

VITAMIN D: WHAT'S NEW THAT YOU NEED TO KNOW

The Dietary Guidelines for Americans, 2010 point to Vitamin D as one of the nutrients of public health concern (along with potassium, fiber, and calcium). Without an adequate amount of Vitamin D, the body is not able to use calcium and phosphorus to develop and maintain bone strength even if those minerals are present in adequate amounts. New research is suggesting that Vitamin D may also help protect against other chronic diseases such as certain types of cancers and both type 1 and type 2 diabetes. It may also strengthen the immune system.

Vitamin D is a nutrient of particular concern to older persons as Vitamin D deficiency results in osteomalacia, or a softening of the bones, in adults. Vitamin D deficiency can also contribute to the development of osteoporosis, the brittle bone disease common among older persons that can lead to increased risk for bone fractures. Hip fractures resulting from falls is one of the most common bone fractures among the elderly, particularly among older women. Research studies have shown that the risk of death in the year following a hip fracture ranges from 20% to 25%, depending on race, sex, age, and additional medical problems.

Recent research is suggesting that a combination of exercise and Vitamin D supplementation helps reduce the risk of falls among the elderly, and as falls decrease, so too do bone fractures and other fall-related injuries decrease among the elderly. Falls are the leading cause of injury among older persons, and it is estimated that 30 - 40 percent of community-dwelling older persons ages 65 and older fall at least once per year.

Vitamin D is unique in that sunlight on the skin enables the body to make Vitamin D. It is the decreasing exposure of many persons to sunlight that is leading to the public health concern about Vitamin D. Sunscreen use has increased in recent years as persons have become more aware of the relationship between excess sun exposure and skin cancer. Unfortunately, the sunscreens also prevent the skin from making Vitamin D. Many older persons have reduced exposure to sunlight because they may be home bound or may restrict their outdoor activities as their physical abilities decline. Older persons living in the northern regions of the country are particularly at risk for limited sunlight exposure, especially during the winter months.

FACTORS WHICH CAN BLOCK VITAMIN D PRODUCTION IN THE SKIN

- ***Using sunscreen with UV protection***
- ***Having dark skin tones***
- ***Covering exposed skin***
- ***Sun rays passing through glass windows - generally filters out the sun's UV rays which are essential to Vitamin D production***
- ***Increasing age - skin changes in older persons make it harder for the skin to make Vitamin D***
- ***Living in northern locations where days are short and sunlight limited in late fall, winter, and early spring***

The Recommended Dietary Allowance for Vitamin D has recently been increased by the Institute of Medicine to 600 International Units (IUs) for most adults and 800 IUs for persons over age 70. Although the dietary intake of Vitamin D among Americans is below recommendations, data from the National Health and Nutrition Examination Survey (NHANES) indicate that more than 80 percent of Americans have adequate Vitamin D blood levels. For adults, including older person, the recommended upper limit for safe intake of Vitamin D is 4000 IUs, though there is some evidence that even higher levels may be safe. Too much Vitamin D can cause high blood calcium levels. Symptoms of Vitamin D toxicity are general symptoms such as loss of appetite, weight loss, nausea, and weakness.

In the United States, most dietary Vitamin D is obtained from fortified foods, especially fluid milk and some yogurts. Some other foods commonly fortified with Vitamin D include breakfast cereals, margarine, orange juice, and soy beverages. Natural sources of Vitamin D include fish such as salmon, herring, mackerel, and tuna and egg yolks. Vitamin D is also available in the form of dietary supplements. Many multivitamin-mineral supplements on the market today now have 800 IUs/day of Vitamin D in the supplement, an amount which will meet the Recommended Dietary Allowance for Vitamin D for every age group, including older persons. If persons feel that they still need additional Vitamin D, they should not take more multivitamins as there are other components of the multivitamin which can be harmful if taken in excess. Rather, they should take a separate Vitamin D supplement.

FOOD SOURCES OF VITAMIN D	
NATURAL SOURCES	FORTIFIED FOOD SOURCES
Salmon	Milk
Sardines	Some yogurt (check the label)
Shrimp	Orange Juice
Tuna	Cereal
Egg Yolk	Soy Beverages
	Margarine

Vitamin D can be found in two forms.

Vitamin D₃, the form of Vitamin D the skin makes in response to sun exposure and the form found naturally in a few foods. It is also a form added to other foods and in some dietary supplements.

Vitamin D₂, the form commonly available in dietary supplements and which is also added to some foods.

Both forms work well, though there are some authorities who recommend Vitamin D₃ because it is the form that the skin makes in response to sunlight.

References and Other Information Sources

Dietary Guidelines for Americans, 2010. (February, 2011). United States Department of Agriculture Center for Policy and Promotion. <http://www.cnpp.usda.gov/DGAs2010-PolicyDocument.htm>.

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