

Vitamin D and Breastfeeding

The information provided is taken from various reference sources. It is provided as a guideline. No responsibility can be taken by the author or the Breastfeeding Network for the way in which the information is used. Clinical decisions remain the responsibility of medical and breastfeeding practitioners. The data presented here is intended to provide some immediate information but cannot replace input from professionals.

In 2012 the Chief Medical Officer in the UK made recommendations about supplementing all pregnant and breastfeeding mothers and children with Vitamin D. There seems to remain a lot of confusion as to who should take these supplements, why this is necessary and how to obtain them. The recommendations were updated in July 2016 in line with the SACN recommendations on vitamin D and health.

- **Breastfed babies from birth to one year of age should be given a daily supplement containing 8.5 to 10mcg of vitamin D as a precaution (SACN 2016)**
- **Breastfeeding Mothers should also take a daily Vitamin D supplement of 10 µg per day**
- **Vitamin D deficiency in the UK is a consequence of our weather and the latitude at which we live.**
- **Breastmilk is perfect for babies**
- **Vitamin D drops should be given to babies on a teaspoon as droppers are hard to sterilise**
- **Healthy Start Vitamins remain an excellent, economic source of vitamin D and are provided free of charge in many areas. The daily dose of 5 drops contains 10µg**
www.healthystart.nhs.uk/for-health-professionals/vitamins/

Please refer to the UNICEF baby friendly statement Nov 2016
www.unicef.org.uk/babyfriendly/baby-friendly-resources/guidance-for-health-professionals/statements/

The risks for babies

- Babies born to mothers with low vitamin D status are at risk of developing rickets. Taking into account that MOST of us are deficient between October and April at best and MANY of us will have low levels throughout the year, the recommendation that ALL pregnant women should take a supplement of 10 µg Vitamin D per day throughout pregnancy is sensible and cost effective (Prevention of rickets and vitamin D deficiency in Birmingham: the case for universal supplementation).
- Babies born to mothers who have not taken a vitamin D supplement in pregnancy are likely to be born with low vitamin D status. Levels of vitamin D in that mother are also likely to be low and even if she begins to take a supplement herself at that time, cannot redress the baby's deficiency by breastfeeding. So the recommendation is that the baby should receive its own oral vitamin D drops containing 7-8.5µg per day from 4 weeks of birth until the age of 5 years. Waiting until the baby is 6 months may be too late to prevent development of symptoms. Mothers may also develop symptoms of deficiency themselves.

To talk to a mum who knows about breastfeeding call the National Breastfeeding Helpline 0300 100 0212

Calls to 0300 numbers cost no more than calls to UK numbers starting 01 and 02 and will be part of any inclusive minutes that apply to your provider and call package.

Although it was thought that levels of vitamin D stores laid down in pregnancy by a mother who has taken vitamin D supplements in pregnancy would be sufficient for a few months, **new recommendations (July 2016) are that breastfed babies from birth to one year of age should be given a daily supplement containing 8.5 to 10mcg of vitamin D, to make sure they get enough** (www.nhs.uk/Conditions/vitamins-minerals/Pages/Vitamin-D.aspx). In addition breastfeeding mothers should take a daily Vitamin D supplement of 10 µg per day – in fact as more and more conditions are linked with lack of vitamin D most of us would benefit from taking it regularly.

Implications of low levels of vitamin D

- In children; rickets, delayed tooth eruption, increased risk of infection, decreased bone mass, hypocalcaemic seizures, delay in walking.
- In adults; osteomalacia, muscle weakness, bone pain plus possible association in many other conditions.

Vitamin D supplements for breastfeeding mothers

Mothers who are diagnosed with vitamin D deficiency may be prescribed very high dose supplements. Papers looking at these doses are scarce. Hollis and Wagner (2004) concluded that “Maternal vitamin D intakes of 4000 IU/d appear to be safe and to provide sufficient vitamin D to ensure adequate nutritional vitamin D status for both mothers and nursing infants. Hollis et al 2015 that “Maternal vitamin D supplementation with 6400 IU/day safely supplies breast milk with adequate vitamin D to satisfy her nursing infant’s requirement and offers an alternate strategy to direct infant supplementation.

For information on high dose vitamin D prescribed for breastfeeding women see <https://breastfeeding-and-medication.co.uk/fact-sheet/high-dose-vitamin-d-supplements-and-breastfeeding>

Dietary Sources of Vitamin D

- Oily fish including trout, salmon, mackerel, herring, sardines, anchovies, pilchards, and fresh tuna
- Cod liver oil and other fish oils
- Egg yolk; 0.5 micrograms (20 IU) per yolk
- Mushrooms
- Supplemented breakfast cereals typically contain between 2 and 8 micrograms (80-320 IU) per 100 g
- Margarine

The average dietary vitamin D intake of young women in the UK approximates 3 micrograms per day and fewer than 1% consume more than the 10 micrograms (Williams 2007). The National Diet and Nutrition Survey of British adults suggest that if such a threshold were investigated in the UK population data, some 80–90% would be deficient (Henderson 2003).

Sunlight and Vitamin D

The main source is Ultraviolet B sunlight exposure; more than 90% of mankind’s vitamin D supply is derived from exposure UVB in sunlight. Deficiency of vitamin D in the UK is predominantly caused by poor weather, increasing use of high factor sunscreen (more than factor 8), and latitude: those born north of approximately Birmingham (40°N) are unlikely to be able to reach sufficient exposure.

Sunlight exposure needed is 2 hours per day (if only the face exposed), 20-30 minutes a day if the face, arms and neck are exposed without sunscreen. Sun protection factor in excess of 8 prevents absorption of the UVB sufficient to make vitamin D. Need increases for those with darker skins. In all cases it is important to avoid sunburn, particularly in babies.

Where to get vitamin D supplements

Those who are eligible for Healthy Start vouchers receive free vitamin tablets and drops containing the correct dose of vitamin D for mothers and children.

Those not eligible for Healthy Start may purchase vitamin supplements from pharmacies and Health Food Stores – please check that they contain 10µg for adults and at least 7-8.5µg for children (usually 10 µg).

Is formula better if breastfeeding mothers need to take tablets?

Vitamin D deficiency in the UK is a consequence of our weather and the latitude at which we live. The addition of vitamin D to formula milk does not make it better than breastmilk – it does not contain all the immunological properties that make breastmilk specific to cater for each baby's needs.

Specific Groups at Increased Risk

Some mother and infant groups have been shown to be at increased risk, including:

- Babies of mothers with darker skin types
- Pregnant and breastfeeding women.
- Babies born in the winter months and not exposed to the sun
- Babies and mothers who wear concealing clothing, preventing skin exposure to sunlight
- Babies and mothers who spend a lot of time indoors or use sun creams, reducing exposure to sunlight
- Babies of obese mothers (BMI >30)
- Babies of mothers with gestational diabetes.

References

- Ahmed SF et al. Recent trends and clinical features of childhood vitamin D deficiency presenting to a children's hospital in Glasgow. Arch Dis Child 2011;96:694-6
<http://adc.bmj.com/content/96/7/694.full.pdf+html>
- American Academy of Paediatrics Prevention of Rickets and Vitamin D deficiency in infants, children and adolescents 2008
<http://pediatrics.aappublications.org/content/122/5/1142.full.pdf+html>
- CMO Vitamin D supplements for at risk groups.
www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_132508.pdf
- Department of Health. Vitamin D an essential nutrient for all, but who is at risk of vitamin D deficiency?
http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_111302.pdf
- Henderson L, Irving K, Gregory J, et al. The National Diet and Nutrition Survey: adults aged 19 to 64 years. Vol 3. Vitamin and mineral intake and urinary analytes . London: Stationery Office, 2003: 1–160.
- Hollis BW, Wagner CL. Vitamin D requirements during lactation: high-dose maternal supplementation as therapy to prevent hypovitaminosis D for both the mother and the nursing infant. Am J Clin Nutr. 2004;80(Suppl 6):1752S–1758S
- Hollis BW, Wagner CL, Howard CR, Ebeling M, Shary JR, Smith PG, Taylor SN, Morella K, Lawrence RA, Hulsey TC, Maternal Versus Infant Vitamin D Supplementation During Lactation: A Randomized Controlled Trial. Pediatrics 2015;136 (4):
- Jones W. Breastfeeding and Medication Routledge 2018

- Michie C. Managing vitamin D deficiency in children. London Journal of primary care July 2010 www.londonjournalofprimarycare.org.uk/articles/3186685.pdf
- NHS Choices. www.nhs.uk/news/2012/01January/Pages/vitamin-d-medical-advice-and-supplements.aspx
- Prevention of rickets and vitamin D deficiency in Birmingham: the case for universal supplementation. www.infantfeedingwm.org.uk/documents/Website_VitD.pdf
- SACN Update on Vitamin D 2007. www.sacn.gov.uk/pdfs/sacn_position_vitamin_d_2007_05_07.pdf
- SACN Vitamin D and Health 2016 www.gov.uk/government/uploads/system/uploads/attachment_data/file/537616/SACN_Vitamin_D_and_Health_report.pdf

