Advocating the use of vitamin D

Health visitors have a key role to play in promoting the importance of vitamin D through:

- **Encouraging the uptake of initiatives such as Healthy Start vitamins in England, Wales and Northern Ireland and Best Start Foods in Scotland**
- **Supporting the increase of local availability of vitamin D supplements**
- **Recommending vitamin D supplements and increasing vitamin D supplement use in specific population groups[1].**
- **Identifying population groups they work with who could be deficient in vitamin D.**

Please see Table 1 for more information.

The aim of this GPP is to highlight the important role health visitors have in improving vitamin D uptake in communities. It will outline:

- Recommendations for who needs vitamin D and when
- Foods containing or fortified with vitamin D
- Complications of vitamin D deficiency
- Current understanding of vitamin D relating to COVID-19
- Good practice points for health visitors

What is vitamin D and why is it important?

- Since the 1920s, vitamin D has been identified as being important in preventing rickets and, over recent years, its importance for all our health has been highlighted, most recently in the Scientific Advisory Committee on Nutrition (SACN) report[1].
- Vitamin D is a fat-soluble vitamin that is present in or added to certain foods, and available as a dietary supplement. Vitamin D is required for regulation of calcium and phosphorus metabolism and is important for keeping bones and muscles healthy[1]. In children, vitamin D deficiency can lead to rickets, and in adults, it can lead to osetomalacia[2].
- Vitamin D is primarily synthesised in the skin, upon exposure to sunlight containing sufficient ultraviolet B (UVB) radiation[1]. Those with dark skin have a higher level of melanin pigment, which absorbs a larger proportion of the UVB radiation, and therefore they may need more sunlight exposure to produce the same amount of vitamin D as those with a lighter skin pigmentation[3].
- In the UK, vitamin D synthesis from the sun only occurs from the end of March to September and can be affected by cloud cover, air pollution, extended periods of time inside, sunscreen use, skin colour, and clothing.
- The government advises that everyone should consider taking a vitamin D supplement during the autumn and winter and that, for specific groups of people, they should consider taking a vitamin D supplement throughout the year.
- Some vitamin D can be obtained through dietary intake, although it is not possible to get all the daily requirement of vitamin D from diet alone[1], therefore supplementation is needed.

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The information in this resource was updated on 10/02/2023.

Who is at risk of vitamin D deficiency?

Specific groups of people are at risk of vitamin D deficiency, and NICE recommends that these groups take additional supplementation of vitamin D throughout the year. Table 1 outlines specific groups of people who are at risk and the recommended dose of vitamin D they should take each day:

Table 1: Recommended amount of vitamin D supplement by age group[1]

Population group	Amount of vitamin D supplementation per day
Children and Infants	
Infants from birth to 12-months of age who are exclusively breastfed or chestfed	8.5-10 micrograms
Infants under 12-months of age receiving less than 500mls of infant formula within 24 hours	8.5-10 micrograms
Preterm babies require vitamin supplements from birth irrespective of feeding method	This will be part of the discharge planning on the neonatal unit, communication with the unit is recommended to understand the specific needs of the baby and their family when discharged home.
Children aged 1-4-years	10 micrograms
5 years and above	
People who are seldom outdoors or are confined indoors, such as frail elderly or those in care settings	10 micrograms
People with dark skin such as people from African, African-Caribbean or South Asian origin	10 micrograms
People who wear clothing that covers most of their skin throughout the year	10 micrograms
Pregnant or birthing people	10 micrograms
Those who are breast/chestfeeding	10 micrograms
NB: Dosage of vitamin D can be written in International Units (IU) or micrograms. 1 microgram of vitamin D is equivalent to 40 IU of vitamin D. Therefore 10 micrograms of vitamin D are equivalent to 400 IU of vitamin D.	

How much time outside is needed to get enough vitamin D?

Currently, there are no specific recommendations regarding the length of sun exposure required to gain adequate vitamin D, the supplemental guidance presumes 'minimal sunlight exposure'[5].

It is recommended that sun safety is considered and health visitors are advised to continue with current sun safety advice[6]:

- Spend time in the shade between 11:00 and 15:00
- Make sure you never burn
- Cover up with suitable clothing and sunglasses
- Take extra care with babies and children - for more information, visit: https://bit.ly/3BWpHtm
- Use at least factor 30 sunscreen for adults and factor 50 for children

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What are the dietary sources of vitamin D?

While it is not possible to get the recommended amount of vitamin D through diet alone, food sources of vitamin D are detailed in Table 2.

Table 2: Dietary sources of vitamin D

Food	Special considerations for food type
Eggs	
Oily fish - salmon, mackerel, herring and sardines and tuna	It is recommended that oily fish is limited to 2 portions a week for girls and four portions a week for boys. It is also recommended to be limited to two portions a week when introducing solid foods, and during pregnancy[6].
Red meat	
Internal animal fat, liver and kidneys	
Vitamin D-enriched mushrooms	
Foods that have been fortified with vitamin D: • butter • fat spreads (polyunsaturated) • fortified breakfast cereals • infant formulas have mandatory fortification with vitamin D through EU law, 1-2.5 micrograms per 100kcal and 1-3 micrograms per 100kcal in follow-on milks	
It is recommended that food labels are checked for vitamin D levels	

What happens if you have too little vitamin D?

Too little vitamin D in babies and children can cause rickets, a condition that causes bone deformities. In the UK, cases of rickets have been found in babies and children who are not exposed to sunlight or have dark skin, or have a limited diet[1]. In the UK, cases of rickets have been increasing, however, the number of rickets cases is still relatively small[6]. The signs and symptoms[5] of rickets are:

- Pain causing children difficulty in walking or becoming tired easily when walking or have an unusual gait
- Skeletal deformities which appear as thickening of the joints, bowed legs, soft skull bones and, rarely, a bending of the spine
- Oral health problems such as weak tooth enamel, delay in teeth coming through and increased risk of cavities[7]
- Poor growth and development
- In severe cases, a baby or child's bones may become fragile, with a child being more prone to fractures
- Some babies and children may also have hypocalcaemia, if this is the case their ricket symptoms can worsen, and can also cause muscle cramps, twitching, tingling in the hands and feet, and seizures.

Adults with low vitamin D status may develop osteomalacia, the symptoms for this are similar to rickets[5].

What happens if you have too much vitamin D?

Too much vitamin D can lead to hypercalcaemia[5] (high levels of calcium in the blood), which could weaken bones and damage the heart or kidneys.

If you are concerned that a child may be at risk of vitamin D deficiency or hypercalcemia, a referral to their GP is recommended.

Is there any link between vitamin D and COVID-19 prevention?

SACN and NICE conducted a rapid review of the evidence base to consider the use of vitamin D supplements to prevent or treat COVID-19[9]. At time of publication the findings were that '*there was little evidence for using vitamin D supplements to prevent or treat COVID-19*' and further research was suggested. It concluded that vitamin D supplements remained important for bone and muscle health.

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Good Practice Points for Health Visitors

NICE[10] makes several recommendations that will form the basis of Good Practice Points for health visitors:

- Embed conversations about vitamin D into all universal contacts, alongside discussions about eating or diet, to increase awareness about the importance of vitamin D in health.
- Discuss vitamin D supplements where relevant for breast/chestfeeding babies and the parent feeding them. Also discuss vitamin D supplements with parents once a baby's intake from infant formula is below 500mls per day.
- Highlight that no one can get enough vitamin D from diet alone.
- Promote the benefits to our health and wellbeing of time outside and its importance for child development.
- Discuss Healthy Start or Best Start Foods at all initial contacts with families. This takes away the stigma that families can associate with accessing them, it can also help to identify families who may be struggling with their health or finances.
- Explain to families how and where to obtain vitamins from and support them to problem-solve any barriers to the collection, including the changes to the Healthy Start scheme in 2022. For more information about the new scheme, visit: https://bit.ly/3g0LYvp.
- Revisit conversations about vitamins regularly because families' circumstances can change, and they may need reminding about vitamins and healthy nutrition.
- Promote within your community. A collaborative approach to addressing the importance of vitamin supplementation can be very powerful. You can initiate working groups with key stakeholders to create a local strategy to improve the uptake of vitamin D.

Healthy Start and Best Start Foods

Some families in the UK are entitled to free vitamins and vouchers which contribute towards infant formula, cow's milk, and fruit and vegetables (these can be fresh, dried, tinned or frozen).

In England, Wales and Northern Ireland, this is the Healthy Start Scheme. To qualify for the scheme, families need to be in receipt of specific benefits. At this current time, the scheme is also available for those who have no recourse to public funds because of their immigration status.

The application process changed in the Autumn of 2021 to an online process with a pre-paid card. To find out more, visit Healthy Start here: https://bit.ly/3ILFI72

In Scotland, the scheme is called Best Start Grant and Best Start Foods, and is also open to people receiving certain benefits. To find out more, visit: https://bit.ly/3gdcYI8

Both schemes are available to those who are pregnant. Healthy Start is available until the child turns 4-years-old and Best Start Food is available until the child turns 3-years-old.

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