

# VITAMIN D



If you shun the sun, suffer from milk allergies, or adhere to a strict vegetarian diet, you may be at risk for vitamin D deficiency. Known as the sunshine vitamin, vitamin D is produced by the body in response to sunlight. It also occurs naturally in a few foods -- including some fish, fish liver oils, and egg yolks -- and in fortified dairy and grain products (though it does not happen in India).

Vitamin D is essential for strong bones because it helps the body use calcium from the diet. Remember calcium without Vitamin D is of no use. Traditionally, vitamin D deficiency has been associated with rickets, a disease in which the

bone tissue doesn't properly mineralize, leading to soft bones and skeletal deformities. But increasingly, research is revealing the importance of vitamin D in protecting against a host of health problems.

In a study done by a local diagnostic chain in 2011, more than 80% of Mumbaikars were found to be deficient in Vitamin D. That's an alarming number.

## **Symptoms and Health Risks of Vitamin D Deficiency**

Symptoms of bone pain and muscle weakness can mean you have a vitamin D deficiency. If you have any form of bone or muscle pain like knee pain, back pain, chances are very high that you are severely deficient in Vitamin D. However, for many people, the symptoms are subtle. Yet even without symptoms, too little vitamin D can pose health risks. Low blood levels of the vitamin have been associated with the following:

1. Increased risk of death from cardiovascular disease
2. Cognitive impairment in older adults
3. Severe asthma in children
4. Cancer

Research suggests that vitamin D could play a role in the prevention and treatment of a number of different conditions, including type 1 and type 2 diabetes, hypertension, glucose intolerance, and multiple sclerosis.

Causes of Vitamin D Deficiency



- 1. You don't consume the recommended levels of the vitamin D over time.** This is likely if you follow a strict vegetarian diet, because most of the natural sources are animal-based, including fish and fish oils, egg yolks, cheese, fortified milk, and beef liver.
- 2. Your exposure to sunlight is limited.** Because the body makes vitamin D when your skin is exposed to sunlight, you may be at risk of deficiency if you are homebound, live in northern latitudes, wear long robes or head coverings for religious reasons, or have an occupation that prevents sun exposure.
- 3. You have dark skin.** The pigment melanin reduces the skin's ability to make vitamin D in response to sunlight exposure. Some studies show that older adults with darker skin are at high risk of vitamin D deficiency.
- 4. Your kidneys cannot convert vitamin D to its active form.** As people age their kidneys are less able to convert vitamin D to its active form, thus increasing their risk of vitamin D deficiency.
- 5. Your digestive tract cannot adequately absorb vitamin D.** Certain medical problems, including Crohn's disease, cystic fibrosis, and celiac disease, can affect your intestine's ability to absorb vitamin D from the food you eat.
- 6. You are obese.** Vitamin D is extracted from the blood by fat cells, altering its release into the circulation. People with a body mass index of 30 or greater often have low blood levels of vitamin D.

### **Vitamin D and Weight Loss**

As we say that everything is interlinked and weight loss is not independent from health. We focus on improving your health and a healthy body takes care of weight loss. If you are Vitamin D deficient, then chances of you attracting diseases like diabetes increases and also your hormones will not be acting optimally. Vitamin D3 improves metabolism by influencing more than 200 different genes that can prevent and treat diabetes and metabolic syndrome.

### **Tests for Vitamin D Deficiency**

The most accurate way to measure how much vitamin D is in your body is the vitamin D blood test. A level of 20 nanograms/milliliter to 50 ng/mL is considered adequate for healthy people. A level less than 12 ng/mL indicates vitamin D deficiency.

### **How to get Vitamin D**

The best source is sun. It is advisable to get 15 minutes of full body sun exposure , without sunscreen (you can apply sunscreen on your face). But let's face it: it is not practical for majority of people. Our lifestyle has ensured that we hardly go under sun and it is more true in case of women. It is very very difficult to get Vitamin D from Indian dietary habits. We hardly eat Vitamin D rich fish, mackerel, herring, porcini or shiitake mushrooms. Also our dairy is not fortified with Vitamin D which is a common practice in lot of other countries. Hence, our best source is to have good Vitamin D supplement or some multivitamin with substantial Vitamin D.



Guidelines from the Institute of Medicine increased the recommended dietary allowance (RDA) of vitamin D to 600 international units (IU) for everyone aged 1-70, and raised it to 800 IU for adults older than 70 to optimize bone health. The safe upper limit was also raised to 4,000 IUs. If you are Vitamin D deficient, then you are advised to take sachets of Vitamin D. You can take 60,000 IUs (one sachet) of Vitamin D every week. If the levels are extremely low, then you can for 2 sachets every week for a month and then bring it down to one sachet every week. Even an injection of 600,000 IU can be taken but that should be taken only after consulting your doctor. After 3/6 months, get a test done. If Vitamin D level has reached normal level (30-50 ng/dl), then you can reduce your dosage to 600-1000 IU per day. And a good multivitamin will give you enough Vitamin D. You will not need to take a separate supplement for Vitamin D.

Ensure you take the right type of Vitamin D - D3 and not D2. Lot of doctors prescribe D2, which will not help. And please do not underestimate the importance of having enough Vitamin D. Vitamin D3 supplement does not have any side-effects and just because it comes in a tablet form, does not mean it is medicine and might have side-effects.

### **Vitamin D Quiz**

Take this test to figure out if your Vitamin D levels are low. If it is low, then you should go for supplements. It is also advisable to go for blood test to get accurate results, but it is not compulsory to go for blood test.

I work indoors	
I hardly ever go out in the sun	
I wear sun block most of the time	
I have seasonal affective disorder or the winter blues	
I have dark skin	
I am sixty years old or older	
I don't eat small fatty fish such as mackerel, herring, sardines	
My muscles are sore or weak	
I have knee pain/back pain/body pain	
My bones are tender	



I have osteoarthritis	
I have osteoporosis	
I have broken more than two bones or fractured a hip	
My mental sharpness and/or memory are not what they used to be.	
I have an autoimmune disease (e.g. multiple sclerosis)	
I seem to have more infections than most people I know	
I have prostate cancer	
Total	

**Scoring Key:** Determine how severe your condition using this scoring key:

Score	Severity	Care Plan
1-3	You may have a low level of Vitamin D	A multivitamin with 600 IU of Vitamin D would be enough.
4+	You may have a severely low level of Vitamin D	Take a Vitamin D supplement for 3 months. Contact your dietician for the details. Get a Vitamin D Test done after completing the course.