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How to boost your vitamin D levels this winter

As we enter the winter months the loss of sunshine reduces the amount of vitamin D your body produces – this poses a health risk to everyone in the UK. But what happens to our vitamin D levels during winter, and how can we support our health by boosting them until the sunshine returns?

It's that time of year where we once again swap our sunny summer activities for crisp autumnal walks and dark, cosy evenings in. While there may be many aspects of autumn we enjoy, one thing we do not get to do is enjoy much sunshine. So what happens to our levels of vitamin D, the so-called 'sunshine vitamin', over autumn and winter?

Vitamin D and sunlight

"Vitamin D is known as the sunshine vitamin because sunlight on skin outdoors produces vitamin D," says Sian Porter, dietitian and spokesperson for the [British Dietetic Association](#) (BDA). "Everyone should try to spend some time outside daily in the sun whilst being sun-safe and avoiding burning."

"Even though we call it a vitamin, vitamin D is different because it is actually a hormone – which is a chemical messenger. Unlike some other vitamins, we can make it in our body through the action of sunlight."

The relationship between vitamin D production and sunlight is a straightforward case of the stronger the sunlight, the more vitamin D our bodies make. The amount of sunlight we get in the UK summertime enables most of us to produce healthy levels without having to think about it. Which is great as vitamin D is integral to our health.

Porter explains: "Vitamin D has a key role in the normal function of the immune system and in bone, tooth and muscle health."

Vitamin D and COVID-19

Porter advises caution over the recent attention given to vitamin D and **COVID-19**: "There was a lot of interest in vitamin D during the pandemic but there isn't currently enough evidence to say that that vitamin D reduces the risk of coronavirus."

However, interest and research in this area is growing. Some studies suggest that taking vitamin D supplements lowers the risk of COVID-19¹. One 2022 study that suggested it lowers severity of COVID-19 and recommended vitamin D as a supporting therapy, alongside other more established treatments².

Vitamin D and winter

In the winter months we do need to think about our vitamin D production. From October to March, the ultraviolet light from the sun is not strong enough during the shorter, darker days to produce sufficient vitamin D levels.

Instead, unless we're taking supplements, we get nearly all our vitamin D from the food we eat. The problem is that even when we eat the right foods, those foods are unlikely to contain enough vitamin D to make up for the lost sunlight.

Official guidance now encourages us to take action in order to protect ourselves from vitamin D deficiency and associated health risks. According to healthcare experts, this is a job we are all tasked with regardless of age, ethnicity, location and lifestyle.

In a statement issued winter 2020, [Public Health England](#) (PHE) and the [National Institute for Health and Care Excellence](#) (NICE) advised that everyone should take a vitamin D supplement during winter months³.

The risks of vitamin D deficiency

The geographical location of the UK and lack of strong sunlight for half the year means that everyone should be conscious about their vitamin D intake in winter. However, there are several factors that contribute to more chance of low vitamin D levels and [vitamin D deficiency](#).

Babies and children

Babies are a high-risk group because some are born with low levels of vitamin D and some are unable to get enough through breast milk. Vitamin D deficiency can damage bone development in growing babies and children because it affects calcium levels.

They can develop rickets, which is a condition that includes bone stunted growth, bone deformities, fractures, fits and pain. Many studies have linked vitamin D insufficiency and deficiency with bone and limb problems in children⁴.

Adults and the elderly

In adults, vitamin D deficiency can cause tiredness and general aches and pains of various degrees of severity in the ribs, lower back, hips, pelvis, thighs, shin bones and feet. Hairline fractures – a small crack or bruise on the bone – can happen.

In more severe cases, poor vitamin D levels can result in osteomalacia, a condition in which bones become soft, weak and prone to breakage. Without sufficient vitamin D, the minerals that are needed to make bones strong are unable to enter, resulting in weak muscles and bone pain.

Osteoporosis is a progressive condition that effects the elderly population the worst. [Age UK](#) warns of the dangers of poor vitamin D levels in the over-50s. It is thought that more than 1 in 2 women and 1 in 9 men in this age group will break a bone due to osteoporosis⁵. PHE and NICE also warn that there's an increased risk of falls in older people, which can result in serious injury.

What makes someone more at risk?

There are a few factors that put people more at risk of vitamin D deficiency. Porter outlines the groups in the UK most likely to be affected:

- Babies born and young children.
- Children and adolescents who spend little time playing outside.
- Pregnant and breastfeeding women.
- People over 65 years – as 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.

The relationship between people with dark skin living in northern climates where the sun is weaker, like the UK, and low vitamin D levels has been confirmed in many studies. In one study of around 450,000 people aged 40–69 years, 53% of Asian and 35% of black people had vitamin D deficiency, compared to 12% among the white people⁶.

PHE and NICE also emphasise that those with dark skin are more at risk and recommend that those with African, African-Caribbean or south Asian backgrounds continue to take vitamin D supplements over spring and summer

Porter goes on to list other factors that can contribute to lower vitamin D levels. Anyone could be at risk if:

- They are housebound, spend little time outside or cover up for personal, cultural or religious reasons.
- They live in the north of the UK where sunlight is less strong.
- They spend very little time outside during the summer – the housebound, shop or office workers, night shift workers.
- They live somewhere where the air is quite polluted.

How to boost your vitamin D intake

Although you may have little control over some of these factors, it's important to understand the ones you can change. The key to boosting your vitamin D levels when it's most needed over the winter months is a combination of healthy lifestyle habits, like supplementing the right foods with vitamin D tablets.

Food for thought

"There are a few foods that contain vitamin D," explains Porter. "The best source is oily fish such as salmon, sardines and mackerel. Other sources include eggs yolks, red meat, certain mushrooms, and fortified products such as spreads, yoghurts and breakfast cereal."

A diet providing the optimum amount of vitamin D from food would contain:

- Oily fish such as salmon, sardines, trout, pilchards, herring, eel and kippers.
- Cod liver oil - but do not take this if you are pregnant.
- Egg yolk, meat, offal and milk - contain small amounts.
- Margarine, some breakfast cereals, infant formula milk and some yoghurts.
- Some leafy, green vegetables and certain mushrooms.

"It is difficult to get enough vitamin D from food alone but including these food sources in your diet will help," adds Porter.

The BDA makes it clear that sunshine - not food - is where you get most of your vitamin D. Crucially, even a [healthy diet](#) that includes the food listed above is unlikely to provide sufficient levels.

One-a-day supplements

This is where [vitamin D supplements](#) can make all the difference this winter, so long as you combine them with a healthy, balanced diet and time outdoors.

According to official guidance on the PHE website, you should take a daily supplement of 10 micrograms³. Babies under 1 year need slightly less, between 8.5 and 10 micrograms unless they have over 500 ml of fortified formula milk daily.

As always, too much of anything can be dangerous and it is possible to take too much, but up to 100 micrograms a day is considered acceptable. BDA also cautions against taking more than one multivitamin a day as too much vitamin A can cause bone and liver problems.

Vitamin D supplements and multivitamins are widely available to purchase from supermarkets, health food shops, and pharmacies. An added bonus for parents, they can come in many forms such as flavoured [chewable sweets](#), making them more appealing to children. Pregnant or breastfeeding woman, as well as children aged 6 months to 4 years, may qualify for 'Healthy Start' vitamins containing vitamin D.

Further reading

1. [Gibbons et al: Association between vitamin D supplementation and COVID-19 infection and mortality.](#)
2. [Shah et al: Does vitamin D supplementation reduce COVID-19 severity?: a systematic review.](#)
3. [GOV.UK: Statement from PHE and NICE on vitamin D supplementation during winter.](#)
4. [Pettifog et al: Chapter 67 - Vitamin D deficiency and nutritional rickets in children.](#)
5. [Age UK: Osteoporosis.](#)
6. [Lin et al: Distribution of vitamin D status in the UK: a cross-sectional analysis of UK Biobank.](#)

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