



## **Vitamin D**

In the past decade, medical researchers have learned that vitamin D plays a much greater role in maintaining overall health than previously thought. Until recently, it was believed that vitamin D's primary role was to maintain healthy bones. However, new research revealed that nearly all cells in the body contain vitamin D receptors. In addition to its role in bone health, vitamin D regulates dozens of genes and is involved in normal cell division, immune function, insulin secretion, blood clotting and blood pressure. Given all these roles, maintaining sufficient levels of vitamin D is crucial to overall health. It is estimated that 30-50% of Americans are vitamin D deficient.

### **Vitamin D Deficiency**

Many people who are vitamin D deficient have no signs or symptoms, or their symptoms can easily be confused with other conditions. Some common signs and symptoms of vitamin D deficiency include:

- Fractures
- Osteomalacia (softening of bone)
- Chronic Musculoskeletal pain
- Muscle weakness
- Fatigue
- Poor concentration
- Depression and anxiety

Age, season, skin color, body weight and medications all influence your body's ability to produce enough vitamin D. Vitamin D deficiency is also associated with certain medical conditions: Celiac Disease, Crohn's Disease, Pancreatic Insufficiency, obesity, breast cancer and Cystic Fibrosis.

### **Optimizing Vitamin D Levels**

Most sources recommend exposure to the sun as the best source for vitamin D. Many people will require a combination of sun exposure, dietary sources of vitamin D and or supplements.

Recommended Treatment Options:

- Vitamin D3 50,000 units every week for 12 weeks. (Prescription needed)
- Vitamin D3 2000 units daily (over the counter)
- Increasing sun exposure (10-15 minutes of direct sun exposure 3x per week to bare arms and legs)
- Increasing intake of food with vitamin D
  - Dairy products - Cheese, Butter, Fortified Milk
  - Fatty Fish (tuna, salmon and mackerel)
  - Organ meats
  - Eggs
  - Fortified cereals

### **Treatment Goals**

A normal vitamin D level is between 30-100ng/ml. Optimal value is 65ng/ml.

Once supplementation is started, it is essential to get blood levels checked since high dosages of vitamin D,

although extremely rare, can be toxic.

Vitamin D levels should be checked every 3-6 months for the first year, then annually once treatment goals are met.

**More Resources:**

Vitamin D Benefits: Weigh Less, Smile More!

<https://www.womenshealthmag.com/weight-loss/a19922175/vitamin-d-weight-loss/>

Vitamin D Levels Predict Depression

<https://www.medscape.com/viewarticle/842008>

Vitamin D3 50,000IU: Balance Women's Health sells a 15 capsule pack for \$20.

[https://www.orthomolecularproducts.com/assets/1/30/Vitamin\\_D\\_50000IU\\_\(PDN\).pdf](https://www.orthomolecularproducts.com/assets/1/30/Vitamin_D_50000IU_(PDN).pdf)

Vitamin D3 5,000 IU: Balance Women's Health sells a 60 count for \$15.

<https://www.orthomolecularproducts.com/file.aspx?DocumentId=242>