Research

Vitamin D — Are you getting your fair share?

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Vitamin D, also known as the sunshine vitamin, may play a much more important role in your overall health than what was originally thought. By helping your body to absorb calcium from your diet, you assist the development, growth and maintenance of your skeletal system for your entire life. Without proper daily amounts of vitamin D, the body takes its needed calcium from what is stored in your bones and weakens them, which can contribute to the development of osteoporosis. In addition to being important to skeletal health, proper calcium absorption is also needed to help blood clot and to help muscles and nerve cells (including those in the brain) function adequately.

All women are encouraged to consult with a physician about their need for vitamin D supplementation as part of an overall plan to prevent and/or treat osteoporosis.

Recently, researchers have conducted studies on the effects of low levels of vitamin D in the body and the role that it may have in diseases other than those associated with bones. In a controlled study of patients with musculoskeletal pain, 93 percent were shown to be deficient in vitamin D (www.MayoClinic.org). Research also shows that vitamin D can help maintain a healthy immune system, support cell growth and function and help control hypertension. Some research indicates it may help lower the risk for certain cancers, arthritis, depression, diabetes, osteoporosis, muscle weakness and pain, heart disease, birth defects and autoimmune diseases. In addition to these benefits, increasing vitamin D and calcium in your diet can also be beneficial in helping to restore the depletion of nutrients caused by common prescription drugs.

You are able to get vitamin D from three different sources: sun exposure, supplements and diet. Exposure to the sun for 10-15 minutes a few times a week is all that is needed for most people to manufacture and store all of the vitamin D that is required by the body. Any additional exposure should be followed by application of a sunscreen with an SPF of at least 15 to protect the skin.

If you are unable to be in the sun, you may take a supplement or eat a diet that is rich in vitamin D foods such as fortified milk products and cereals, and fatty fish, including salmon, mackerel, sardines and tuna in oil.

If you're a coffee lover, you need to be aware that in addition to accelerating bone loss, it has been suggested that high amounts of caffeine can limit absorption of vitamin D in your body.

Vitamin D deficiency can be caused by inadequate diet, improper absorption, or increased need within the body because of illness or injury. Specific causes are limited exposure to sunlight, people with milk allergy or lactose intolerance, and those who are strict vegetarians.

The website of the Office of Dietary Supplements, National Institutes of Health Clinical Center, describes several groups who may need extra vitamin D to prevent a deficiency.

- The skin of *adults over 50* cannot synthesize vitamin D as efficiently, and the kidney is less able to convert vitamin D to its active hormone form.

Resources

National Institute of Health
Office of Dietary Supplements
http://ods.od.nih.gov/factsheets/vitamind.asp

Mayo Clinic News
www.mayoclinic.org/news2005-mchi/2808.html

Vitamin D Council
http://vitamindcouncil.com

The Institute of Medicine (IOM) determined there was insufficient scientific information to establish a RDA (recommended daily allowance) for vitamin D. Instead, the recommended intake is listed as an Adequate Intake (AI), which represents the daily vitamin D intake that should maintain bone health and normal calcium metabolism in healthy people.

Adequate intake for vitamin D:

Age	*Men (µg/day)*	*Women (µg/day)*
19 to 50 years	5 (=200 IU)	5 (=200 IU)
51 to 70 years	10 (=400 IU)	10 (=400 IU)
71+ years	15 (=600 IU)	15 (=600 IU)

- Homebound individuals, people living in northern latitudes (such as in New England and Alaska), women who wear robes and head coverings for religious reasons, and individuals working in occupations that prevent sun exposure are *unlikely to obtain much vitamin D from sunlight.*
- Vitamin D is a fat soluble vitamin and it requires some fat for absorption. A variety of *medical conditions can interfere with the absorption of dietary fat.* They include Crohn's Disease, Celiac Disease or sprue, and some diseases of the liver.

Other important facts about vitamin D for aging polio survivors include:

- Adequate storage levels of vitamin D help keep bones strong and may help prevent osteoporosis in older adults, in non-ambulatory individuals (those who have difficulty walking and exercising), in post-menopausal women, and in individuals on chronic steroid therapy.
- In a review of women with osteoporosis hospitalized for hip fractures, 50 percent were found to have signs of vitamin D deficiency. Daily supplementation with 20 µg (800 IU) of vitamin D may reduce the risk of osteoporotic fractures in elderly populations with low blood levels of vitamin D.
- Corticosteroid medications such as prednisone are often prescribed to reduce inflammation from a variety of medical problems. These medicines may be essential for medical treatment, but they have potential side effects, including decreased calcium absorption. There is some evidence that steroids may also impair vitamin D metabolism.

If you think that you might have a lack of vitamin D, talk to your physician about having your serum levels checked (a 25-hydroxy-vitamin D blood test). A deficiency is accurately diagnosed by measuring the concentration of a specific form of vitamin D in blood.

Because individual needs vary, and to insure that you are taking the proper dosage for your specific health care needs, consult with your health care professional before adding any vitamins or supplements to your diet.

The Food and Nutrition Board of the Institute of Medicine has set the tolerable upper intake level (UL) for vitamin D at 50 µg (2,000 IU) for adults. ▲

The classic vitamin D deficiency diseases are rickets and osteomalacia. Rickets results in soft bones and skeletal deformities and has recently re-emerged in the US, in particular among African American infants and children. Rickets is more prevalent among immigrants from Asia, Africa and Middle Eastern countries for a variety of reasons. Among immigrants, vitamin D deficiency has been associated with iron deficiency, leading researchers to question whether or not iron deficiency may impair vitamin D metabolism. Immigrants from these regions are also more likely to follow dress codes that limit sun exposure. In addition, darker pigmented skin converts UV rays to vitamin D less efficiently than lighter skin.