

A guide for HCPs

An introduction to vitamin D

What is vitamin D?

Vitamin D is an essential nutrient needed by the body to regulate the amount of calcium in the skeleton, and is therefore responsible for maintaining good bone health.

In pregnant women, babies and small children, vitamin D is needed to help with the growth and development of the new skeleton. A lack of vitamin D in babies and small children can lead to rickets; a condition where the bones do not develop as they should and become more flexible.



Sources of vitamin D

The main source of vitamin D is sunlight. UV rays from the sun (between the months of March and September) are able to convert a 'precursor' compound of vitamin D called 7-dehydrocholesterol in the skin, to cholecalciferol, which is further processed by the body to become the active form of vitamin D (also called calcitriol) which our bodies can use.

Smaller amounts of vitamin D are found in some foods such as oily fish, liver and eggs. Some foods such as fat spreads and breakfast cereals are fortified; however all contributions from food sources are minimal in comparison to that from sunlight.

The lack of summer sun in the UK means it is likely that most of us do not have adequate vitamin D stores (defined by having a serum vitamin D level of between 25-50 nmol/L [10-20 micrograms/l]); and it is suspected that a large number of people in the UK may be deficient (defined by a serum vitamin D level of below 25 nmol/L [10 micrograms/l]).

In babies and young children this problem is compounded by recommendations to be 'sun safe', with many young children only going out in the sunshine once they are covered in a high factor sunscreen or sunblock. This prevents the UV rays needed to make vitamin D from getting to the skin. Covering skin with clothing has the same effect.

The lack of readily available, good sources of vitamin D within the UK can present a problem for those with additional vitamin D needs, seen in pregnancy and infancy.



Vitamin D requirements

There are currently no requirements for vitamin D between the ages of 4-64 as it is assumed we are getting all we need from the sun, although it is widely acknowledged that this is not the case in the UK.

Pregnant and lactating women:

Due to the important role vitamin D plays in growth and development of the infant's skeleton, it is recommended that pregnant and lactating women achieve 10µg/day. To ensure this amount can be reached supplements are recommended.

Infants under 6 months:

The Reference Nutrient Intake (RNI) for babies younger than six months to allow for growth is 8.5µg/day. Vitamin drops containing vitamin D are recommended for babies and are available on the Healthy Start scheme. Formula-fed babies do not require vitamin drops until milk intake drops below 500ml a day, as this is already fortified.

Infants from 6 months and young children:

Infants and young children have an RNI of 7µg/day. It is worth considering that young children often do not eat good quantities of vitamin D-containing foods. This is due to the fact that vitamin D rich foods, such as liver and oily fish are often not part of the weaning diet in the UK at this age.



Special considerations should be given to people with:

- Darker skin tones
- Limited exposure to sunlight (housebound, repeated application of suncream or dressing for cultural style)
- A strict vegetarian or vegan diet

Supplements should be strongly considered in these cases.

Ways to improve Vitamin D intake:

- Thirty minutes of sun exposure (not in midday sun) on arms and face, 2-3 times a week in the summer months can help to maintain body stores of vitamin D (Sun exposure in this sense should never lead to burning or tanning).
- Increase intake of food sources of vitamin D, eg fortified breakfast cereals.
- Follow on (from 6 months onwards) and growing up milks (from the 12th month onwards) contain added vitamin D and can provide a valuable source for infants and young children.
- For adults, a vitamin D supplement or general multi-vitamin containing vitamin D is recommended. Pregnant women should ask their pharmacist for advice when choosing supplements. Check to make sure the supplement contains 10µg/day.
- Healthy Start vitamin drops are suitable for infants and children up to 5 years of age and are free to those families who qualify.
Find out more here: www.healthystart.nhs.uk



**For healthcare professional use.
For further copies of this leaflet call 0845 050 1351**