TEN STEP TUESDAY

Vitamin D & the Breastfed Infant

Adapted from info from Breastfeeding Answers, 2nd Ed. by Nancy Mohrbacher, IBCLC, FILCA

It's Ten Step Tuesday!

Vitamin D supplements are recommended for all exclusively breastfed babies.

Did you know? Vitamin D is not actually a vitamin; it's a hormone precursor made by the body when the skin is exposed to the ultraviolet rays of the sun. Only about 10% to 20% of our vitamin D intake is meant to come from the food we eat (Papadimitriou, 2017; Wagner, Taylor, & Hollis, 2008). When early humans spent their daylight hours working outdoors with their skin exposed, this guaranteed healthy vitamin D blood levels. With the lifestyle changes that occurred as people moved to Northern climates and warmer clothing, by the 17th century vitamin D deficiency and rickets became a major health problem. In the 1800s, scientists discovered that lack of sunlight exposure was the cause of rickets and began to recommend fish-liver oils to prevent and treat it. In the 1920s, vitamin D was formally identified, and in the 1930s, milk fortified with vitamin D began to be sold. For a time, rickets was virtually eliminated. However over the past decades as people began spending more time indoors and using sunscreen when outside, the incidence of rickets increased. Also, among some cultures, religious beliefs or climate required women to cover themselves completely when outside the home. In recent years, researchers turned their focus to vitamin D intake recommendations, incidence of vitamin D deficiency, and the effects of vitamin D levels on overall health.

Scientists question current recommended daily allowance of vitamin D.

When analyzing current recommendations for vitamin D intake, scientists found a less-than-scientific basis for this recommendation: fish-liver oils supplements just happened to contain 400 IU of vitamin D, so that's what had been recommended for everyone no matter their age, size or other risk factors (Wagner & Hollis, 2004). At 400 IU per day, blood vitamin D levels often decrease, especially in the winter months. Research done internationally found widespread vitamin D deficiency among pregnant women:

- 52% of Black and 23% of white women in the southern U.S. (Burke et al., 2019)
- 63% in Switzerland (Cabaset et al., 2019)
- 84% in northeastern India (Sharma, Nath & Mohammad, 2019)
- 28% in Australia and New Zealand (R.L. Wilson, et al., 2019)
- 60% in Iran (Tabrizi et al., 2018).

For more information contact
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When babies are born to vitamin D deficient mothers, they are at increased risk of vitamin D deficiency, which is associated with a greater incidence of cardiovascular problems, Type 1 and 2 diabetes, many types of cancer, and autoimmune diseases, such as lupus and multiple sclerosis (Papadimitriou, 2017); Wagner et al, 2008).

Risk factors for Vitamin D Deficiency

Parents and babies with dark skin are at greater risk of vitamin D deficiency because darker skin pigmentation acts as a natural filter of ultraviolet light, so they require more sunlight exposure for their body to make vitamin D. Other factors for vitamin D deficiency include spending little time outdoors, keeping the skin covered with clothing or sunscreen while outside, and living in areas with heavy pollution or little sunlight for parts of the year. In temperate climates with cold winters, vitamin D levels among people with lighter skin are higher during the summer and lower during the winter. The recommendation to avoid exposure to sunlight to prevent sun damage and skin cancer also contributes to greater risk of vitamin D deficiency (AAP 1999).

Options for Vitamin D Supplementation

- One option is to supplement the nursing baby with vitamin D Drops. This is a simple way to provide babies what is needed, however there are still risks to the nursing parent's vitamin D status. Vitamin D deficiency after birth was associated with depression, as well as same health problems associated with vitamin D deficiency and the baby mentioned above.

- An alternative to supplementing the breastfeeding baby with vitamin D is supplementing the mother. Two U.S. pilot studies examine the effects of 4,000 IU and 6,400 IU per day and found that taking 6,400 IU per day for 90 days was enough to bring both our mother's blood and the milk vitamin D up to recommended levels (Hollis et al. 2004, 2006). Taking 6400 IU each day should increase a mother's vitamin D levels enough to eliminate the need to supplement her breastfeeding baby. https://pediatrics.aappublications.org/content/pediatrics/early/2015/09/22/peds.2015-1669.full.pdf

- Another recent study showed that high level injections 60,000 IU injections daily for 10 consecutive days beginning 1 to 2 days after birth, led to vitamin D sufficiency for both through the babies' first 6 months (Naik, Faridi, Batra, & Madhu, 2017). Research on this topic is quickly evolving!

In summary, vitamin D is important, and human breast milk is a very poor source of vitamin D, usually containing less than 50 IU per quart. This is why the AAP recommends all breastfed infants receive 400 IU per day vitamin D by supplement drops (2008). This is not a defect in breast milk, but a reflection of how common vitamin D deficiency is in the population at large. Exclusively breastfeeding parents should consider the various options for supplementation considering their risk factors, talk with their physician(s) and come up with a plan to ensure adequate vitamin D levels for themselves and their breastfed infants.

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