

National Council on Skin Cancer Prevention POSITION STATEMENT ON VITAMIN D

July 2, 2009

Vitamin D plays a crucial role in forming and maintaining strong, healthy bones. Studies have shown that low blood levels of vitamin D (measured as 25-OH vitamin D) are associated with certain cancers, neurologic disease, diseases of heart and blood vessels and death from all causes. While it is certain that vitamin D is necessary for a healthy skeleton, it should be emphasized that a low vitamin D level has not been proven to actually be the cause of these other conditions.

There are three sources of vitamin D: synthesis by the skin following exposure to sunlight, certain foods (often through vitamin D fortification), and vitamin D supplements. Vitamin D₃ (cholecalciferol) is the natural form that is produced in the skin. It is available as a single ingredient over-the-counter vitamin supplement, and is also commonly incorporated into calcium supplements and multivitamins. Vitamin D₃ is also commonly used in fortified foods. Vitamin D₃ is generally preferred over another available form, vitamin D₂ (ergocalciferol).

Ultraviolet B (UVB) is the portion of sunlight that stimulates human skin to produce vitamin D. However, UVB rays are also the major cause of sunburns and it is well established that exposure to sunlight or to tanning booths increases the risk of developing skin cancer. Because of the known side effects of exposure to ultraviolet (UV) radiation, including the development of skin cancer, careful sun protection should be practiced (Table 1).

Fortunately, people who choose to protect their skin from the sun can acquire a sufficient amount of vitamin D by mouth (from a combination of diet and vitamin supplements), thus providing an alternative route to maintaining a healthy vitamin D concentration that avoids the risk associated with sun exposure.

According to the latest version of the Dietary Guidelines for Americans 2005, adults with limited sun exposure should ingest extra vitamin D from vitamin D-fortified foods and /or supplements. For these adults, an intake of 1000 IU of vitamin D per day has been recommended.

For children under 18 years of age, including infants, the American Academy of Pediatrics recommends 400 IU of vitamin D per day.

There are only limited sources of vitamin D in a typical diet (listed by the NIH Office of Dietary Supplements at <http://ods.od.nih.gov/factsheets/vitamind.asp>). To achieve 1,000 IU daily, vitamin supplements can help to make up the difference [Table 2]. However, caution must be exercised because vitamin D can be toxic in high doses. The U.S. Food and Nutrition Board states that an intake of 2,000 IU per day is the upper limit for safety for individuals over 12 months of age; an intake of 1,000 IU per day is the upper limit of safety for infants. A blood test to measure a person's vitamin D concentration is widely available.

Because UV radiation is known to cause skin cancers, and because sufficient vitamin D can be safely and inexpensively acquired through diet and vitamin supplements, adults or children should avoid intentional exposure to natural sunlight or artificial UV radiation (tanning beds) as a means to obtaining vitamin D. A total daily intake of 1,000 IU of vitamin D (achieved through diet and supplements) may be appropriate for adults who protect their skin from the sun.

Table 1. Sun Protection Practices

Avoid sun burning, intentional tanning, and using tanning beds.

Apply sunscreen generously.

Wear sun-protective clothing, wide-brimmed hat, and sunglasses.

Seek shade.

Use extra caution near water, snow, and sand.

Get vitamin D through diet and vitamin D supplements.

Table 2. An *example* of 1000 IU intake of vitamin D *

3 oz salmon = 300 IU

1 glass (8 oz) of vitamin D fortified orange juice = 100 IU

2 glasses (8 oz each) of vitamin D fortified milk = 200 IU

Vitamin D3 pills, 400 IU

* 2000 IU = safe upper limit

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