Vitamin D Benefits

Getting enough vitamin D helps the growth and development of bones and teeth. It may also provide improved resistance to certain diseases.

Vitamin D is a fat-soluble vitamin in a family of compounds that includes vitamins D1, D2, and D3.

Your body produces vitamin D naturally when it's directly exposed to sunlight. You can also get vitamin D from certain foods and supplements to ensure adequate levels of the vitamin in your blood.

Vitamin D has several important functions. Perhaps the most vital are regulating the absorption of calcium and phosphorus and facilitating normal immune system function (1Trusted Source).

Getting enough vitamin D is important for typical growth and development of bones and teeth, as well as improved resistance to certain diseases.

Here is more information about the benefits of vitamin D, plus information about downsides, how much you need, and foods with vitamin D.

1. Vitamin D may fight disease

In addition to its primary benefits, research suggests that vitamin D may also play a role in:

- **Reducing the risk of multiple sclerosis (MS).** A 2018 review of population-based studies found that low levels of vitamin D are linked with an increased risk of MS (2Trusted Source).
- **Decreasing the chance of heart disease.** Low vitamin D levels have been linked to increased risk of heart diseases such as hypertension, heart failure, and stroke. But it's unclear whether vitamin D deficiency contributes to heart disease or simply indicates poor health when you have a chronic condition (3Trusted Source).
- **Reducing the likelihood of severe illnesses.** Although studies are mixed, vitamin D may make severe flu and COVID-19 infections less likely. A recent review found that low vitamin D levels contribute to acute respiratory distress syndrome (4Trusted Source, 5Trusted Source).
- **Supporting immune health.** People who do not have adequate vitamin D levels might be at increased risk of infections and autoimmune diseases, such as rheumatoid arthritis, type 1 diabetes, and inflammatory bowel disease (6Trusted Source).

2. Vitamin D may regulate mood and reduce depression

Research has shown that vitamin D might play an important role in regulating mood and decreasing the risk of depression.

A review of 7,534 people found that those experiencing negative emotions who received vitamin D supplements noticed an improvement in symptoms.

Vitamin D supplementation may help people with depression who also have a vitamin D deficiency (7Trusted Source).

Another study identified low vitamin D levels as a risk factor for more severe fibromyalgia symptoms, anxiety, and depression (8Trusted Source).

3. It might support weight loss

People with higher body weights have a greater chance of low vitamin D levels (9Trusted Source).

In one study, people with obesity who received vitamin D supplements in addition to following a weight loss diet plan lost more weight and fat mass than the members of the placebo group, who only followed the diet plan (9Trusted Source).

In an older study, people taking daily calcium and vitamin D supplements lost more weight than subjects taking a placebo supplement. The researchers suggest that the extra calcium and vitamin D may have had an appetite-suppressing effect (10).

The current research doesn't support the idea that vitamin D would cause weight loss, but there appears to be a relationship between vitamin D and weight.

Looking for a vitamin D supplement?

We did the research for you. See Healthline's picks for the 13 best vitamin D supplements.

Vitamin D deficiency

Several factors can affect your ability to get adequate vitamin D from sunlight alone.

You may be less likely to absorb enough vitamin D from the sun if you (1Trusted Source):

- live in an area with high pollution
- use sunscreen
- spend most of your time indoors
- live in a big city where buildings block sunlight
- have darker skin (The higher the levels of melanin, the less vitamin D your skin can absorb.)

These factors can increase your risk of vitamin D deficiency. That's why it's important to get some of your vitamin D from non-sunlight sources.

What are the symptoms of vitamin D deficiency?

The symptoms of a vitamin D deficiency in adults may include (1Trusted Source):

- tiredness, aches, and pains
- severe bone or muscle pain or weakness
- stress fractures, especially in your legs, pelvis, and hips

A healthcare professional can diagnose a vitamin D deficiency by performing a simple blood test. If you have a deficiency, your doctor may order X-rays to check the strength of your bones.

If you receive a diagnosis of vitamin D deficiency, a healthcare professional will likely recommend that you take vitamin D supplements. If you have a severe deficiency, they may instead recommend high dose vitamin D tablets or liquids.

You should also make sure to get vitamin D through sunlight and the foods you eat.

Risks of getting too much vitamin D

If you take excessive amounts of vitamin D supplements, you may get too much of it. However, this is unlikely to happen through diet or sun exposure because your body regulates the amount of vitamin D produced through sun exposure.

Vitamin D toxicity can lead to an increase in your blood calcium levels. This can result in a variety of health issues, such as (11Trusted Source):

- nausea
- apathy
- vomiting
- abdominal pain
- dehydration
- confusion
- increased thirst

Some food sources of vitamin D

Some foods contain vitamin D naturally, and others are fortified with it. You can find vitamin D in the following foods (1Trusted Source):

- salmon
- sardines
- herring

- canned tuna
- cod liver oil
- beef liver
- egg yolk
- shrimp
- regular mushrooms and those treated with ultraviolet light
- milk (fortified)
- certain cereals and oatmeals (fortified)
- yogurt (fortified)
- orange juice (fortified)

It can be hard to get enough vitamin D each day through sun exposure and food alone, so taking vitamin D supplements could help.

How much do you need?

There has been some debate over the amount of vitamin D required for optimal functioning. Recent studies indicate that we need more vitamin D than previously thought.

Some of the main controversies surrounding vitamin D are (11Trusted Source, 12Trusted Source):

- standardization of methods for measuring vitamin D levels
- the difference between free and total vitamin D testing
- defining low vitamin D status (insufficiency versus deficiency)
- screening versus treatment
- vitamin D threshold for the general population relative to a particular condition (such as pregnancy or breastfeeding) and health issues (such as kidney failure or osteoporosis)

Blood serum levels considered adequate range from 50–100 nanomoles per liter (nmol/L). Depending on your blood level, you may need more vitamin D.

The Recommended Dietary Allowances for vitamin D are as follows (1Trusted Source):

- infants (0–12 months): 10 mcg (400 IU)
- children and teens: 15 mcg (600 IU)
- adults ages 18–70: 15 mcg (600 IU)
- adults over age 70: 20 mcg (800 IU)
- pregnant or breastfeeding women: 15 mcg (600 IU)

The bottom line

Vitamin D has many potential benefits. It may reduce the risk of certain diseases, help improve mood and reduce depression symptoms, and help with weight management.

It's hard to get enough vitamin D through your diet alone, so you may want to ask a healthcare professional for a blood test and consider taking a vitamin D supplement.

Just one thing

Try this today: Add fish to your diet a couple of times per week to help boost your intake of vitamin D. Try salmon in a mustard sauce, grilled sardines, or canned tuna on a salad to create different meal options.