Background
Vitamin D is found naturally in only a few foods such as fish-liver oils, fatty fishes, mushrooms, egg yolks, and liver. In the United States, vitamin D commonly is added to milk and other foods.

Vitamin D is essential for good bone health, and it may help with muscle strength and protecting against cancer and type 2 diabetes.

Ultraviolet light from the sun helps people form vitamin D in the skin. It is transported to the liver and converted to 25-hydroxyvitamin D.

Doctors use this form of vitamin D to determine whether a person has enough vitamin D because it is a good reflection of the vitamin D that people receive from food and exposure to sunlight.

Intake recommendations
* Dietary Guidelines for Americans* indicate vitamin D is a nutrient of concern in American diets, advising that people choose foods that provide more vitamin D.

Percent of vitamin D deficiency by race/ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Hispanic white</td>
<td>2%</td>
</tr>
<tr>
<td>Mexican American</td>
<td>12%</td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td>31%</td>
</tr>
</tbody>
</table>

Other report findings
- Serum 25-hydroxyvitamin D levels generally decreased as age increased.
- Males and females had similar 25-hydroxyvitamin D levels.
- Serum 25-hydroxyvitamin D levels decreased by about 10% from NHANES 1988–1994 to more recent surveys conducted between 2001 and 2006.

The report found the highest rates of vitamin D deficiency in non-Hispanic blacks despite clinical data showing greater bone density and fewer fractures in this group compared to other race/ethnic groups. Further research is needed on this topic.

The *Second Nutrition Report* (www.cdc.gov/nutritionreport) provides:
- Rates of nutrient deficiencies
- Reference information for physicians and scientists to detect high or low nutrient levels in people
- A look at nutrient levels over time to detect trends of health significance
- The nutrition status of specific populations for nutrient deficiencies

Additional information about vitamin D is available online at https://ods.od.nih.gov/factsheets/VitaminD-HealthProfessional