Vitamin D Supplementation Guidelines for Infants, Children, and Adults in the Northwest Territories

Purpose

This guidance provides updated recommendations for vitamin D supplementation in northern Canada (above 55°N latitude), specifically for the Northwest Territories (NWT). The aim is to prevent vitamin D deficiency and support bone, immune, and neuromuscular health.

Recommended Daily Intake and Upper Limits

Age Group	Aim For	Stay Below
Infants 0–6 months (exclusively breastfed)	800 IU/day from supplement	1000 IU/day
Infants 0–6 months (formula fed)	800 IU/day (400 IU supplement + remainder from formula)	1000 IU/day
Infants 6–12 months	800 IU/day (400 IU supplement + remainder from fortified food/formula)	1500 IU/day
Children 1–3 years	600 IU/day (400 IU supplement + vitamin D-rich foods)	2500 IU/day
Children 4–8 years	600 IU/day (400 IU supplement and/or vitamin D-rich foods)	3000 IU/day
Children & Adults 9–70 years (including pregnant & breastfeeding individuals)	600 IU/day (400 IU supplement and/or vitamin D-rich foods)	4000 IU/day
Adults over 70 years	800 IU/day from supplement	4000 IU/day

Clinical Notes

- All infants in NWT require 800 IU/day due to limited sunlight exposure.
  - Exclusively breastfed infants (0–6 months): 800 IU/day from supplement.
  - Formula-fed or partially breastfed infants: 400 IU/day from supplement, remainder from fortified food/formula.
- Vitamin D is essential for calcium absorption, bone mineralization, immune function, muscle strength, and neurological health.
- Risk factors for deficiency include:
  - Limited outdoor sunlight exposure (long winters, clothing coverage, sunscreen use).
  - Food insecurity.
  - Darker skin pigmentation.

Examples of Dietary Sources of Vitamin D

- **Fortified Foods**: Cow's milk, goat's milk, fortified plant-based beverages, margarine, fortified yogurt.
- **Natural Sources**: Egg yolks, fatty fish (trout, salmon, sardines, tuna, char).
- **Sunlight Exposure**: Vitamin D is synthesized when skin is exposed to UVB rays.

Safety Considerations

- Exceeding upper limits may cause hypercalcemia and kidney damage.
- Food sources are safe; toxicity risk arises only from excessive supplement use over time.
- Supplement formulations available:
  - Children/adults: 400 IU and 1000 IU tablets/capsules.
  - Infants: 400 IU per drop (liquid formulation).

References

1. Canadian Pediatric Society (CPS). *Preventing symptomatic vitamin D deficiency and rickets among Indigenous infants and children in Canada*. Position Statement, 2022. https://cps.ca/en/documents/position/vitamin-d-deficiency-and-rickets-among-indigenous-infants-and-children
2. Government of Canada, Health Canada. *Dietary reference intakes tables: Reference values for vitamins*, 2025. https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/dietary-reference-intakes/tables/reference-values-vitamins.html