Vitamin D Deficiency: Information for Cancer Patients

A Publication of

The Bone and Cancer Foundation

Contents

Introduction

Vitamin D, the "sunshine vitamin," is a hormone that is important to many aspects of good health. Unfortunately, lack of adequate vitamin D (vitamin D deficiency) is a serious problem for people living around the world.

This publication contains information on what vitamin D does and why it is particularly important for cancer patients to make sure they are getting enough of it.

Vitamin D deficiency is extremely common in patients with all types of cancer. Therefore, it is important for cancer patients to make sure they are not vitamin D deficient. A specific type of blood test (that measures 25-hydroxyvitamin D) is the only way a person can find out if he or she has enough vitamin D. Routine blood tests do not measure vitamin D levels.

Vitamin D Deficiency is a Worldwide Problem

Studies in the United States, Europe, India, Australia, South America, and Southeast Asia have shown that approximately 50 percent of children and adults are at high risk of vitamin D deficiency.

People are at risk of vitamin D deficiency because:

— Many people's sun exposure is reduced for various reasons, including the use of sunscreen.

— Many people don't consume enough vitamin D from diet and supplements.

Sources and Types of Vitamin D

Sources of Vitamin D

Vitamin D comes from:

— Exposure to sunlight.

— Diet. Certain fish and fish oils are good sources of vitamin D.

— Supplements. Vitamin D supplements which can be bought over the counter (without a prescription) are available in 400 IU (international units), 600 IU, 700 IU, 800 IU, and 1000 IU tablets.

Types of Vitamin D

There are two forms of vitamin D:

- Vitamin D_3 (cholecalciferol).
- Vitamin D_2 (ergocalciferol).

Vitamin supplements may contain either form of vitamin D and both forms are effective. Vitamin D supplements are taken by mouth. The recommended dose is between 1,000 and 2,000 IU (international units) per day.

No risks are associated with the recommended daily doses of vitamin D.

What Vitamin D Does

Vitamin D plays an important role in many normal body functions, including:

- Regulation of cell growth.
- Bone formation.
- Immune function.
- Muscle strength.
- Hair growth.
- Fighting infections.
- Reducing the risk of autoimmune diseases.

Vitamin D and Calcium

Calcium is an element that is important for bone formation, maintenance of the skeleton, and other body functions. Calcium is consumed in food or in dietary supplements.

Vitamin D plays an important role in bone formation because it increases the amount of calcium that is absorbed from foods or supplements.

Health experts recommend that most people should receive 1,000 to 1,200 mg of calcium per day in a divided dose. People who do not eat dairy products usually need to take calcium supplements to reach this level. This can be done by taking 500 to 600 mg of calcium twice a day. Calcium carbonate and calcium citrate are the most common calcium supplements.

Calcium carbonate should be taken with food and calcium citrate may be taken with or without food. Many calcium supplements contain vitamin D but the amount may vary depending on the supplement.

Cancer and Vitamin D Deficiency

Vitamin D deficiency is extremely common in patients with all types of cancer.

Why are Cancer Patients at Risk for Vitamin D Deficiency?

Cancer patients may spend less time in the sun because of their condition.

The effects of cancer or its treatment can cause patients to consume less vitamin D in their diet because they are eating less.

Why is Sufficient Vitamin D Important for Cancer Patients?

Cancer is a disorder which involves uncontrolled cell growth. Vitamin D regulates the production of proteins that are responsible for cell division and growth. Therefore, vitamin D deficiency can cause abnormal production of these proteins.

Cancer patients who are vitamin D deficient can experience muscle and bone discomfort and fatigue. These symptoms may also be caused by radiation therapy, chemotherapy, or the cancer itself. Vitamin D deficiency can also cause nonspecific aches and pains in the bones and muscles as well as feelings of weakness.

Identifying Vitamin D Levels

Cancer patients should make sure their vitamin D (25-hydroxyvitamin D) level is in the appropriate range of 30 to 60 ng/ml (nanogram/milliliter) .

The only way a patient can know his or her vitamin D level is through a specific type of blood test that measures the form of vitamin D called 25-hydroxyvitamin D.

Cancer patients should ask their doctor whether or not they have had their blood tested for 25-hydroxyvitamin D.

Patients should talk to their doctor about the results of their blood test and what actions to take. Because doctors who treat cancer are not generally trained in nutritional health, patients may also decide to consult with a nutritionist.

Maintaining Sufficient Vitamin D Levels

Optimum vitamin D (25-hydroxyvitamin D) levels for cancer patients are from 30 to 60 ng/ml.

Cancer patients whose level of vitamin D is too low (below 30 ng/ml) should receive 50,000 IU of vitamin D once a week for eight weeks. (The 50,000 IU Vitamin D dose requires a prescription from a physician.) Two months after completing this treatment, the patients should have their vitamin D (25-hydroxyvitamin D) level tested again.

Cancer patients whose vitamin D level is high enough (above 30ng/ml) and are taking 1,000 IU of vitamin D daily should continue to have their vitamin D (25-hydroxyvitamin D) level measured every 6 to 12 months.

Cancer patients with sufficient levels of vitamin D (above 30 ng/ml) have options to maintain their level of vitamin D:

— Taking daily supplements of between 1,000 and 2,000 IU of vitamin D.

— During the spring, summer, and fall months (and year-round if a patient lives in the southern part of the U.S.) combining sensible sun exposure* and daily consumption of 1,000 IU of vitamin D.

* Exposure of arms and legs to sunlight for 10-15 minutes between the hours of 10:00 a.m. and 3:00 p.m. 3 to 4 times a week. For people of color, longer and more frequent exposure is recommended – up to 30 minutes daily.

The mission of The Bone and Cancer Foundation is to:

- Provide information to cancer patients and family member on the causes and current treatment of cancer that involves the bone.

- Provide information and serve as a resource for physicians, nurses, and other health professionals regarding the management of cancer that spreads to the bone.

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