The Sunlight Vitamin

The summertime’s most prolific nutrient is found above. Vitamin D, also known as “the sunshine vitamin,” is unique in the fact that its predominant source is not food, but sunlight. As opposed to water-soluble vitamins that should be consumed daily, vitamin D is a fat-soluble vitamin, which means it is stored in fat and eliminated much more slowly.

Roles
Vitamin D plays an important role in your muscle, nerve, and immune systems. Specifically, it is used to form and maintain strong bones by helping the body absorb calcium. Nerves also use vitamin D to carry messages between the brain and parts of the body for muscle movement, and the immune system relies on it to help fight off invading bacteria and viruses.

Sources
You can get vitamin D through your skin, from your diet, and from supplements. The term "vitamin D" refers to several different forms of the vitamin. The two forms most important to humans are ergocalciferol (previtamin D2) and cholecalciferol (previtamin D3). Previtamin D2 is derived from plant sources and can only be obtained through diet. Previtamin D3 is the most readily absorbed form of vitamin D and is made when our skin is exposed to ultraviolet-B (UVB) rays from sunlight. Foods may be fortified with both previtamin D2 or D3, but the best way to build adequate amounts of vitamin D is by exposing the skin to the sun for 5 to 15 minutes a day.

Our body forms vitamin D naturally after direct exposure to sunlight; therefore, clothing, sunscreen, indoor living, shade, dark-colored skin, and cloudy days may compromise this process. Of all the factors that affect our ability to make vitamin D from sunlight, the most significant are latitude and time of year. During the winter months (November to February) in the northern half of the United States—above a line drawn between Boston and the northern border of California, there may not be enough UVB rays in sunlight for skin to produce vitamin D.

People who avoid the sun, cover their skin with sunscreen or clothing, or live in the northern half of the United States during the winter months should include good sources of vitamin D in their diets. However, very few foods contain vitamin D, and fortified foods provide most of the vitamin D in American diets.

- **Fatty fish** such as salmon, tuna, and mackerel are among the best sources with about 450 International Units (IU) per three ounces.
- **Beef liver, cheese, and egg yolks** provide small amounts.
• **Mushrooms** provide some vitamin D, which may be boosted by exposing these mushrooms to ultraviolet light.

• **Most milk** in the U.S. is fortified with 120 IU of vitamin D per serving. However, foods made from milk, like cheese and ice cream, are usually not fortified.

• **Many breakfast cereals, some brands of orange juice, yogurt, margarine, and soy beverages** have vitamin D added to them. So be sure to check the product labels. For example, fortified orange juice has around 137 IUs per serving.

Even with the fortification of foods, some people may still have difficulty getting enough vitamin D through the diet and may want to consider taking a supplement. There is some speculation that daily doses of 1,000 to 4,000 units of vitamin D can prevent ailments, such as cancer, cardiovascular disease, arthritis, diabetes, influenza, and immune disorders. However, further research needs to be conducted for these claims to be warranted. In short, vitamin D’s major benefit is to maintain healthy bones. It is also important to remember that **overdoses on vitamin D and other vitamins are primary caused by excessive intakes of vitamin supplements**.

### Recommended Intake

It depends on your age, but in the table below are the amounts that people of different ages should get on average each day, listed in International Units (IU):

<table>
<thead>
<tr>
<th>Age</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth to 12 months</td>
<td>400 IU</td>
</tr>
<tr>
<td>Children 1-13 Years</td>
<td>600 IU</td>
</tr>
<tr>
<td>Teens 14-18 years</td>
<td>600 IU</td>
</tr>
<tr>
<td>Adults 19-70</td>
<td>600 IU</td>
</tr>
<tr>
<td>Adults 71 years or older</td>
<td>800 IU</td>
</tr>
<tr>
<td>Pregnant &amp; breastfeeding teens &amp; women</td>
<td>600 IU</td>
</tr>
</tbody>
</table>

### Deficiency

Certain people may have difficulty getting enough vitamin D, such as older adults whose kidneys are not efficient in converting the vitamin into its active form, and those with certain disorders that cause problems utilizing fat properly, like Crohn’s or celiac disease. Since fat binds to the vitamin and prevents it from getting into the bloodstream, obesity may also prohibit people from getting enough vitamin D. People who fail to get enough vitamin D may develop soft, brittle bones, a condition known as rickets in children and osteoporosis in adults.

For more information see [HGIC 4081, Vitamin D](http://www.clemson.edu) and [HGIC 4067, Calcium](http://www.clemson.edu).

### Sources:


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