

Food Fact Sheet: Vitamin D

Sunshine, not food, is where most of your vitamin D comes from. So even a healthy, well balanced diet, that provides all the other vitamins and goodness you need, is unlikely to provide enough vitamin D. Read on to find out the best ways to get enough vitamin D safely.

What is vitamin D?

You make vitamin D under your skin when you are outside in daylight, which is the reason vitamin D is sometimes called the 'sunshine vitamin'. A vitamin is something that helps our body function – a 'nutrient' – that we cannot make in our body.

Vitamin D is different because even though we call it a vitamin, it is actually a hormone and we can make it in our body.

What does vitamin D do to the body?

Vitamin D works with calcium and phosphorus for healthy bones, muscles and teeth. Vitamin D is also important in protecting muscle strength and preventing rickets, osteomalacia and falls.

Even if you have a calcium-rich diet (for example from eating plenty of low-fat dairy foods and green leafy vegetables), without enough vitamin D you cannot absorb the calcium into your bones and cells where it is needed. Vitamin D may have other important roles in the body, but there isn't enough evidence at the moment to make any conclusions.

What happens if I don't get enough vitamin D?

Some babies are born with low levels of vitamin D and some do not get enough in breast milk; this can result in fits or rickets.

Older children who do not get enough vitamin D can also develop rickets. Rickets can cause permanent deformities to the bone, weaken muscles and reduced growth.

Adults who don't get enough vitamin D can develop osteomalacia. This makes the bones softer as the minerals needed to keep them strong cannot get into the bone. People with osteomalacia experience bone pain and muscle weakness.

When is vitamin D made in skin?

The amount of vitamin D you make depends on how strong the sunlight is. You will make more in the middle of the day, when the sun is strongest. You will also make more when you are in direct sunlight than in the shade or on a cloudy day.

Sun safety

It is the sun's ultraviolet rays that allow vitamin D to be made in the body. You do not have to sunbathe to make vitamin D. In the UK, ultraviolet light is only strong enough to make vitamin D on exposed skin (on the hands, face and arms or legs) during April to September. However strong sun also burns skin so we need to balance making vitamin D with being safe in the sun - take care to cover up or protect your skin with sunscreen before you turn red or get burnt. Find out more about sun safety on the NHS Choices website.

During the autumn and winter, we get vitamin D from our body's stores and from food sources but these are insufficient to keep up vitamin D levels. The only way to ensure a healthy vitamin D status at this time of year is to take a supplement.

Groups at risk of low vitamin D



- babies and young children, and children and adolescents who spend little time playing outside
- pregnant and breastfeeding people
- people over 65 years old because their skin is not as good at making vitamin D
- people with darker skin tones – people of Asian, African, Afro-Caribbean and Middle Eastern descent – living in the UK or other northern climates
- if you always cover most of your skin when you are outside
- the further North you live, the less sufficiently strong sunlight there is for you to make vitamin D
- anyone who spends very little time outside during the summer – the housebound, shop or office workers, night shift workers
- if the air is quite polluted

Which foods contain vitamin D?

Help your body get more vitamin D by eating plenty of vitamin D rich foods, including:

- oily fish such as salmon, sardines, pilchards, trout, herring, kippers and eel contain reasonable amounts of vitamin D
- cod liver oil contains a lot of vitamin D, but don't take this if you are pregnant
- egg yolk, meat, offal and milk contain small amounts but this varies during the seasons
- margarine, some breakfast cereals, infant formula milk and some yoghurts have added vitamin D

Where are vitamin D supplements available?

Vitamin D supplements and multivitamins are now widely available to buy from chemists/pharmacies, supermarkets and health food shops. Some people who are pregnant or breastfeeding and children aged six months to four years may qualify for Healthy Start vitamins which contain vitamin D. Ask your health visitor about this.

A supplement only needs to contain ten micrograms to meet the recommendation – those with a higher content of vitamin D are unnecessary and could be harmful in the long run.

Who needs a vitamin D supplement?

- All adults and children over the age of one should consider taking a daily supplement containing ten micrograms of Vitamin D especially during autumn and winter.
- Those in the at risk groups, as above, should consider taking a supplement containing ten micrograms of Vitamin D all year round.
- All babies under one year should be given a daily supplement of 8.5 to ten micrograms unless they have more than 500ml of fortified formula milk.

Taking a vitamin D supplement as well as eating foods rich in vitamin D and spending a lot of time outside in sunshine is not a problem.

However do not take more than one supplement containing vitamin D (count cod-liver oil as a supplement) as you could exceed the ten microgram recommendation. Always choose a supplement tailored to the age group or condition, as fish liver oils and high dose multivitamin supplements often contain vitamin A, too much of which can cause liver and bone problems, especially in very young children, and the elderly.

Summary

Vitamin D works with calcium and phosphorus for healthy bones, muscles and teeth. You make the most vitamin D under your skin when you are outside in the middle of the day in the summer months.

You can get vitamin D from some foods including fortified foods and everyone is recommended to take a supplement, especially during autumn and winter.

There are some at risk groups who are recommended to take daily vitamin D supplements all year round. If you are concerned you are not getting enough vitamin D, speak to your doctor, health visitor, or ask to be seen by a dietitian.