



## Vitamin D

### WHAT IS IT?

Vitamin D is a fat-soluble vitamin that works in concert with numerous vitamins, minerals, and hormones to promote optimal health of bones immune, cardiovascular, and neurological systems.

Humans have historically obtained their vitamin D through sun exposure, but recent studies suggest that many of us don't get enough sun to maintain adequate vitamin D levels. Deficiency is more widespread than originally thought, even with climates that have abundant sunshine.

### WHO MIGHT CONSIDER TAKING THIS?

Your health care provider might recommend vitamin D supplements if you are at high risk, or have, any of the following:

- Bone weakness, such as osteoporosis or osteomalacia
- Cancer
- Autoimmune conditions (such as lupus, multiple sclerosis, rheumatoid arthritis, among others)
- Low level of vitamin D measured as a blood test
- Other chronic medical illness such as high blood pressure, heart failure, or diabetes

You may be at higher risk for inadequate vitamin D levels if you:

- Live in a climate with limited sunlight
- Have darker skin pigmentation
- Have a disease that impairs fat absorption (e.g., Crohn's, cystic fibrosis, chronic pancreatitis)
- Are diligent with sunscreen use
- Are over 65
- Are pregnant or breast feeding

### PREPARATIONS AND DOSAGE

Two forms of vitamin D exist. Vitamin D3 is generally thought to be superior to vitamin D2, though some experts believe they are roughly equivalent. Vitamin D2 is made from yeast and is vegan. Vitamin D3 is generally made from lanolin from sheep's wool, though some companies use fish oil. Few foods are naturally rich in Vitamin D, though many foods in the United States and Europe, including milk and cereal, are fortified.

#### DOSE:

Below are the current recommendations, as set by the Institute of Medicine. Your health care provider will recommend an appropriate dose for you.

#### Current recommendations are:

- Infants 0–6 / 7–12 months: 10 mcg/day (400 IU/day). Upper limit 25–37.5 mcg/day or 1000–1500 IU/day.
- Children 1–3 / 4–8 / 9–18: 10–15 mcg/day (400–600 IU/day). Upper limit 62.5/75/100 mcg/day or 2500/3000/4000 IU/day.
- Adults under 70: 15 mcg/day (600 IU/day). Upper limit 100 mcg/day or 4000 IU/day.
- Adults over 70: 20 mcg/day (800 IU/day). Upper limit 100 mcg/day or 4000 IU/day.

Your health care provider may test your blood level of vitamin D to determine if you would benefit from vitamin D supplementation and to find the most effective dose. Vitamin D deficiency is defined as a serum 25-hydroxy vitamin D of <20 ng/mL (<50 nmol/L) and insufficiency as 21–29 ng/mL. Optimal vitamin D levels may be higher than 30 ng/mL in certain health conditions.