



# Vitamin D

Text Size:

Basics

Advertisement

## Background

[Synonyms](#)

[Evidence](#)

[Dosing](#)

[Safety](#)

[Methodology](#)

[Selected references](#)

## Vitamin D

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## Background

Vitamin D is found in many dietary sources such as fish, eggs, fortified milk, and cod liver oil. The sun also contributes significantly to the daily production of vitamin D, and as little as 10 minutes of exposure is thought to be enough to prevent deficiencies. The term "vitamin D" refers to several different forms of this vitamin. Two forms are important in humans: ergocalciferol (vitamin D2) and cholecalciferol (vitamin D3). Vitamin D2 is synthesized by plants. Vitamin D3 is synthesized by humans in the skin when it is exposed to ultraviolet-B (UVB) rays from sunlight. Foods may be fortified with vitamin D2 or D3.



The major biologic function of vitamin D is to maintain normal blood levels of calcium and phosphorus. Vitamin D aids in the absorption of calcium, helping to form and maintain strong bones. Recently, research also suggests vitamin D may provide protection from osteoporosis, hypertension (high blood pressure), cancer, and several autoimmune diseases.

Rickets and osteomalacia are classic vitamin D deficiency diseases. In children, vitamin D deficiency causes rickets, which results in skeletal deformities. In adults, vitamin D deficiency can lead to osteomalacia, which results in muscular weakness in addition to weak bones. Populations who may be at a high risk for vitamin D deficiencies include the elderly, obese individuals, exclusively breastfed infants, and those who have limited sun exposure. Also, individuals who have fat malabsorption syndromes (e.g., cystic fibrosis) or inflammatory bowel disease (e.g., Crohn's disease) are at risk.

## Synonyms

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