

Vitamin D deficiency tied to host of dangers

By Scott Allen, Globe Staff | December 30, 2004

A growing body of scientific evidence suggests that the widespread deficiency of vitamin D among Americans is more harmful than once believed, increasing their risk of fractures, muscle weakness, and even cancer as they age. In response, two key scientific panels are considering how to close the nutrition gap without compromising another important health campaign: the fight against skin cancer.

More than 40 percent of American adults have low blood levels of vitamin D, which people can get from foods such as milk and salmon as well as nutritional supplements. During nonwinter months, however, people can also get vitamin D from standing in the sun for a few minutes several times a week. That amount of exposure may seem trivial, but many dermatologists worry that any sun exposure may increase the risk of skin cancer and, more significantly, that encouraging some sun exposure will lead some people to overdo it.

Until recently, public health officials advised people to avoid sun exposure altogether and regarded vitamin D deficiency as far less important, believing that the danger of low vitamin D levels was mainly an increased risk of fractures among the elderly and a rare disease called rickets among children. But recent research has shown that older people with adequate vitamin D levels have better muscle control, lower blood pressure, and fewer ills such as multiple sclerosis and arthritis, compared with people with lower vitamin levels.

Now, a forthcoming Harvard School of Public Health study is expected to show that adequate vitamin D levels reduce cancer risk by 30 percent, increasing pressure on the US Department of Agriculture to raise the recommended daily consumption of the nutrient. The new data also are likely to add to the chorus of vitamin D advocates who say it is time to lighten up on the anti-sun message.

"We absolutely have a huge problem with vitamin D deficiency," said Dr. Bess Dawson-Hughes, director of the Bone Metabolism Laboratory at Tufts University, who argues for both more dietary vitamin D and sun exposure just long enough to trigger the body's vitamin D machinery. "It's hard for things to be so polarized because a little sunlight goes a very long way in producing vitamin D. . . . I don't think there's a villain here."

For most people, she said, 10 minutes a day of sun exposure to the face and arms without sunblock protection is enough to trigger vitamin D production in the skin during warm weather. However, from mid-October to mid-March, the sun's rays in northern cities such as Boston are too weak to generate vitamin D, causing a regionwide drop-off in blood levels through the winter.

Vitamin D researchers say the attention to the issue is overdue. Researchers such as Dr. Michael Holick of Boston University School of Medicine argue that the anti-skin cancer campaign actually made the vitamin D deficiency worse by keeping people out of the sun while not at the same time advocating increased vitamin D consumption in diets. Since vitamin D is not found in many foods, and many adults are lactose-intolerant, he believes the sun is the leading source of vitamin D for most people.

"There hasn't been a balanced conversation about what compromise we can reach for best protecting people for vitamin D and still protecting against skin cancer," said Connie Weaver, director of the Botanical Center for Age-Related Diseases at Purdue University. "Now [vitamin D] is getting a lot of attention. The science is driving it."

Work in Dawson-Hughes's lab, for example, showed that vitamin D is important for muscle performance in older people, and those who had higher levels could get up from a chair and walk better than those with lower levels. As a result, Dawson-Hughes suggests that vitamin D, which helps the body retain calcium, is important for preventing falls and fractures as people age.

Other studies have suggested that higher vitamin D levels help protect against colon, prostate, and breast cancer, but a long-term study of 50,000 men by researchers at Harvard School of Public Health suggests vitamin D may reduce the risk of all cancers. The study, which is still under review for publication, found that men who consumed higher levels of vitamin D reduced their overall cancer risk by at least 30 percent, according to lead author, Ed Giovannucci. The findings were statistically significant, he said, and a separate study of women is expected to produce similar results.

Giovannucci, who declined to discuss details of the study before publication, said cells in general use vitamin D to remain normal, making them less likely to grow out of control the way a tumor does. If everyone had adequate vitamin D levels in their bloodstreams, he said, "It would be equivalent to eliminating a big portion of cancer."

The American Academy of Dermatology, a leader in the anti-skin cancer crusade, held a conference last summer on how to respond to the findings about the risks of vitamin D deficiency. The group's conclusions have not yet been released, but it is expected to recommend increased vitamin D consumption, especially for the elderly, but only through food and vitamins.

Research has shown that sunburns, particularly during childhood, increase the risk of developing skin cancer. Though the evidence is less clear for shorter exposures to sunlight, the dermatology group advises sunscreen and clothing protection for anyone in the sun 20 minutes or longer. And they fear that any encouragement to go into the sun will cause people to be unprotected for much longer.

"The public would love to have the message that they should go to the tanning booths or go to the beach" without sunscreen, but that isn't safe, said Dr. Barbara Gilchrest, chairwoman of the dermatology department at Boston University School of Medicine. Gilchrest said people worried about low vitamin D levels should take a vitamin supplement.

Earlier this month, the scientific panel that advises the USDA on nutrition met on whether to recommend increasing the daily consumption of vitamin D. Current guidelines are based on 1997 science, when little was known about the nutrient's role in muscle strength or cancer protection.

In addition, nutrition specialists were concerned that excessive vitamin D could also be dangerous, so the USDA approved daily vitamin D consumption of no more than 600 international units for people over 70 and as little as 200 for those under 50. Today, vitamin D researchers such as Dr. Joel Finkelstein of Massachusetts General Hospital suggest people of all ages should get 800 units of vitamin D or more, the equivalent of eight cups of milk or two vitamin D supplements.

The Food and Nutrition Board of the Institute of Medicine, as the government advisory panel is known, has not decided whether to open a formal review of the science of vitamin D, but the board's director, Linda Meyers said there appeared to be plenty of support among scientists. Its recommendations would then be used by the USDA to change its nutritional advice to the country.