

Vitamin D

INGREDIENT GUIDE

Sources of Vitamin D

- Sunlight
- Fish
- Whole Grains
- Cereal
- Cheese
- Butter
- Milk

WHAT IS VITAMIN D?

Vitamin D is a fat-soluble vitamin found in two primary forms: Vitamin D2 (ergocalciferol) and vitamin D3 (cholecalciferol). Our bodies get vitamin D from sunlight exposure and our diet. Although, vitamin D is found in a few foods, including cod liver, oily fish, and eggs. Our skin synthesizes vitamin D when exposed to sunlight. Human milk also contains various degrees of vitamin D. Still, deficiency of this essential vitamin is prevalent in infants, pregnant, and breastfeeding women. The main reasons for vitamin D deficiency in infants are: sun avoidance advised to infants and insufficient vitamin D in human milk1.



VITAMIN D PLAYS A ROLE IN HEALTH OUTCOMES

Vitamin D affects both physiological and molecular mechanisms. It is vital for your baby's bone health, growth, and development.

Vitamin D supports bone synthesis and skeletal development.
Calcitriol (an active form of vitamin D) regulates blood calcium and phosphate, essential minerals for healthy bones. Severe vitamin D deficiency may cause bone demineralization resulting in bone resorption and further rickets²,³.

Vitamin D binds its receptor in immune cells. When our bodies recognize pathogens like viruses and bacteria, immune cells get activated and release chemicals to destroy the pathogens. Vitamin D may regulate the synthesis of these chemicals; thus, it may enhance immunity. Respiratory tract infection risk was reported lower in babies whose mothers took vitamin D supplementation in pregnancy,⁵.

Vitamin D may increase muscle protein synthesis, increasing muscle mass and hand grip strength⁶.

Vitamin D may be beneficial for babies' cognitive functions and motor skills. Research has shown babies given 400IU daily vitamin D supplementations had significantly higher motor skills⁷.

REFERENCES

- National Institutes of Health. Vitamin D -Health Professional Fact Sheet. Accessed June 21, 2022. https://ods.od.nih.gov/ factsheets/VitaminD-HealthProfessional/
- Antonucci R, Locci C, Clemente MG, Chicconi E, Antonucci L. Vitamin D deficiency in childhood: old lessons and current challenges. J Pediatr Endocrinol Metab. 2013;3(13):247-260. doi:10.1515/ JPEM-2017-0391
- Aguiar M, Atapattu N, Bhatia V, et al. Global Consensus Recommendations on Preven-
- tion and Management of Nutritional Rickets. J Clin Endocrinol Metab. 2016;101(2):394-415. doi:10.1210/JC.2015-2175
- Pacheco-González RM, García-Marcos L, Moroles E. Prenatal vitamin D status and respiratory and allergic outcomes in childhood: A meta-analysis of observational studies. Pediatr Allergy Immunol. 2018;29(3):243-253. doi:10.1111/ PAI.12876
- Mailhot G, White JH. Vitamin D and Immunity in Infants and Children. Nutrients
- 2020;12(5). doi:10.3390/NU12051233
- Harvey NC, Moon RJ, Sayer AA, et al. Maternal antenatal vitamin D status and offspring muscle development: findings from the Southampton Women's Survey. J Clin Endocrinol Metab. 2014;99(1):330-337. doi:10.1210/JC.2013-3341
- Wicklow B, Gallo S, Majnemer A, et al. Impact of Vitamin D Supplementation on Gross Motor Development of Healthy Term Infants: A Randomized Dose-Response Trial. Phys Occup Ther Pediatr. 2016;36(3):330-
- 342. doi:10.3109/01942638.2015.1 050150
- Dietary Guidelines for Americans, 2020-2025 and Online Materials | Dietary Guidelines for Americans. Accessed June 21, 2022. https://www.dietaryguidelines. gov/resources/2020-2025-dietary-guidelines-online-materials
- Bresson JL, Burlingame B, Dean T, et al. Dietary reference values for vitamin D. EFSA Journal. 2016;14(10). doi:10.2903/J. EFSA 2016.4547
- Turck D, Bresson JL, Burlingame B, et al. Update of the tolerable upper intake level for vitamin D for infants. EFSA Journal. 2018;16(8). doi:10.2903/J. EFSA.2018.5365
- Commission Delegated Regulation (EU).
 Amending Delegated Regulation (EU)
 2016/127 with regard to vitamin D requirements for infant formula and erucic acid requirements for infant formula and follow-on formula (Text with EEA relevance).

REGULATORY REQUIREMENTS AND EXPERT RECOMMENDATIONS FOR INFANT FORMULA (US) (US) (US) 75 IU of Vîtamîn D per 100 kcal

*US FDA requires that infant formulas with <1 mg of iron per 100kcal must include a statement on the label indicating that additional iron may be needed.¹¹

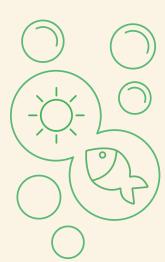
DIETARY RECOMMENDATIONS AND INFANT FORMULA REQUIREMENTS IN THE EU AND THE US

According to the Dietary Guidelines of Americans (US DGA) and The European Food Safety Authority (EFSA), infants need 400IU daily vitamin D from soon after birth to 12 months old⁸,⁹. The European Food Safety Authority (EFSA) also reported maximum safe amounts of daily vitamin D. It is 1000IU until the 6th month and 1500 IU between the 6th and 12th months¹⁰. The regulations in the USA mandate 40 to 100 IU/100 kcal vitamin D fortification in infant formulas.

The European Commission permits up to 100 IU/100 kcal vitamin D fortification in baby formulas¹¹.



bobbie. Med-02/21-TK-v.0



TAKE-AWAY

Human milk alone does not meet an infant's vitamin D needs. Health authorities recommend additional vitamin D from foods, formulas, or supplements for infants.

Bobbie organic infant formula provides 75 IU vitamin D per 100 kcal agreeing with US and EU regulations.







VITAMIN D IN BOBBIE

Bobbie organic infant formula provides 75 IU of Vitamin D per 100 kcal from the cholecalciferol (Vitamin D3) ingredient.