunlight, in the wintertime it’s difficult to get adequate sun to maintain vitamin D levels. And even fortified foods such as milk—with 100 IU per cup—must be consumed in quantity to reach the 600 IU recommended by the Institute of Medicine for people over age 70. (The institute is currently evaluating those recommended levels, which many experts believe are too low.)

Researchers found that people with the highest blood levels of vitamin D scored best on the tests of physical function. Although physical function declined overall during the four years of the study, it remained significantly higher among those with the highest initial vitamin D levels.

It’s not surprising that vitamin D might be important for maintaining muscles. A recent McGill University study, published in the Journal of Clinical Endocrinology and Metabolism, reported an association between low vitamin D levels and the accumulation of fat in muscle tissue—which leads to reduced muscle strength. A panel of the European Food Safety Authority also concluded that “a cause and effect relationship has been established between the dietary intake of vitamin D and contribution to the normal function of the immune system and healthy inflammatory response, and maintenance of normal muscle function.”

But this latest study, which has yet to be published in a peer-reviewed journal, wasn’t designed to establish cause and effect. So it’s possible, researchers cautioned, that those who are better able to get out and about have more vitamin D because they’re out in the sun, making it naturally.

“Clinical trials are needed to definitively determine whether increasing vitamin D concentrations through diet or supplements has an effect on these non-traditional outcomes,” Houston added.

In the meantime, given the proven importance of vitamin D to bone health and emerging science suggesting still other benefits, it can’t hurt to make sure you’re getting enough.

Fortified Orange Juice Effective for Vitamin D Absorption

Can your body really absorb the vitamin D in fortified orange juice, given that the vitamin dissolves in fat (as in fortified milk) but not water? A new study says it can, adding fortified OJ to the limited list of significant food and beverage sources of vitamin D.

“A lot of people don’t drink milk,” commented lead investigator Michael F. Holick, MD, PhD, of Boston University Medical Center, a leading vitamin D scientist and advocate of higher intakes, “but they do drink OJ in the morning.”

Simply adding vitamin D to a food or beverage doesn’t guarantee it will be “bioavailable”—usable by the body. In fact, the lack of fat in orange juice initially led beverage companies to be skeptical whether adding vitamin D to the popular breakfast drink would do any good. Previous research led by Dr. Holick, however, helped convince the makers of Minute Maid and Tropicana to give it a try.

But can the body absorb vitamin D from orange juice as readily as from supplements? To find out, Dr. Holick and colleagues recruited about 100 adults and randomly divided them into six groups receiving various combinations of OJ fortified with 1,000 IU of vitamin D2 or D3, supplements of vitamin D2 or D3, and placebo drinks and pills. When blood levels were tested at the start of the study, 64% of participants were deficient in vitamin D. After 11 weeks, all those getting extra vitamin D saw increases in blood levels of the vitamin, and there was no difference between those receiving it in pills or juice.

There’s one catch: You can’t buy orange juice—or any other food or beverage—with 1,000 IU of vitamin D, because government regulations limit fortification to 100 IU per serving. That may change, however, after the federal dietary guidelines are updated later this year.

The study, published in the American Journal of Clinical Nutrition, was funded by the National Institutes of Health and by a division of Coca-Cola, which makes Minute Maid.

To learn more: American Journal of Clinical Nutrition, June 2010; abstract at <www.ajcn.org/cgi/content/abstract/91/6/1621>.