

# Vitamin D

an essential nutrient for all...  
but who is at risk  
of vitamin D deficiency?



Important information for  
healthcare professionals

## Why is vitamin D important?

Vitamin D plays an important role in maintaining good bone health. Conditions such as rickets in children, and osteomalacia in adults, are the best understood consequences of vitamin D deficiency. Emerging evidence suggests vitamin D deficiency may also have a role to play in a range of other medical conditions.

A significant proportion of the UK population has low vitamin D levels. Children are one of the groups especially at risk of deficiency, with reported cases of rickets increasing in Scotland in recent years.

Low vitamin D levels are a particular issue for all pregnant and breastfeeding women, infants and children under 5 years of age, all people aged 65 years and over, black and other darker-skinned minority ethnic or mixed race groups, and those with limited exposure to sunlight. Pregnant women need to ensure that not only their own requirement for vitamin D is met, but that they also build up adequate stores in the developing fetus for early infancy.

It is essential that those most at risk are aware of the implications of vitamin D deficiency and, more importantly, what can be done to prevent it.



# How do we get Vitamin D?

## From the sun

Our bodies can create most of the vitamin D we need through exposure to sunlight. In Scotland we only get enough sunlight of the right wavelength (UVB) to create vitamin D in this manner for approximately half the year (April – September). For the rest of the year, people in Scotland are dependent on vitamin D stores that have built up in our bodies during these summer months, and on other sources such as dietary intake and supplements.

10–15 minutes of unprotected Scottish sun exposure is safe for all, however, this may not be sufficient to make vitamin D. Groups at risk of vitamin D deficiency, particularly people with darker skin and older people, may require far longer exposure than this, and so taking vitamin D supplements should be recommended to at-risk groups rather than recommending that they spend more time in the sun without protection. Once sunscreen is correctly applied, vitamin D synthesis is blocked.

**Remember** – Staying in the sun for prolonged periods without the protection of sunscreen increases the risk of skin cancer. The aim during the summer months is to achieve enough exposure to sunlight for vitamin D synthesis, whilst minimising the risk of skin cancer. Care should always be taken to cover up or apply sunscreen well before any exposed skin becomes red or begins to burn.

Sunbeds are not a recommended source of vitamin D.

## How can you help?

This leaflet is for all health professionals, to help you understand the issues surrounding vitamin D and what you need to do to help.

You can help by explaining to all at-risk patients the importance of vitamin D, and explaining where they can get vitamin D supplements if required.

## From dietary sources

Certain foods can contribute to vitamin D levels. However, there are relatively few foods that contain significant amounts of vitamin D, making it almost impossible to meet vitamin D needs from diet alone. Average daily intakes of vitamin D from diet range from 2–4 µg/day, compared with a recommended intake for adults in at-risk groups of 10 µg/day.

Vitamin D is found naturally in small amounts in oily fish (such as salmon, mackerel and sardines), eggs and meat. Manufacturers in the UK are also required by law to add it to all margarines with standard fat content of 80%. Vitamin D is also voluntarily added to some breakfast cereals, soya and dairy products, powdered milks and low-fat spreads. However, amounts in these products vary and are often quite small.

Breastfed babies up to the age of 6 months get their vitamin D from their mother's breast milk, which is one reason why it is so important for pregnant and breastfeeding mothers to maintain adequate vitamin D levels of their own. Infant formula milk is fortified with vitamin D, so formula-fed infants acquire their vitamin D in this way.

If you have concerns about a breastfeeding mother's vitamin D status, for example if you are aware she is not taking vitamin D supplements, or did not take them during pregnancy, you should advise that the baby be given vitamin D supplements from one month of age, rather than waiting until 6 months. All breastfeeding women should take a vitamin D supplement throughout their period of breastfeeding.

## From supplements

Women and children participating in **Healthy Start** can get free supplements containing vitamin D. The women's supplements provide 10 µg/day, and the children's vitamin drops provide 7.5 µg/day. NHS Boards are responsible for supplying Healthy Start vitamin supplements. They may also choose to sell them or supply them free of charge to customers who are not eligible for Healthy Start. For more information visit **[www.healthystart.nhs.uk](http://www.healthystart.nhs.uk)**. Uptake of Healthy Start vitamins should be encouraged. Commonly available vitamin supplements for the 0–5s contain 10 µg of vitamin D, which is more than the Scientific Advisory Committee on Nutrition recommends. This is acceptable.

Single vitamin D supplements are, at present, only available to buy commercially in a limited number of outlets. The best sources are the larger branches of high street chemists and some health food stores.

## What if somebody can't get enough vitamin D?

It is important that people who are at risk of vitamin D deficiency take a vitamin D supplement. The recommended daily supplements are as follows:

<b>People at risk of vitamin D deficiency supplement</b>	<b>Daily vitamin D</b>
All pregnant and breastfeeding women	10 µg/day
Infants aged 1–6 months who are exclusively breastfed and where the mother has a low vitamin D status	7.5 µg/day
All infants and children aged from 6 months to 5 years <sup>1</sup> , unless they are drinking 500 ml (a pint) or more of infant formula a day (only recommended for children up to the age of 1 year)	7.5 µg/day
People who are not exposed to much sun, e.g. housebound individuals and those who cover their skin for cultural reasons	10 µg/day
All people aged 65 years and over, in particular those living in institutions or who are not regularly exposed to sunlight	10 µg/day

<sup>1</sup>Information in this leaflet is based on *Update on Vitamin D: Position statement by the Scientific Advisory Committee on Nutrition, 2007* (see [www.sacn.gov.uk](http://www.sacn.gov.uk)). However, as a precautionary measure the recommendations in this table for infants and children have been partly based on recommendations in the earlier report *Weaning and the Weaning Diet* (Dept of Health, 1994), and are set for a slightly wider age group.

## Who is at risk of vitamin D deficiency?



- All pregnant and breastfeeding women, especially teenagers and young women.
- Children under 5 years of age.
- All people aged 65 years and over.
- People who are not exposed to much sunlight, for example those who cover their skin for cultural reasons, are housebound or who stay indoors for long periods.
- People who have darker skin and therefore do not produce as much vitamin D from exposure to sunlight. Most cases of clinical vitamin D deficiency in Scotland have been reported among children of South Asian origin.

## What can you do to improve vitamin D take-up?

As a health professional, you can make a significant difference to people's health by ensuring that those at risk are aware of how important it is they get enough vitamin D, and by recommending that they take an appropriate daily supplement.

**Remember** – If you are recommending vitamin supplements to pregnant women, ensure this group avoids multivitamins containing vitamin A (retinol), due to the potentially damaging effects of vitamin A to the fetus *in utero*. There are multivitamin supplements available that are specifically formulated for pregnant women that exclude vitamin A.

**HEALTHY  
START**

Please ensure that women and families who may be eligible for Healthy Start know they can apply for this benefit. Healthy Start vitamins are available free through this scheme. Visit [www.healthystart.nhs.uk](http://www.healthystart.nhs.uk) for more information.

We are happy to consider requests for other languages or formats. Please contact **0131 536 5500** or email [nhs.healthscotland-alternativeformats@nhs.net](mailto:nhs.healthscotland-alternativeformats@nhs.net).

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