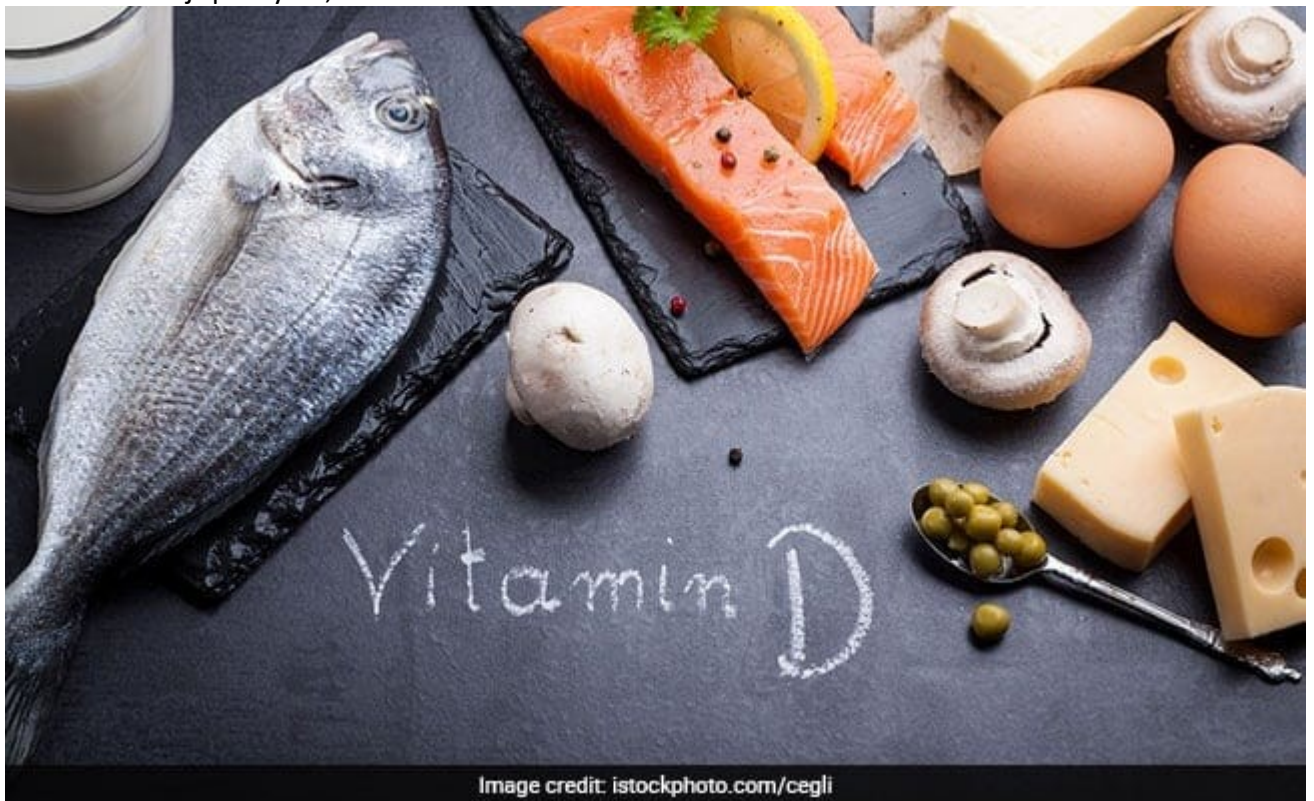


How Much Vitamin D Is Too Much Vitamin D?

Several cases of Hypervitaminosis D, also known as Vitamin D toxicity, have been reported in India lately.

Dr. Preethi Raj | July 01, 2019



Vitamin D deficiency is growing at a very fast pace

Highlights

- Vitamin D deficiency is growing at a very fast pace
- However, excess you Vitamin D may also be bad for your health
- Several cases of Vitamin D toxicity have been reported in India lately

Vitamin D is a fat-soluble vitamin that is essential for the proper functioning of the body. Vitamin D is important for muscles, immune system and cell growth. Apart from reducing inflammation, Vitamin D also helps regulate blood pressure and is known to protect heart. It plays a major role in calcium metabolism. Calcium will be absorbed only in the presence of Vitamin D. Vitamin D deficiency is growing at a very fast pace. What's alarming is that many people consume Vitamin D supplements without consulting a medical practitioner and being unaware whether or not their body needs Vitamin D at the first place. And if it does, how much Vitamin D does the body require for optimum health benefits. Due to this, several cases of Hypervitaminosis D, also known as Vitamin D toxicity, have been reported in India lately. This is majorly because of the lack of proper knowledge and information regarding the recommended dosage of Vitamin D.

Recent studies say that overdose of Vitamin D could be as fatal as its deficiency. Hence, it is essential that we are aware of both the extremities of this nutrient in order to consume an adequate amount for healthy living.



Vitamin D is synthesised in the body in the presence of sunlight
Photo Credit: iStock

What Is Vitamin D Deficiency?

People with less than <20ng/ml are called Vitamin D deficient, Vitamin D status around 20 - 39 ng/ml are called Vitamin D insufficient and >30ng/ml are called Vitamin D sufficient.

Symptoms of Vitamin D Deficiency

1. Rickets

Rickets is a skeletal disorder that's caused by a lack of vitamin D, calcium, or phosphate in the body. These nutrients are important for the development of strong, healthy bones. People with rickets may have weak and soft bones, stunted growth, and, in severe cases, skeletal deformities.

2. Osteomalacia

It is the softening of the bones caused by impaired bone metabolism primarily due to inadequate levels of available phosphate, calcium, and vitamin D, or because of resorption of calcium. The impairment of bone metabolism causes inadequate bone mineralisation.

3. Depression

Some of the receptors in the brain are receptors for vitamin D, which means that vitamin D is acting in some way in the brain. These receptors are found in the areas of the brain that are linked to the development of depression. For this reason, vitamin D has been linked with depression and with other mental health problems. High dosage (5000-10000 IU of Vitamin D may help alleviate depression.

4. Metabolic Syndrome

Adolescents and young adults with vitamin D deficiency are nearly 2.5 times more likely to have metabolic syndrome vs. those without vitamin D deficiency, according to findings from an ongoing study of participants in China. (Steven M. Willi, MD, associate professor of pediatrics at the Children's Hospital of Philadelphia)

5. Blood pressure

Vitamin D levels in the body modulate the blood pressure indirectly.

6. Risk For Cardiovascular Diseases

Several epidemiological studies have suggested that individuals with low blood levels of vitamin D have increased risks of heart disease, stroke, hypertension, and diabetes.

7. Asthma In Children

Several clinical trials have tested whether taking vitamin D as a supplement has an effect on asthma attacks, symptoms, and lung function in children and adults with asthma.

8. Cancer

Vitamin D may play a role in controlling normal breast cell growth and may be able to stop breast cancer cells from growing.

There Are Four Strategies For Increasing Vitamin D Levels:

Supplement

These are readily available over the counter. A doctor may also prescribe a supplement or multivitamin. For most adults, the recommended dietary allowance (RDA) is 400 - 600 IU. For adults over 70, the RDA is 800 IU.

Foods Rich In Vitamin D

Fatty fish such as tuna, salmon, and mackerel, as well as fish liver oils, are excellent natural sources of Vitamin D. Cheese and egg yolks contain small quantities of vitamin D. Milk, cereals and juices are fortified with vitamin D. Mushrooms are also good source of vitamin D2.

Fatty fish like salmon is abundantly rich in Vitamin D

Fortification:

In August 2018, the FSSAI had notified the Food Safety and Standards (Fortification of Foods) Regulations, 2018 in the Gazette of India. With this, in case of vitamin D, India became the 3rd country in the world to allow fortification.

Increased Exposure To Natural Sunlight

Regular sun exposure is the most natural way to get enough vitamin D. To maintain healthy blood levels, aim to get 10-30 minutes of midday sunlight, several times per week. People with darker skin may need a little more than this. Your exposure time should depend on how sensitive your skin is to sunlight.

What Is Vitamin D Toxicity?

People with more than 150ng/dl are Vitamin D toxic. The sufficient levels are between 20-30ng/ml and the safe upper limit is 60ng/ml.

Symptoms of Vitamin D Toxicity:

High dose Vitamin D toxicity causes hypercalcemia or high levels of calcium in the blood. High calcium can cause hypercalcuria (kidney stones).

Hypercalcuria occurs when the body tries to get rid of excess calcium by excreting it, via the kidneys. Indeed, one study demonstrated that nursing home residents taking 5,000 IU of Vitamin D for six months showed an increased urinary calcium/creatinine ratio.

If the body can't regulate calcium levels, the mineral may deposit itself throughout the soft tissues of the body, including the arteries. Unfortunately, some studies suggest that this is a real possibility when Vitamin D level becomes too high.

Vitamin D Supplements and Dosage

Vitamin D supplements are the easiest way to increase our Vitamin D levels in the body. But have we ever thought if the supplement is doing us any good? Low Vitamin D levels could be a symptom of an underlying problem and supplements may not be the solution to it.

The prevalence of Vitamin D deficiency in a tropical country like India is as high as 83 -90% where there is abundance of sunshine. Unfortunately, only few medical professionals think why there is leakage of Vitamin D. Others put the patients with high dosage of supplements from 2000 - 10000 IU/day. There is no doubt that vitamin D is important for bones, calcium absorption and also to prevent metabolic diseases but, aren't we overdosing our body with Vitamin D without finding the reason for the deficit?

Rickets and Osteomalacia occurs at levels below 25 ng/mL in blood. Some researchers believe a more optimal range is anywhere between 50 - 80 ng/ml. But there's no universal consensus. ICMR recommends only 400 IU (10 mcg) of Vitamin D for people with low exposure of sunlight, otherwise the entire requirement can be obtained just by sunlight. Since the deficiency is pandemic, it is essential to take adequate supplement but not too much. Having said that, 1000-2000 IU/ day seems to be safe.

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