

Vitamin D

SELF-CARE FORUM FACT SHEET NO. 22

This fact sheet is intended to help you understand what vitamin D is, why it is important and how to get your recommended daily intake of this essential nutrient.

Useful facts

What is Vitamin D?

Vitamin D was first discovered in cod liver oil, but it's more like a hormone that our bodies need to stay healthy. It is unusual because we can get it in two ways: from certain foods and from sunlight.

Our bodies make vitamin D when sunlight hits our skin. This only happens when the sun is high enough in the sky—basically, when your shadow is shorter than you are. A higher sun means more UVB light reaches us, and it's this UVB light that triggers vitamin D production in the skin.

In the south of the UK, the sun is strong enough for this between early April and mid-September. In the north of the UK, this period is shorter—from June to mid-August.

Because sunlight in the UK is not very strong, people with darker skin need more time in the sun to make the same amount of vitamin D as people with lighter skin.

Where is it found?

Food alone does not give us enough vitamin D, but it can help alongside sunlight in summer and vitamin D supplements in winter. Foods containing vitamin D include:

- oily fish such as salmon, sardines, trout, herring and tuna
- some mushrooms that have been exposed to sunlight - this will be stated on the packaging
- small amounts in egg yolks, meat, liver and milk (amounts can vary during the year)
- fortified foods with added vitamin D such as margarine, some breakfast cereals, infant formula milk and some yogurts.

Why is vitamin D important?

Vitamin D plays an important role in keeping our bodies healthy. It helps our muscles work properly, supports healthy blood pressure, and helps control inflammation in the body. There is also evidence that having enough vitamin D may help reduce the risk and severity of depression.

Bone health:

Vitamin D helps the body absorb calcium and other minerals and allows them to be built into our bones and teeth. This helps keep bones strong and healthy. Having enough vitamin D may also help reduce the risk of falls. Together, stronger bones and fewer falls mean a lower risk of broken bones.

Immune system:

Vitamin D is important for a healthy immune system. Taking a vitamin D supplement during winter can lower the chance of catching coughs and colds. If you do get sick, vitamin D may help reduce how severe the illness is and how long it lasts. Research also suggests that having enough vitamin D may lower the risk of heart attacks and some types of cancer. Low vitamin D levels have been linked to a higher risk of conditions such as type 2 diabetes and multiple sclerosis.

Further information

- [Vitamin D - NHS \(www.nhs.uk\)](https://www.nhs.uk)
- [Calcium - British Dietetic Association \(BDA\)](https://www.bda.uk.com)
- [Sun safety | Reduce your skin cancer risk | Cancer Research UK](https://www.cancerresearchuk.org)



Recommended intake

The NHS recommends that everyone takes a daily 10 microgram vitamin D supplement in the autumn and winter. Eating foods with vitamin D and getting sunlight in spring and summer should be enough for most people.

You might also see vitamin D measured in International Units (IU) on packaging. 400iu is 10µg, the recommended intake.

Some people are more likely to have low vitamin D levels. The NHS recommends these groups take vitamin D supplements all year, not just in winter:

- People aged 65 years or over
- Pregnant and breastfeeding women, especially teenagers and young women
- Babies and children under 4 who drink less than 500ml of infant formula a day
- People who get little or no sunlight (for example those who stay indoors a lot or who cover their skin for cultural reasons)
- People with darker skin such as those of African, African-Caribbean or South Asian background
- Who are obese
- Who have experienced multiple fractures

For people at higher risk of vitamin D deficiency, 10 micrograms a day may not be enough. These groups may benefit from:

- 25 micrograms a day in spring and summer
- 50 micrograms a day in autumn and winter

Children under 5 should not take more than 10 micrograms a day.

Deficiency

In children, low vitamin D can cause a condition called rickets. In adults, it is called osteomalacia. When the body does not have enough vitamin D, bones do not get enough minerals. This makes them soft and weak.

In children, soft bones can bend, especially in the legs and hips. In adults, bones usually do not bend but can ache, especially in the legs, hips and lower back, and they may break more easily.

Because vitamin D affects many parts of the body, low levels can cause other symptoms too. These can include feeling very tired, low mood, and getting coughs and colds more often.

If you are worried that your vitamin D level may be low, try to eat foods that contain vitamin D and consider taking a vitamin D supplement, which is inexpensive and easy to find. Vitamin D is best absorbed when taken with food that contains some fat, such as milk or a meal.

Sun safety

Sunlight helps the body make vitamin D from early April to mid-September.

For some people, spending up to 30 minutes in the midday sun with the face, arms and hands uncovered is enough to make vitamin D. However, people with darker skin and those over the age of 65 do not make vitamin D as easily.

If you plan to stay in the sun for longer, protect your skin to avoid sunburn.

Safety and risks

It is safe to take a vitamin D supplement while also eating foods that contain vitamin D and spending time outside in the sunshine.

If you take more than one supplement that contains vitamin D, check the amount in each one. Your total daily intake should not be more than 100 micrograms (µg).

Taking more than 100 µg a day is not safe. To help protect people, the UK food supplement industry limits vitamin D in a single product to 75 µg (3,000 IU). You should not take more than this unless a healthcare professional advises you to.

Always choose a supplement that is right for your age or health needs. Taking too much vitamin D over a long period can cause high levels of calcium in the blood. This can damage the kidneys and the heart.

