Take action against vitamin D deficiency

Vitamin D deficiency is common. But there are some simple things you can do to make sure you are getting enough vitamin D:

- Spend time in the sun.
- Eat foods rich in vitamin D or fortified with vitamin D.
  - Natural sources of vitamin D include fatty fish, eggs, and certain types of mushrooms.
  - Milk and some brands of yogurt, orange juice, margarine, and breakfast cereals may be fortified. Check the labels to be sure.
- Take vitamin D supplements.
- Consider vitamin D testing using LC/MS/MS, especially if you are at risk for vitamin D deficiency.

How do we get vitamin D?

We get vitamin D from the sun. After being out in the sun, our bodies make vitamin D. We also get vitamin D from food. This includes food that naturally has vitamin D in it like fatty fish. It also includes foods with added vitamin D (fortified foods). And we get it from vitamin pills.

What does vitamin D do in the body?

Vitamin D helps the body absorb calcium and phosphorus. This helps keep us from getting bone diseases like rickets, osteomalacia, and osteoporosis. Vitamin D does other things too. It helps our nerves, muscles, and immune system work right.1

So vitamin D affects many parts of the body. That’s why it has been linked to other medical conditions. These include:
- Cancer
- Diabetes
- Cardiovascular disease
- Autoimmune diseases

How much vitamin D is needed?

How much vitamin D a person needs depends on his/her age and risk factors. People with some risk factors need to get more vitamin D to achieve healthy levels.3 For example, obese people may need more than nonobese people. This is because vitamin D is stored in fat and is not available for the body to use.

It’s hard to measure the amount of vitamin D we get from the sun. So recommendations are usually made just for the vitamin D we get from food or supplements. Two recommendations are shown in the table.

<table>
<thead>
<tr>
<th>Life-Stage Group</th>
<th>Institute of Medicine (IU/day)</th>
<th>Endocrine Society (IU/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12 months</td>
<td>400</td>
<td>400-1000</td>
</tr>
<tr>
<td>1-18 years</td>
<td>600</td>
<td>600-1000</td>
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<td>19-70 years</td>
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<td>1500-2000</td>
</tr>
<tr>
<td>&gt; 70 years</td>
<td>800</td>
<td>1500-2000</td>
</tr>
<tr>
<td>Pregnant or nursing women</td>
<td>600</td>
<td>600-1000</td>
</tr>
<tr>
<td>14-18 years</td>
<td>600</td>
<td>600-1000</td>
</tr>
<tr>
<td>19-50 years</td>
<td>600</td>
<td>1500-2000</td>
</tr>
</tbody>
</table>
Who is at risk for vitamin D deficiency?
Lots of people are at risk. Some are at risk just because they don’t get enough sunshine. Spending as little as 10 minutes a day out in the sun without sunscreen might correct this. This is just an estimate. It can be more or less depending on your risk factors, the time of day, time of year, and the latitude where you live.

Other people at risk include:
• Obese people
• Elderly people, especially if they have had broken bones
• People with dark skin
• Breastfed infants
• Pregnant or nursing women
• People with certain medical conditions
  – Conditions that make it hard for the body to absorb fat
  – Hyperparathyroidism
  – Chronic kidney disease
  – Liver failure
  – Granuloma-forming disorders
  – Some lymphomas
• People taking certain medications, including steroids and medications used to treat HIV, epilepsy, or fungal infections

How is vitamin D measured?
Vitamin D is measured with a blood test. This test is called 25-hydroxyvitamin D or 25(OH)D for short. One way to measure 25(OH)D is with an immunoassay. But sometimes this method is not accurate. For example, some immunoassays don’t accurately measure 25(OH)D₂, one of the two forms of 25(OH)D. Another way is called liquid chromatography, tandem mass spectrometry (LC/MS/MS). It is the method used by the Centers for Disease Control and Prevention and by the National Institute of Standards and Technology. It is highly sensitive and accurate for both forms of 25(OH)D.

Imunoassays don’t give separate results for the 2 forms of 25(OH)D. The LC/MS/MS assay can, though. Knowing the 25(OH)D₂ and 25(OH)D₃ levels can tell how much of a patient’s vitamin D is coming from each form. This can help doctors better understand what’s going on with their patients and make better treatment decisions.

What do the results mean?
Not everyone agrees on what certain 25(OH)D levels mean. But many experts think levels <20 ng/mL mean the person has vitamin D deficiency. A level between 20 and 30 ng/mL means that the person is not getting enough vitamin D, but isn’t deficient. A level >30 ng/mL means the person has enough.

References