



# Recommendation for Exclusive Breastfeeding: Avoidance of Underfeeding and Overfeeding (October 2024)

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## Preamble

The mission of the Academy of Breastfeeding Medicine (ABM) consists of medical doctors “educating and empowering health professionals to support and manage breastfeeding, lactation and human milk feeding” with the vision that there will be “healthier lives worldwide through excellence in the medical care of breastfeeding and lactation.” As such, position statements help to disseminate the philosophy of the organization with regard to key topics related to breastfeeding and lactation. This position statement is based on the best available evidence and interpretation by the expertise of our members.

The Academy of Breastfeeding Medicine recognizes that not all lactating individuals identify as women. Using gender-inclusive language, however, is not possible in all languages and all countries and for all readers. The position of the Academy of Breastfeeding Medicine (<https://doi.org/10.1089/bfm.2021.29188.abm>) is to interpret clinical protocols and position statements within the framework of inclusivity of all breastfeeding, chestfeeding, and human milk-feeding individuals.

## Abstract

It is the position of the Academy of Breastfeeding Medicine (ABM) to recommend exclusive breastfeeding as the optimal method of feeding for the first 6 months after birth, and with complementary foods for 2 years or as long as the family desires. The ABM also recommends assessment and prevention of underfeeding and overfeeding infants in the context of skilled breastfeeding management.

**Keywords:** exclusive breastfeeding, newborn, human milk, breast milk, supplementation

## Introduction

Human milk feeding provides optimal nutrition for infants and numerous health benefits for both infants and lactating parents.<sup>1</sup> In fact, the health benefits of breastfeeding for infants are so profound that breastfeeding has been found to significantly enhance infant survival across the globe.<sup>2,3</sup> With two out of three infants living in countries experiencing conflict and/or natural disaster, breastfeeding is also an emergency plan, enhancing survival rates in these extreme conditions as well.<sup>4-6</sup>

Exclusive breastfeeding is recommended for the first 6 months after birth.<sup>7</sup> Exclusive breastfeeding, in the vast majority of circumstances, results in healthy infants. There are certain circumstances where either direct breastfeeding or mother’s own milk (MOM) is not sufficient. However, most of the use of commercial milk formula is not medically necessary, exposing the infant to increased risk of disease and overfeeding. In addition, introducing supplementation often interferes with the normal symbiotic relationship required to regulate milk production.

Instead, ensuring access to professional support and management with breastfeeding, especially when there are concerns for lower milk production, and using donor milk as a bridge are options to preserve an exclusively human milk diet.

In this position statement, both underfeeding and overfeeding are defined. Risk factors for underfeeding are reviewed. Overfeeding and medically unnecessary supplementation are common responses to normal parental and infant behaviors and often indicate the need for additional breastfeeding and lactation support, assessment and management. All health care professionals who follow families after birth should have the knowledge and skills to assure that underfeeding in the breastfed infant is identified when present, mostly avoided, and that exclusive human milk feeding is safely supported whenever medically possible, to ensure optimal infant health.

## Exclusive Breastfeeding

Exclusive breastfeeding is defined as the feeding of human milk, preferably directly at the breast, and without additional feeding of other foods or fluids, with the exception of medications, vitamins or minerals.<sup>1,8–10</sup> Exclusive breastfeeding yields optimal health outcomes in both the breastfeeding child as well as the breastfeeding or lactating parent. Direct breastfeeding leads to optimal health outcomes including a longer duration of breastfeeding compared with feeding expressed milk. Exclusive breastfeeding is recommended for the first 6 months after birth. Following that period of time, breastfeeding should continue with the addition of complementary foods for at least 2 years and beyond as long as mutually desired.<sup>11,12</sup> Supplementation with complementary foods or other substances before 6 months for allergy prevention or to improve iron status is generally not warranted.<sup>1</sup>

## The Role of Supplementation

Most healthy term infants, even during the early days after birth, are well-nourished with exclusive breastfeeding, and do not require supplementation.<sup>13</sup> Nevertheless, there are conditions that require supplementation due to suboptimal intake or underfeeding. It is important that all newborns are monitored closely through the establishment of breastfeeding, which usually occurs between 2 and 4 weeks of age. If underfeeding is identified, there should first be an evaluation to determine milk production, as sometimes milk production is adequate but the milk is not being effectively transferred by the baby or removed by a pump. If supplementation is recommended, we recommend the following in order of preference: expressed MOM, donor human milk, commercial milk formula. The volume of supplementation should match the approximate volume required by the infant, and care should be taken to avoid overfeeding. Over supplementation may be avoided by responding to feeding cues, use of responsive feeding techniques, and calculating the estimated volume needed by taking into account the day of age, gestational age, and mode of delivery.<sup>14</sup> In all cases of supplementation, milk production and removal should be assessed, optimized, and supported with the goal of returning to an exclusively human milk diet.

## Avoidance of Underfeeding

The ABM acknowledges the vulnerability of exclusive breastfeeding during the early days after birth. Without supportive birth practices, including implementation of the Ten Steps to Successful Breastfeeding,<sup>15</sup> and careful assessment and management of the breastfeeding dyad, infants may be at risk for suboptimal intake. To avoid suboptimal intake or underfeeding, all infants should be monitored for feeding patterns, voiding and stooling, and changes in weight. In addition, all mother–infant dyads

should be assisted and supported to initiate and continue breastfeeding, which includes assessment of latch, position, hold, and comfort using validated resources.<sup>16</sup> Early use of breast pumps for expression may indicate a parental concern for milk production or infant intake, or difficulty with latch. Concerns about neonatal weight loss should be identified early and breastfeeding problems should be addressed while the need for supplementation is considered. Further, the ABM recommends close surveillance of mothers or lactating parents with risk factors for low milk production and of infants who are most vulnerable to suboptimal intake or growth difficulties. Conditions that can lead to low milk production and/or suboptimal intake may include: the maternal risk factors of previous breast surgery, infertility, metabolic disease (insulin resistance, PCOS, hypothyroidism, diabetes, hypertension), advanced maternal age, and the infant risk factors of late preterm or early term delivery and ankyloglossia (Supplementary Table S1).<sup>14,17</sup> Surveillance in high-risk cases should include evaluation of nipple pain and poor milk transfer, along with infant growth. There are multiple potential reasons for suboptimal intake and poor growth in the exclusively breastfed infant. Health care professionals caring for mothers or lactating parents and infants after birth need to be skilled in the assessment, via direct observation, and management of breastfeeding and/or have the ability to refer to a professional expert in breastfeeding support, such as, from a medical doctor or Internationally Board-Certified Lactation Consultant. Warning signs of sub-optimal intake in the first days after birth and every 24–48 hours until breastfeeding is well established must be identified and addressed.

## Avoidance of Overfeeding

In contrast to underfeeding, a more common occurrence is unnecessary supplementation that leads to overfeeding.<sup>3,18–20</sup> Supplementation is often a sign of lactation difficulty, such as poor latching that results in pain or poor milk transfer that can be resolved with breastfeeding support and skilled management. When birthing practices are supportive, and optimal support of breastfeeding is implemented, there is usually no need for supplementation. With every feeding cue, the infant is offered the breast, which maximizes intake and provides a signal to program milk supply to meet the demand of the infant. The use of supplementation in the well-nourished exclusively breastfeeding newborn disrupts the elegant, physiological supply and demand system. Many infants are overfed by supplementing with commercial milk formula. Unnecessary supplementation interferes with milk production and normal feeding patterns, and thereby carries a great risk of premature weaning. It is well established that feeding commercial milk formula without a medical indication is the most common reason parents fail to meet their own breastfeeding goals.<sup>21–24</sup>

## Maximize Human Milk Feeding and Support

The recommendation for exclusive breastfeeding is based on evidence that the profound benefits of human milk feeding are dose-dependent. Exclusive breastfeeding provides more health benefits than partial breast milk feeding or premature weaning. When it is not possible to provide adequate milk for exclusive breast milk feeding or if exclusive breastfeeding is not desired by a family, families should continue to be supported to provide human milk as they are able and desire. Limited prenatal education, socioeconomic challenges, and cultural norms impact breastfeeding intentions and practice. Lactation supporters must be mindful to prioritize each family's autonomy in the context of their lived experiences, capacity, and access to support. Supporting families who are dual feeding can increase the proportion of infants receiving any breast milk, and this improves the health of those families.

## The Role of Hospital Practice and Commercial Milk Formula Marketing

The ABM advocates for birthing and maternity practices that support exclusive breastfeeding, and upholds the positions and recommendations of the World Health Organization (WHO).<sup>7,8,15</sup> It is also essential that all new families have access to professional breastfeeding and lactation support and care. Furthermore, the ABM encourages countries, health care institutions, and medical societies to implement the WHO Code of Marketing of Breastmilk Substitutes.<sup>25</sup> Implementation of the Code frees patients and their health care professionals from the pervasive and predatory marketing practices that undermine the ability to breastfeed and creates system-level supports that avoid unnecessary supplementation.<sup>3,25-27</sup>

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## References

1. Meek JY, Noble L, Section on Breastfeeding. Policy statement: Breastfeeding and the use of human milk. *Pediatrics* 2022;150(1):e2022057988; doi: [10.1542/peds.2022-057988](https://doi.org/10.1542/peds.2022-057988)
2. Ware JL, Li R, Chen A, et al. Associations between breastfeeding and post-perinatal infant deaths in the U.S. *Am J Prev Med* 2023;65(5):763–774; doi: [10.1016/j.amepre.2023.05.015](https://doi.org/10.1016/j.amepre.2023.05.015)
3. Pérez-Escamilla R, Tomori C, Hernández-Cordero S, et al. 2023 Lancet Breastfeeding Series Group. Breastfeeding: Crucially important, but increasingly challenged in a market-driven world. *Lancet* 2023;401(10375):472–485; doi: [10.1016/s0140-6736\(22\)01932-8](https://doi.org/10.1016/s0140-6736(22)01932-8)
4. United Nations Children's Fund. The climate-changed child: A children's climate risk index supplement, UNICEF. New York; November 2023. Available from: <https://www.unicef.org/reports/climate-changed-child> [Last accessed: August 21, 2024].
5. Østby G, Rustad SA, Arasmith A. Children affected by armed conflict, 1990–2020, *Conflict Trends*, 4. Oslo: PRIO; 2021. Available from: <https://www.prio.org/publications/12884> [Last accessed: August 21, 2024].
6. Bartick M, Zimmerman DR, Sulaiman Z, et al. Academy of breastfeeding medicine position statement: Breastfeeding in emergencies. *Breastfeed Med* 2024;19(9):666–682; doi: [10.1089/bfm.2024.84219.bess](https://doi.org/10.1089/bfm.2024.84219.bess)
7. World Health Organization and UNICEF. Global strategy for infant and young child feeding. 2003. Available from: <https://www.who.int/publications/i/item/9241562218> [Last accessed: August 17, 2024].
8. World Health Organization (WHO). Breastfeeding. WHO; 2015. Available from: <https://www.who.int/news-room/questions-and-answers/item/breastfeeding>
9. Victora CG, Bahl R, Barros AJ, et al. Lancet Breastfeeding Series Group. Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. *Lancet* 2016;387(10017): 475–490; doi: [10.1016/S0140-6736\(15\)01024-7](https://doi.org/10.1016/S0140-6736(15)01024-7)
10. Feltner C, Weber RP, Stuebe A, et al. Breastfeeding programs and policies, breastfeeding uptake, and maternal health outcomes in developed countries [Internet]. Rockville, MD: Agency for Healthcare Research and Quality (US); 2018. Report No.: 18-EHC014-EF. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK525106/> [Last accessed: August 21, 2024].
11. Meek JY, Noble L. Technical report: Breastfeeding and the use of human milk. *Pediatrics* 2022;150(1):e2022057989; doi: [10.1542/peds.2022-057989](https://doi.org/10.1542/peds.2022-057989)
12. World Health Organization. Health topics: Breastfeeding. Available from: [https://www.who.int/health-topics/breastfeeding#tab=tab\\_2](https://www.who.int/health-topics/breastfeeding#tab=tab_2) [Last accessed: August 21, 2024].
13. Nguyen T, Dennison BA, Fan W, et al. Variation in formula supplementation of breastfed newborn infants in New York Hospitals. *Pediatrics* 2017;140(1):e20170142; doi: [10.1542/peds.2017-0142](https://doi.org/10.1542/peds.2017-0142)
14. Kellams A, Harrell C, Omage S, et al. the Academy of Breastfeeding Medicine. ABM Clinical Protocol #3: Supplementary feedings in the healthy term breastfed neonate, revised 2017. *Breastfeed Med* 2017. 12:188–198; doi: [10.1089/bfm.2017.29038.ajk](https://doi.org/10.1089/bfm.2017.29038.ajk)
15. World Health Organization (WHO). Ten steps to successful breastfeeding. Available from: <https://www.who.int/teams/nutrition-and-food-safety/food-and-nutrition-actions-in-health-systems/ten-steps-to-successful-breastfeeding> [Last accessed: August 22, 2024].
16. Altuntas N, Kocak M, Akkurt S, et al. LATCH scores and milk intake in preterm and term infants: A prospective comparative study. *Breastfeed Med* 2015;10(2):96–101; doi: [10.1089/bfm.2014.0042](https://doi.org/10.1089/bfm.2014.0042)
17. Feldman-Winter L, Kellams A, Peter-Wohl S, et al. Evidence-based updates on the first week of exclusive breastfeeding among infants <math>\leq 35</math> weeks. *Pediatrics* 2020;145(4): e20183696; doi: [10.1542/peds.2018-3696](https://doi.org/10.1542/peds.2018-3696)
18. Bookhart LH, Anstey EH, Kramer MR, et al. A nation-wide study on the common reasons for infant formula supplementation among healthy, term, breastfed infants in US Hospitals. *Matern Child Nutr* 2022;18(2):e13294; doi: [10.1111/mcn.13294](https://doi.org/10.1111/mcn.13294)
19. Watchmaker B, Boyd B, Dugas LR. Newborn feeding recommendations and practices increase the risk of development of overweight and obesity. *BMC Pediatr* 2020;20(1): 104; doi: [10.1186/s12887-020-1982-9](https://doi.org/10.1186/s12887-020-1982-9)
20. Dharod JM, McElhenny KS, DeJesus JM. Formula feeding is associated with rapid weight gain between 6 and 12 months of age: Highlighting the importance of developing specific recommendations to prevent overfeeding. *Nutrients* 2023;15(18): 4004; doi: [10.3390/nu15184004](https://doi.org/10.3390/nu15184004)
21. Chantry CJ, Dewey KG, Pearson JM, et al. In-hospital formula use increases early breastfeeding cessation among first-time mothers intending to exclusively breastfeed. *J Pediatr* 2014;164(6):1339–1345.e5; doi: [10.1016/j.jpeds.2013.12.035](https://doi.org/10.1016/j.jpeds.2013.12.035)
22. Nguyen TT, Withers M, Hajeerhoy N, et al. Infant formula feeding at birth is common and inversely associated with subsequent breastfeeding behavior in Vietnam. *J Nutr* 2016; 146(10):2102–2108; doi: [10.3945/jn.116.235077](https://doi.org/10.3945/jn.116.235077)
23. McCoy MB, Heggie P. In-hospital formula feeding and breastfeeding duration. *Pediatrics* 2020;146(1):e20192946; doi: [10.1542/peds.2019-2946](https://doi.org/10.1542/peds.2019-2946)
24. Perrine CG, Scanlon KS, Li R, et al. Baby-friendly hospital practices and meeting exclusive breastfeeding intention. *Pediatrics* 2012;130(1):54–60; doi: [10.1542/peds.2011-3633](https://doi.org/10.1542/peds.2011-3633)
25. How the marketing of formula milk influences our decisions on infant feeding. Geneva: World Health Organization and the United Nations Children's Fund (UNICEF); 2022. Licence: CC BY-NC-SA 3.0 IGO. Cataloguing-in-Publication (CIP) Data. Available from: <http://apps.who.int/iri>
26. Rollins N, Piwoz E, Baker P, et al. 2023 Lancet Breastfeeding Series Group. Marketing of commercial milk formula: A system to capture parents, communities, science, and policy. *Lancet* 2023;401(10375):486–502; doi: [10.1016/S0140-6736\(22\)01931-6](https://doi.org/10.1016/S0140-6736(22)01931-6)
27. Baker P, Smith JP, Garde A, et al. 2023 Lancet Breastfeeding Series Group. The political economy of infant and young child feeding: Confronting corporate power, overcoming structural barriers, and accelerating progress. *Lancet* 2023;401(10375): 503–524; doi: [10.1016/S0140-6736\(22\)01933-X](https://doi.org/10.1016/S0140-6736(22)01933-X)

Table. Risk Factors for Sub-optimal Intake and Potential Need for Supplementation

Temporary Factors with Potential Resolution (See related ABM Protocols)	Permanent Factors
<b>Maternal risk factors for low milk production or failed lactogenesis:</b>	
<p>Anatomical Factors:</p> <ul style="list-style-type: none"> <li>• Breast pathology, such as mastitis</li> <li>• Advanced maternal age</li> <li>• Nipple shape and size with wider and longer nipples may have a greater risk for difficulties in attachment to the breast (which may lead to lower milk transfer and downregulation of milk production)</li> </ul>	<ul style="list-style-type: none"> <li>• Primary glandular insufficiency (also known as insufficient glandular tissue, IGT) or mammary hypoplasia</li> <li>• Previous breast surgery</li> </ul>
<b>Physiological factors:</b>	
<ul style="list-style-type: none"> <li>• Alcohol, tobacco or THC use and/or exposure</li> <li>• Eating disorders (possibly mediated by prolactin production)</li> <li>• Difficulty with milk expression, leading to downregulated milk production and feedback inhibition of lactation (e.g. engorgement, stress, poor pump mechanics, poor flange fit)</li> <li>• Maternal consumption of particular medications</li> </ul>	<ul style="list-style-type: none"> <li>• Maternal prolactin deficiency (e.g. viral, post-hemorrhagic infarct, pituitary apoplexy, hypophysitis, adenoma or prior brain irradiation)</li> <li>• Metabolic health, including hypertension, insulin resistance and class 2+ obesity (BMI 35-39.9 Kg/m<sup>2</sup>)</li> </ul>
<b>Intrapartum complications/iatrogenic factors include:</b>	
<ul style="list-style-type: none"> <li>• Postpartum hemorrhage (mediated through pituitary insult or anemia),</li> <li>• Caesarean delivery (mediated through delayed lactogenesis 2 and difficulty with early breastfeeding)</li> <li>• Retained placenta and/or other reasons for persistently elevated progesterone</li> <li>• Missed feedings due to separation or infant with decreased appetite often due to introduction of supplementation</li> <li>• Refractory or intolerable pain during breastfeeding which remains unrelieved by interventions</li> </ul>	
<b>Maternal risk factors for difficulty with milk ejection reflex:</b>	
<ul style="list-style-type: none"> <li>• DMER</li> <li>• Maternal mental health disorders (including stress and excessive pain)</li> <li>• Stress response due to parental expectations regarding feeding frequency/ sleep expectations, or excessive worry</li> </ul>	

## Temporary Factors with Potential Resolution (See related ABM Protocols)

## Permanent Factors

### Maternal risk factors for delayed secretory phase of lactogenesis (> 72 hours):

- Maternal (age>30 years, primiparity, first breastfeeding experience, prepregnant BMI>25 Kg/M<sup>2</sup>, excess gestational weight gain, gestational diabetes mellitus, PCOS)
- Labor issues (stage 2 labor > 1 hour, stressful delivery experience, Cesarean, retained placental fragments)
- Breastfeeding dyad (delayed first feed, infrequent feeds, difficulties with latch)

### Infant risk factors for suboptimal intake or potential need for supplementation:

- Latch and suckling difficulties
- Hypoglycemia<sup>1</sup>
- Hyperbilirubinemia requiring escalation of care<sup>2,3</sup>
- Excessive weight loss according to NEWT curves<sup>4,5</sup>
- Neonatal Opioid Withdrawal Syndrome (NOWS)<sup>6</sup>

## Additional References for Supplemental Table

1. Wight NE, Academy of Breastfeeding Medicine. ABM Clinical Protocol #1: Guidelines for Glucose Monitoring and Treatment of Hypoglycemia in Term and Late Preterm Neonates, Revised 2021. *Breastfeed Med Off J Acad Breastfeed Med* 2021;16(5):353–365; doi: [10.1089/bfm.2021.29178.new](https://doi.org/10.1089/bfm.2021.29178.new)
2. Kemper AR, Newman TB, Slaughter JL, et al. Clinical Practice Guideline Revision: Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation. *Pediatrics* 2022;150(3):e2022058859; doi: [10.1542/peds.2022-058859](https://doi.org/10.1542/peds.2022-058859)
3. Flaherman VJ, Maisels MJ, Academy of Breastfeeding Medicine. ABM Clinical Protocol #22: Guidelines for Management of Jaundice in the Breastfeeding Infant 35 Weeks or More of Gestation-Revised 2017. *Breastfeed Med Off J Acad Breastfeed Med* 2017;12(5):250–257; doi: [10.1089/bfm.2017.29042.vjf](https://doi.org/10.1089/bfm.2017.29042.vjf)
4. Flaherman VJ, Schaefer EW, Kuzniewicz MW, et al. Early weight loss nomograms for exclusively breastfed newborns. *Pediatrics* 2015;135(1):e16–23; doi: [10.1542/peds.2014-1532](https://doi.org/10.1542/peds.2014-1532)
5. Flaherman VJ, Schaefer EW, Kuzniewicz MK, et al. Newborn Weight Loss During Birth Hospitalization and Breastfeeding Outcomes Through Age 1 Month. *J Hum Lact Off J Int Lact Consult Assoc* 2017;33(1):225–230; doi: [10.1177/0890334416680181](https://doi.org/10.1177/0890334416680181)
6. Grossman MR, Lipshaw MJ, Osborn RR, et al. A Novel Approach to Assessing Infants With Neonatal Abstinence Syndrome. *Hosp Pediatr* 2018;8(1):1–6; doi: [10.1542/hpeds.2017-0128](https://doi.org/10.1542/hpeds.2017-0128)

### Additional Information

BMI = Body Mass Index

DMER = Dysphoric Milk Ejection Reflex

NEWT = Newborn Weight Loss Tool

PCOS = Polycystic Ovarian Syndrome

THC = Tetrahydrocannabinol

**ABM is deeply committed to supporting the breastfeeding medicine community.** We are dedicated to offering our protocols, position statements, and patient handouts at no cost to ensure accessibility for all. We would be immensely grateful for financial donations to sustain and enhance our efforts to provide high-quality resources. Your support helps us continue our mission of serving the breastfeeding medicine community with the excellence it deserves.