

Vitamin D Recommendations

for Perinatal Women & Healthy Term Infants (Birth - 1 year)

Practice Support Tool for Health Professionals in British Columbia

About This Practice Support Tool

This is a quick reference tool. Its purpose is to share with health professionals information related to vitamin D in order to provide informed recommendations to clients/ patients to ensure adequate vitamin D intakes for perinatal women and healthy, term infants (birth – 12 months).

This tool is based on the scientific literature reviewed in *Vitamin D Recommendations for Perinatal Women & Healthy Term Infants (Birth - 1 year): Background Paper for Health Professionals in British Columbia* available at <https://www2.gov.bc.ca/gov/content/health/managing-your-health/healthy-eating>. This tool also includes additional practice information related to vitamin D supplements available in BC, as well as, programs assisting with the purchase of vitamin D supplements.

Perinatal Women

Key Practice Point: Most perinatal women require a vitamin D supplement of 400 IU (10 µg) – 600 IU (15 µg).

Key Practice Point: For perinatal women at higher risk of insufficiency/ deficiency, health professionals may recommend vitamin D supplementation to reach intake levels above 600 IU (15 µg) as a clinical decision.

Rationale/Details:

- To promote the health of both women and their infants, it is recommended that all pregnant women achieve a minimum of 600 IU (15 µg) per day of vitamin D from a combination of supplements and dietary sources. Regardless of lactation status, it is recommended that postpartum women achieve a minimum of 600 IU (15 µg) per day of vitamin D from a combination of supplements and dietary sources.
- Vitamin D production from sun exposure is limited in Canada.
- Vitamin D is found in few dietary sources.
- The Recommended Dietary Allowance for women 19 – 50 years (including pregnancy and lactation) is 600 IU (15 µg) per day.
- The Tolerable Upper Intake Level for women 19 – 50 years (including pregnancy and lactation) is 4000 IU (100 µg) per day.
- Risk factors for maternal vitamin D insufficiency/ deficiency with **strong evidence** include: Latitude, season, darker skin tone, minimal skin exposure due to clothing choices, and not taking supplemental vitamin D.
- Risk factors for maternal vitamin D insufficiency/ deficiency with **weak or mixed evidence** include: Higher BMI, smoking during pregnancy, lower socioeconomic status, younger maternal age, and lower physical activity.
- There is a fee for serum vitamin D testing unless ordered by a specialist. For more information, see the Vitamin D Testing Protocol at BCGuidelines.ca (in the Endocrinology section).

Healthy, Term Infants (Birth – 1 Year) Receiving Breast Milk

Key Practice Point: For healthy, term infants who are exclusively or partially breastfed, recommend a daily liquid vitamin D supplement of 400 IU (10 µg).

Key Practice Point: Health professionals may recommend higher doses of vitamin D as a clinical decision for individual infants to address known or suspected insufficiency/ deficiency.

Key Practice Point: A key communication point with caregivers is that breastfeeding is the normal and unequalled method of infant feeding. Breastfeeding is the healthy first choice for both mothers and infants. The need for vitamin D supplementation is not due to a deficiency with breast milk. The need is due to limited sun exposure of the infant and mother and limited dietary sources of vitamin D.

Key Practice Point: If an infant's feeding method has changed since last assessment, re-assess vitamin D supplementation.

Rationale/Details:

- These practice points include infants who are fed a combination of breast milk and commercial infant formula, as well as older infants who are consuming complementary foods.
- Start a liquid vitamin D supplement in the first few days after birth as breastfeeding is established.
- The Tolerable Upper Intake Level for infants 0 – 6 months is 1000 IU (25 µg) per day.
- The Tolerable Upper Intake Level for infants 7 - 12 months is 1500 IU (38 µg) per day.
- The risk factor for infants to have insufficient/ deficient vitamin D status is being born to a mother with vitamin D insufficiency/ deficiency.

Supplementing Lactating Mothers Instead of Breastfed Infants

Key Practice Point: Supplementing the mother instead of the infant is not recommended until the safety of the required high doses is known.

Rationale/Details:

- For infants exclusively receiving breast milk, mothers may be interested in supplementing themselves with vitamin D instead of infants.
- Studies indicate that maternal doses of vitamin D much higher than the Tolerable Upper Intake Level for mothers are required to raise breast milk vitamin D levels in order for infants to receive the recommended dose via breast milk.
- The Tolerable Upper Intake Level for women 19 – 50 years (including pregnancy and lactation) is 4000 IU (100 µg) per day.
- For more information on hypervitaminosis D, see the Vitamin D Testing Protocol at BCGuidelines.ca (in the Endocrinology section).

Healthy, Term Infants (Birth – 1 Year) Receiving Commercial Infant Formula

Key Practice Point: Healthy, term infants fed commercial infant formula only, and who were born to mothers with adequate vitamin D status during pregnancy, do not need a liquid vitamin D supplement.

Key Practice Point: For healthy, term infants fed commercial infant formula only, if the mother's vitamin D status during pregnancy was suspected to be insufficient/ deficient, consider a daily liquid vitamin D supplement of 400 IU (10 µg) until the infant is consuming 800 - 1000 mL of commercial infant formula daily.

Key Practice Point: Give healthy, term infants who are fed a combination of commercial infant formula and breast milk a liquid vitamin D supplement of 400 IU (10 µg) every day.

Key Practice Point: Health professionals may recommend higher doses of vitamin D for individual infants to address known or suspected insufficiency/ deficiency as a clinical decision.

Key Practice Point: If an infant's feeding method has changed since last assessment, re-assess vitamin D supplementation.

Rationale/Details:

- These practice points include older infants who are consuming complementary foods.
- The Tolerable Upper Intake Level for infants 0 – 6 months is 1000 IU (25 µg) per day.
- The Tolerable Upper Intake Level for infants 7 - 12 months is 1500 IU (38 µg) per day.
- In Canada, it is mandatory for commercial infant formula designed for term infants to be fortified with vitamin D. Considering the fortification level, infants consuming approximately 800 - 1000 mL per day of commercial infant formula designed for term infants are meeting the recommendation of 400 IU (10 µg) of vitamin D per day.

Important Points About Vitamin D Supplements

D₂ and D₃:

Vitamin D supplements are available as vitamin D₂ and vitamin D₃. The common supplements available in British Columbia contain vitamin D₃. Vegan supplements sold in Canada are made from vitamin D₂. There is mixed evidence regarding whether vitamin D₃ is more effective than vitamin D₂. Vitamin D supplements are available in several formulations. They may provide vitamin D alone or in conjunction with other vitamins.

Adults:

Adult tablet vitamin D supplements usually provide 400 IU (10 µg) or 1000 IU (25 µg) per dosage. Liquid vitamin D supplements formulated for adults usually provide 1000 IU (25 µg) per dosage. Prenatal multivitamins currently on the market commonly provide 200 IU (5 µg) - 800 IU (20 µg) per dosage.

Infants:

Supplements for infants provide 400 IU (10 µg) per dosage. To prevent vitamin D toxicity, check the label to ensure that a supplement provided to an infant is labeled as an infant product. Check that caregivers are providing the correct dosage volume for infants for the formulation (e.g. 1 drop, 0.25 mL, or 1 mL).

Three common formulations are:

- 400 IU (10 µg) in a single drop (0.028 mL).
- 400 IU (10 µg) in 0.25 mL.
- 400 IU (10 µg) in 1 mL.

Note that the market is always evolving so caregivers may use formulations different from the three described here.

Accidental Double Dose & Hypervitaminosis D:

For infants, an isolated double dose of vitamin D, i.e. 800 IU (20 µg), is not a cause for concern. The Tolerable Upper Intake Level (UL) for infants 0 – 6 months is 1000 IU (25 µg) per day and the UL for infants 7 – 12 months is 1500 IU (38 µg) per day. However, cases of vitamin D toxicity (hypervitaminosis D) have been reported when caregivers provide the incorrect product or incorrect dosage over a period of time. Hypervitaminosis D causes hypercalcemia. Medical attention is required if hypervitaminosis D is suspected. For more information on hypervitaminosis D, see the Vitamin D Testing Protocol at BCGuidelines.ca (in the Endocrinology section).

Missed Dose:

If caregivers forget to give an infant vitamin D on occasion, advise caregivers to provide their usual daily dose when they remember. There is no need to give a “make-up” double dose. If caregivers frequently forget to provide an infant with vitamin D, discuss a strategy with caregivers to help them be successful with daily supplementation.

Programs Assisting with Purchase of Vitamin D Supplements:

Two programs in BC can assist eligible perinatal women and caregivers with the purchase of supplements:

- The First Nations Health Authority Health Benefits Program covers prenatal multivitamins for eligible pregnant and breastfeeding women and 400 IU (10 µg) liquid vitamin D supplements for eligible infants. See fnha.ca/benefits for details.
- The [BC Association of Pregnancy Outreach Programs](#) currently provides for eligible clients, 400 IU (10 µg) for pregnant women based on prenatal intakes and 400 IU (10 µg) liquid vitamin D supplements for breastfed infants.