**MAINE MEDICAL CENTER**

**Institutional Policy Manual**

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# Policy Title: Supplementary Feedings in the Term Breastfed Neonate (excluding NICU)

# Policy Summary: It is the policy of Maine Medical Center (MMC) to provide a guideline to health care professionals on appropriate use of supplementary feedings in the term breastfed neonate.

**Policies:**

1. Healthcare professionals at MMC will follow this policy, an adaptation from the Academy of Breastfeeding Medicine’s Protocol #31, on appropriate use of supplementary feedings in the term breastfed neonate. The status of the infant requiring supplementation should be determined and any decisions made on a case-by-case basis.
2. A medical provider’s order is required when supplements are medically indicated and parent education when supplements are not medically indicated. It is the responsibility of the healthcare provider to fully inform parents of the benefits and risks of supplementation, document parental decisions, and support the parents after they have made a decision.2,3
3. All supplemental feedings will be documented, including the content, volume, method, and medical indication or reason.
4. The choice of supplement will prioritize mother’s own expressed milk, followed by pasteurized donor human milk, then formula. For more information, see section below on “Choice of Supplement.”
5. Supplementation will be administered in ways that help preserve breastfeeding. For more information, see sections below regarding “Volume of Supplemental Feeding” and “Methods of Providing Supplementary Feedings.”
6. Criteria for stopping supplementation should be considered from the time of the decision to supplement and should be discussed with the parents. Underlying factors should be addressed and mothers should be assisted with their milk supply, latch, and comfort with assessing the signs that their infant is adequately fed. It is important to closely follow up mother and infant. .

# Procedures:

1. Before any supplementary feedings are begun, it is important that a formal evaluation of each mother-baby dyad, including a direct observation of breastfeeding, is completed. This evaluation should be undertaken by a healthcare provider with expertise in breastfeeding management when available.4,5
2. When supplementary feeding is medically necessary, the primary goals are to feed the infant and to optimize the maternal milk supply while determining the cause of low milk supply, poor feeding, or inadequate milk transfer. Supplementation should be performed in ways that help preserve breastfeeding such as limiting the volume to what is necessary for the normal newborn physiology, avoiding artificial nipples,6 stimulating the mother’s breasts with hand expression or pumping, and for the infant to continue to practice at the breast.
3. Optimally, mothers need to express milk frequently, usually once for each time the infant receives a supplement, or at least 8 times in 24 hours if the infant is not feeding at the breast. Breasts should be fully drained each time.7 Maternal breast engorgement should be avoided as it will further compromise the milk supply and may lead to other complications.8
4. Medical indications for supplementation in term (37-42 week), healthy infants are few4,9:
	1. Separation of mother and infant
		* Maternal illness resulting in separation of infant and mother (i.e. shock or psychosis)
		* Mother not at the same hospital
	2. Infant with inborn error of metabolism (i.e. galactosemia)
	3. Infant who is unable to feed at the breast (i.e. congenital malformation, illness)
	4. Maternal medications that are contraindicated in breastfeeding10, 11
5. Other *possible* indications for supplementation in term infants include the following. In each case, the medical provider must decide if the clinical benefits outweigh the potential negative consequences of such feedings:
6. Infant indications
	* + Asymptomatic hypoglycemia, documented by laboratory blood glucose measurement (not bedside screening methods) that is unresponsive to appropriate frequent breastfeeding. Note that 40% dextrose gel applied to the side of the infant’s cheek is effective in increasing blood glucose levels in this scenario and improves the rate of exclusive breastfeeding after discharge with no evidence of adverse effects.12 Symptomatic infants should be treated with intravenous glucose.13 Breastfeeding should continue during intravenous glucose therapy.
		+ Clinical and laboratory evidence of significant dehydration (i.e. high sodium, poor feeding, lethargy, etc.) that is not improved after skilled assessment and proper management of breastfeeding.14
		+ Weight loss of ≥8-10% (day 5/120 hours or later), or weight loss greater than 75th percentile for age. Although weight loss in the range of 8-10% may be within normal limits if all else is going well and the physical examination is normal, it is an indication for careful assessment and possible breastfeeding assistance. Weight loss in excess of this may be an indication of inadequate milk transfer or low milk production, but a thorough evaluation is required before automatically ordering supplementation.15,16,17
		+ Delayed bowel movements, fewer than four stools on day 4 of life, or continued meconium stools on day 5 (120 hours).5, 17
		+ Hyperbilirubinemia
			- Suboptimal intake jaundice of the newborn associated with poor breast milk intake despite appropriate intervention. This characteristically begins at 2-5 days and is marked by ongoing weight loss, limited stooling and voiding with uric acid crystals.
			- Breast milk jaundice when levels reach 20-25 mg/dL in an otherwise thriving infant and where a diagnostic and/or therapeutic interruption of breastfeeding may be under consideration. First line diagnostic management should include laboratory evaluation, instead of interruption of breastfeeding.
	1. Maternal indications
		* Delayed secretory activation (day 3-5 or later/72-120 hours and inadequate intake by the infant).17
		* Primary glandular insufficiency (occurs in less than 5% of women - primary lactation failure), as evidenced by abnormal breast shape, poor breast growth during pregnancy, or minimal indications of secretory activation.18,19
		* Breast pathology or prior breast surgery resulting in poor milk production.18
		* Intolerable pain during feedings unrelieved by interventions

**Additional Information:**

**Choice of Supplement**

1. Expressed breast milk from the infant’s mother is the first choice for supplemental feeding.4,20 Hand expression may elicit larger volumes than a breast pump in the first few days following birth and may increase overall milk supply.21 Breast massage and/or compression along with expressing with a mechanical pump may also increase available milk.22
2. If the volume of the mother’s own colostrum/milk does not meet her infant’s feeding requirements (see Volume of Supplemental Feeding) and supplementation is required, pasteurized donor human milk is preferable to other supplements.20 Refer to MMC Policy “Use of Pasteurized Donor Human Milk on the Mother Baby Care Unit” for procedures on use at MMC.
3. When pasteurized donor human milk is not available or appropriate, protein hydrolysate formulas may be preferable to standard infant formula as they avoid exposure to intact cow’s milk proteins and reduce bilirubin levels more rapidly.23 The use of this type of formula may also convey the psychological message that the supplement is a temporary therapy, not a permanent inclusion of artificial feedings.
4. Supplementation with glucose water is not appropriate because it does not provide sufficient nutrition, does not reduce serum bilirubin,24,25 and might cause hyponatremia.
5. The potential risks and benefits of other supplemental fluids, such as standard formulas, soy formulas, or protein hydrolysate formulas, must be considered along with the available resources of the family, the infant’s age, the amounts needed, and the potential impact on the establishment of breastfeeding.

**Volume of Supplemental Feeding**

1. Infants fed infant formula ad libitum commonly have much higher intakes than breastfed infants.26,27 Acknowledging that ad libitum breastfeeding emulates evolutionary feeding and considering recent data on obesity in formula-fed infants, it appears that such formula-fed infants may be overfed.
2. As there is no definitive research available, the amount of supplement given should reflect the normal amounts of colostrum available, the size of the infant’s stomach (which changes over time), and the age and size of the infant. Intake on day 2 postbirth is generally higher than day 1 in relation to infant’s demand.26
3. Based on the limited research available, suggested intakes for term infants are as follows, although feeding should be by infant cue to satiation (see Appendix A for visual):

|  |  |
| --- | --- |
| **Time** | **Intake (mL/feed)** |
| 0-24 hours | 2-10 |
| 24-48 hours | 5-15 |
| 48-72 hours | 15-30 |
| 72-96 hours | 30-60 |

**Methods of Providing Supplementary Feedings**

1. When supplementary feedings are needed there are many methods from which to choose: a supplemental nursing device at the breast, spoon or pipette feeding, finger feeding, syringe feeding, or bottle feeding.28
2. An optimal supplemental feeding device has not yet been identified, and may vary from one infant to another. No method is without potential risk or benefit.29 There is some evidence that avoiding artificial nipples for supplementation may help the infant return to exclusive breastfeeding.6,16,30
3. When selecting an alternative feeding method, clinicians should consider several criteria:
	1. Cost and availability
	2. Ease of use and cleaning
	3. Stress to the infant
	4. Whether adequate milk volume can be fed in 20-30 minutes
	5. Whether anticipated use is short- or long-term
	6. Maternal preference
	7. Expertise of the healthcare staff
	8. Whether the method enhances development of breastfeeding skills
4. If bottles are being used, pacing the feed may be beneficial, especially for preterm infants.31
5. Supplemental nursing systems (SNS) have the advantages of supplying a supplement while simultaneously stimulating the breast to produce more milk, reinforcing the infant’s feeding at the breast, enabling the mother to have a breastfeeding experience, and encouraging skin-to-skin. However, mothers may find the systems awkward to use, difficult to clean, relatively expensive, requiring moderately complex learning, and the infant must be able to latch effectively.28 A simpler version, supplementing with a pipette or syringe while the infant is feeding at breast, may be effective.
6. Bottle feeding is the most commonly used method of supplementation in more affluent regions of the world, but concerns have been raised because of distinct differences in tongue and jaw movements, and faster flow may result in higher (and unnecessary) volumes of feeds.28 Some experts have recommended a nipple with a wide base and slow flow to try to mimic breastfeeding and to avoid nipple confusion or preference,29,32 but little research has been done evaluating outcomes with different nipples.

**Definitions:**

*Exclusive breast milk feeding* – Feeding only breast milk (at the breast or own mothers’ expressed breast milk), no food or water except vitamins, minerals, and medications.

*Supplementary feedings* – Additional fluids provided to a breastfed infant before 6 months (recommended duration of exclusive breastfeeding). These fluids may include donor human milk, infant formula, or other breast milk substitutes.

*Term infant* – In this policy, “term infant” also includes early-term infants (gestational age 37 – 38 and 6/7 weeks).

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Related policies:

* Use of Pasteurized Donor Human Milk on the Mother Baby Care Unit (excluding NICU)
* Breastfeeding

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**Sponsor: ­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_**

*Director, Mother Baby Unit*

**VP/AVP/SVP**

**Approval: \_\_\_\_­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_** *SVP Patient Care Services, CNO*