BREASTFEEDING MEDICINE
Volume 6, Number 3, 2011

DOI: 10.1089/bfm.2011.9990

ABM Clinical Protocol #10: Breastfeeding the Late Preterm Infant ($34^{0/7}$ to $36^{6/7}$ Weeks Gestation) (First Revision June 2011)*

The Academy of Breastfeeding Medicine

A central goal of The Academy of Breastfeeding Medicine is the development of clinical protocols for managing common medical problems that may impact breastfeeding success. These protocols serve only as guidelines for the care of breastfeeding mothers and infants and do not delineate an exclusive course of treatment or serve as standards of medical care. Variations in treatment may be appropriate according to the needs of an individual patient. These guidelines are not intended to be all-inclusive, but to provide a basic framework for physician education regarding breastfeeding.

Goals

1. Promote, support, and sustain breastfeeding in the late preterm infant.
2. Maintain optimal health of the infant and mother.

Purpose

1. Allow the late preterm infant to breastfeed and/or breastmilk feed to the greatest extent possible.
2. Heighten awareness of difficulties that late preterm infants and their mothers may experience with breastfeeding.
3. Offer strategies to anticipate, identify promptly, and manage breastfeeding problems that the late preterm infant and mother may experience in the inpatient and outpatient settings.
4. Prevent medical problems such as dehydration, hypoglycemia, hyperbilirubinemia, and failure to thrive in the late preterm infant.
5. Maintain awareness of mothers' needs, understanding of current plans, and ability to cope.

Definition

At the time this protocol was first written "near-term" infant was commonly used to describe infants born in the few weeks before the 37^{th} week of gestation. In July 2005 a panel of experts assembled by National Institute of Child Health and Human Development designated infants born between $34^{0/7}$ to $36^{6/7}$ weeks of gestation as late preterm to emphasize the fact they are really "preterm" and not "almost term" and establish a uniform designation for this group of infants.[1] This definition, however, includes infants born 1 week more premature ($34^{0/7}$–$34^{6/7}$ weeks) than the previous Academy of Breastfeeding Medicine protocol for the "near-term infant" that encompassed infants born at $35^{0/7}$ weeks to $36^{6/7}$ weeks. In addition, infants born at $37^{0/7}$–$37^{6/7}$ weeks may be at risk for breastfeeding problems and associated risks, and, therefore, the following guidelines may be applicable to these infants as well.[2]

Background

The advantages of breastmilk feeding for premature infants are even greater than those for term infants; however, a large body of literature in the past 5 years documents the increased risk of morbidity and even mortality of the late preterm infant often related to feeding problems, especially when there is inadequate support of breastfeeding.[3–11] Establishing breastfeeding in the late preterm infant is frequently more problematic than in the full-term infant. Because of their immaturity, late preterm infants may be sleepier and have less stamina and more difficulty with latch, suck, and swallow than a full-term infant. The sleepiness and inability to suck vigorously may be misinterpreted as sepsis, leading to unnecessary separation and treatment. Alternatively, the late preterm infant may appear deceptively vigorous at first glance. Physically, large newborns are often mistaken for being more developmentally mature than their actual gestational age and as a result receive less attention than they need. For example, the 3.8-kg baby born at 40 weeks was 3.0 kg at 36 weeks of gestation.

The late preterm breastfeeding infant has more difficulty maintaining body temperature, increased vulnerability to infection, greater delays in bilirubin excretion, and more respiratory instability than the full-term infant. Consequently they are at greater risk for hypothermia, hypoglycemia, excessive weight loss, dehydration, slow weight gain, failure to thrive, prolonged artificial milk supplementation, exaggerated jaundice, kernicterus, dehydration, fever secondary to

*This protocol was previously titled "Breastfeeding the Near-Term Infant (35 to 37 Weeks Gestation)."

dehydration, sepsis, apnea, re-hospitalization, and breastfeeding failure. Furthermore, mothers of late preterm infants are more likely to deliver multiples or have a medical condition such as diabetes, pregnancy-induced hypertension, chorioamnionitis, or a cesarean-section delivery that may affect the success of breastfeeding.[9] Late preterm infants are also more likely to be separated from their mother for evaluation and treatment of medical problems. Late preterm infants may be discharged home after successful transition to the extrauterine environment, but before lactogenesis II is fully established and before problems with latch and milk transfer can be discovered and then adequately addressed. Parental education and timely outpatient follow-up by a provider knowledgeable in breastfeeding are crucial in the proper management of breastfeeding for these mother–infant dyads.

All infants, including late preterm infants, have a greater chance of exclusive breastfeeding in hospitals that adhere to the Ten Steps to Successful Breastfeeding. To this end, practitioners should become knowledgeable in the Ten Steps and work with the administration in their maternity hospitals to uphold the guidelines set forth in the Ten Steps.[12]

Given the known increased risk of medical problems of the late preterm as compared with the term infant, close observation and monitoring are required, especially in the first 12–24 hours after birth when the risk of inadequate adaptation to extrauterine life is highest. Each delivery service must determine where and how this can best be accomplished while supporting the mother-infant dyad and breastfeeding. Keep in mind infants born at $34^{0/7}$ to $34^{6/7}$ weeks have a 50% risk for morbidity during the birth hospitalization.[9] Some acute problems encountered in the late preterm infant can be managed on the postpartum floor, but there are times when an infant should be transferred to a higher level of care for appropriate care and monitoring.

The late preterm infant's condition requires timely evaluation after discharge. Just as many hospitals are becoming breastfeeding friendly, the outpatient office or clinic needs to be not only supportive of the breastfeeding mother, but also able to assist mothers with uncomplicated problems or questions related to breastfeeding. It is essential to be able to refer mothers and infants in a timely manner to a trained lactation professional for more complicated breastfeeding problems. A lactation referral should be viewed with the same medical urgency as any other acute medical referral.

Principles of Care

1. Communicate optimally:
   a. Develop pathway and order set for breastfeeding the late preterm infant.
   b. Communicate the discharge feeding plan clearly to the family and primary health provider.
   c. Facilitate communication among physician, nurses, and lactation consultants in the inpatient and outpatient settings.
   d. Avoid conflicting advice to mother and family about the feeding plan.
2. Assess/reassess:
   a. Assess gestational age objectively and associated risk factors.
   b. Observe closely for signs of physiologic instability.
   c. Assess breastfeeding daily on the postpartum floor or special care nursery.
   d. Assess breastfeeding issues carefully in the outpatient setting.
3. Provide timely lactation support in the inpatient and outpatient setting.
4. Avoid or minimize separation of mother and infant:
   a. In the postpartum period, including immediately postpartum.
   b. In cases in which either mother or infant is hospitalized for medical reasons.
5. Prevent and promptly recognize frequently encountered problems in breastfed late preterm infants:
   a. Hypoglycemia
   b. Hypothermia
   c. Hyperbilirubinemia
   d. Dehydration or excessive weight loss
   e. Failure to thrive
6. Educate:
   a. Educate staff and care providers in an ongoing manner on issues specific to breastfeeding the late preterm infant in the inpatient and outpatient settings.
   b. Educate parents about breastfeeding the late preterm infant.
   c. Train one (or two) outpatient office support person (R.N. or lactation educator) in:
      i. breastfeeding support, assessment, basic breastfeeding problem solving, and late preterm.
      ii. breastfeeding issues.
7. Discharge/follow-up:
   a. Develop criteria for discharge readiness.
   b. Establish a post-discharge feeding plan.
   c. Facilitate timely and frequent outpatient follow-up to assure effective breastfeeding after discharge.
   d. Monitor carefully once the mother and late preterm infant are outpatients.
8. Monitor care of the late preterm infant through quality improvement projects (in- and outpatient settings).

Inpatient: Implementation of Principles of Care

Quality of evidence for each recommendation, as defined in the U.S. Preventive Services Task Force guideline, is noted in parentheses.*

These principles are guidelines for optimum care of the late preterm infant. Each provider and newborn unit should use these recommendations as applicable to their institution and practice.

1. Initial steps:
   a. Communicate the feeding plan through a prewritten late preterm order set that can be easily modified.[14] (III)

*Levels of Evidence (I, II-1, II-2, II-3, and III) are based on the U.S. Preventive Services Task Force "Quality of Evidence."[13]

b. Encourage immediate and extended skin-to-skin contact to improve postpartum stabilization of heart rate, respiratory effort, temperature control, metabolic stability, and early breastfeeding.[15] (I)
c. Assess gestational age by obstetrical estimate and Ballard/Dubowitz scoring.[16] (III)
d. Observe the infant closely for 12–24 hours to rule out physiologic instability (e.g., hypothermia, apnea, tachypnea, oxygen desaturation, hypoglycemia, poor feeding). As noted in the Background of this protocol, each delivery service must determine where and how this can best be accomplished while supporting the mother–infant dyad and breastfeeding. (III)
e. Encourage rooming-in 24 hours a day and frequent, extended periods of skin-to-skin contact. If the infant is physiologically stable and healthy, allow the infant to remain with the mother while receiving intravenous antibiotics or phototherapy.[17] (III)
f. Allow free access to the breast, encouraging initiation of breastfeeding within 1 hour after birth.[18] (II-2)
g. Encourage breastfeeding ad libitum and on demand. Sometimes it may be necessary to wake the baby if he or she does not indicate hunger cues, which is not unusual in the late preterm infant.[19] The infant should be breastfed (or breastmilk fed) eight to 12 times per 24-hour period. A mother may need to express her milk and give it to the baby using alternative feeding methods if the baby is not able to effectively breastfeed.[19,20] (III)
h. Show the mother techniques to facilitate effective latch with careful attention to adequate support of the jaw and head.[21] (III)

2. Ongoing care:

a. Communicate daily changes in feeding plan either directly or with use of written bedside tool such as a crib card.[14] (III)
b. Evaluate desirably, within 24 hours of delivery, formally by a lactation consultant or other certified health professional with expertise in lactation management of the late preterm infant.[14] (III)
c. Assess and document breastfeeding at least twice daily by two different providers using a standardized tool (e.g., LATCH Score,[22] IBFAT,[23] Mother/Baby Assessment Tool[24]). (II-3)
d. Educate the mother about breastfeeding her late preterm infant (e.g., position, latch, duration, early feeding cues, breast compressions, etc.)[17,19] (III)
e. Monitor vital signs, weight change, stool and urine output, and milk transfer.[11,25] (III)
f. Monitor for frequently occurring problems (e.g., hypoglycemia, hypothermia, poor feeding, hyperbilirubinemia).[26–28] The late preterm infant should be followed closely with a low threshold for checking bilirubin levels and have a routine discharge bilirubin determination plotted on a Bhutani curve according to age in hours.[2,29] (III)
g. Avoid excessive weight loss or dehydration. Losses greater than 3% of birth weight by 24 hours of age or greater than 7% by day 3 merit further evaluation and monitoring.[14,19] (III)
i. If there is evidence of ineffective milk transfer, teach the mother to use breast compressions while the infant suckles[19] (III) and consider the use of an ultrathin silicone nipple shield.[30–32] (II-2) The use of nipple shields is becoming more common for this group of infants and can be helpful. If a nipple shield is used, the mother and baby should be followed closely by a trained lactation consultant or knowledgeable healthcare professional. (III)
ii. Pre- and post-feeding weights may be helpful to assess milk transfer especially once lactogenesis II has occurred.[33–36] (II-2)
iii. The infant may need to be supplemented after breastfeeding with small quantities (5–10 mL per feeding on day 1, 10–30 mL per feeding thereafter) of the mother's expressed breastmilk, donor human milk, or formula.[14,20] Mothers may supplement using a supplemental nursing device at the breast, cup feeds, finger feeds, syringe feeds, or bottle depending on the clinical situation and the mother's preference.[20] Cup feedings have demonstrated safety in preterm infants, although intake is less and duration of feeding is longer compared with bottle feeds.[37–39] There is, however, little evidence about the safety or efficacy of other alternative feeding methods or their effect on breastfeeding. When cleanliness is suboptimal, cup feeding may be the best choice.[40] (I, II-1, II-2, II-3, III)
iv. If supplementing, the mother should pump or express milk after breastfeeding, six to eight times per 24 hours, until the baby is breastfeeding well to establish and maintain her milk supply.[11,20] Use of a hospital-grade electric pump is recommended. Milk production may be increased by hand massage of the breasts while pumping.[41] (II-3)
h. Avoid thermal stress by using skin-to-skin (i.e., kangaroo) care[15] (I) as much as possible or by double wrapping if necessary and by dressing the baby in a shirt and hat. Consider intermittent use of an incubator to maintain normothermia.[14,19] (III)

3. Discharge planning:

a. Assess readiness for discharge, including physiologic stability and adequate intake exclusively at breast, or with supplemental feedings.[42] (II-2) The physiologically stable late preterm infant should be able to maintain body temperature for at least 24 hours in an open crib and have a normal respiratory rate, and weight should be no more than 7% below birth weight. Adequate intake should be documented by feeding volume or an improving pattern of infant weight (e.g., stable or increasing).[14] (II-2) Twenty-four-hour test weights, with a scale designed for adequate precision may be useful to assess intake.[39] (II-3)
b. Develop a discharge feeding plan. Consider milk intake (mL/kg/day), method of feeding (breast, bottle, supplemental device, etc.), and type of feeding (i.e., breastmilk, donor human milk, or formula).[14] If supplementing, determine method most acceptable to mother for use after discharge.[20] (III)

c. Make an appointment for follow-up 1–2 days after discharge to recheck weight, feeding adequacy, and jaundice.[17] (II-2)
d. Communicate discharge-feeding plan to mother and pediatric outpatient provider. Written communication is preferred. (III)

Outpatient: Implementation of Principles of Care

1. Initial visit:
   a. The first outpatient office or home health visit should occur 1 or 2 days after discharge.[17] (II-2)
   b. Review and place relevant information from the inpatient maternal and infant records, including prenatal, perinatal, infant, and feeding history (e.g., need for supplement in the hospital, problems with latch, need for phototherapy, etc.), in the outpatient chart. Gestational age and birth weight should be noted prominently.[25] (III)
   c. Review of breastfeeding since discharge by the physician needs to be very specific regarding frequency, approximate duration of feedings, and how the baby is being fed (e.g., at the breast, expressed breastmilk with supplemental device such as supplemental nursing system, finger feeds, or bottle with artificial nipple). Information about stool and urine output, color of stools, baby's state (e.g., crying, not satisfied after a feed, sleepy and difficult to keep awake at the breast during a feed, etc.) should be obtained. If the parents have a written feeding record, it should be reviewed.[11] (III)
   d. Examine the infant, including an accurate weight without clothes and calculation of percentage change in weight from birth, change in weight from discharge, state of alertness, and hydration. Assess for jaundice with transcutaneous bilirubin screening device and/or serum bilirubin determination if indicated.[11] (III)
   e. Assess the mother's breast for nipple shape, pain and trauma, engorgement, and mastitis. The mother's emotional status and degree of fatigue should be considered, especially when considering supplemental feeding routines. Whenever possible, observe the baby feeding at the breast, evaluating the latch, suck, and swallow.[11] (III)
2. Problem solving:
   a. Poor weight gain (<20 g/day) is most likely the result of inadequate intake. Median daily weight gain of a healthy newborn is 28–34 g/day.[43] The healthcare provider must determine whether the problem is insufficient breastmilk production, inability of the infant to transfer enough milk, or a combination of both. The infant who is getting enough breastmilk should have at least six voids and four sizable yellow seedy stools daily by day 4, have lost no more than 7% of birth weight, and be satisfied after 20–30 minutes of nursing.[11] The following strategies may be helpful:
      i. Shortening duration of breastfeeds if the late preterm infant is not satisfied after approximately 30 minutes.
      ii. Increasing the frequency of breastfeeds.
      iii. Supplementing (preferably with expressed breastmilk) after suckling or increasing the amount of supplement.
      iv. Instituting or increasing frequency of pumping or manual expression. Consider referral to a lactation specialist. (III)
   b. For infants with latch difficulties, the baby's mouth should be examined for anatomical abnormalities (e.g., ankyloglossia [tongue-tie], cleft palate), and a digital suck exam should be performed. The mother's nipples and breast should be examined for plugged ducts, mastitis, engorgement, fullness of the breast, and nipple trauma. The infant should be observed breastfeeding to examine the latch, suck, swallow. A referral to a trained professional lactation specialist or in the case of ankyloglossia a referral to a healthcare provider trained in frenotomy may be indicated.[11,44–46] (I, II-2, III)
   c. The jaundiced late preterm infant poses more of a problem when considering management of hyperbilirubinemia. All risk factors should be determined, and if the principal factor is lack of milk, the primary treatment is to provide more milk to the baby, preferably through improved breastfeeding or expressed breastmilk supplementation. If home or institution-based phototherapy is indicated, breastmilk production and intake should not be compromised.[2,47] If the mother's own milk or donor milk is not available, small amounts of cow's milk-based formulas can be used.[47] Hydrolyzed casein formulas should be considered for this purpose, as there is evidence that they are more effective in lowering serum bilirubin than standard infant formula.[48] (II, III)
   d. Consider the use of a galactogogue (a medicine or herb that increases breastmilk supply) in mothers who have a documented low breastmilk supply and for whom other efforts to increase milk production have failed.[49,50] (II-2, III)
   e. The mother's ability to cope and manage the feeding plan should be evaluated. If the mother is not coping well, work with her to find help and or modify the feeding plan to something that is more manageable.[20] (III)
3. Follow-up:
   a. Babies who are not gaining well and for whom adjustments are being made to the feeding plan may need a visit 2–4 days after each adjustment. A home health provider preferably trained in medical evaluation of the newborn and in lactation support, who reports the weight to the primary care provider, could make this visit. (III)
   b. All infants, including late preterm breastfed infants, should receive vitamin K shortly after birth[51] (II-3) and vitamin D supplementation (400 IU/day) beginning in the first few days of life as recommended by the American Academy of Pediatrics.[52] (II-3) Late preterm breastfed infants are at risk for iron deficiency as their iron stores are less than that of the full-term infant.[53] (I) The American Academy of Pe-

diatrics Committee on Nutrition recommends 2 mg/kg/day of elemental iron for all preterm infants from 1 to 12 months of age. The late preterm breastfed infant will, therefore, need 2 mg/kg/day of iron supplementation until consuming 2 mg/kg/day through complementary feeds or weaned to iron-fortified formula. Screening for iron deficiency and iron deficiency anemia at 6 months with hemoglobin, serum ferritin, and C-reactive protein or reticulocyte hemoglobin is recommended.[53] (I)

c. The late preterm infant should have weekly weight checks until 40 weeks postconceptual age or until he or she is thriving. Weight gain should average 20–30 g/day, and length and head circumference should each increase by an average of 0.5 cm/week.[43] (III)

Recommendations for Future Research

Future research is needed to establish the best methods for monitoring the late preterm infant in the first 24 hours of life for physiologic instability while optimizing mother–infant interactions and specifically initiation of breastfeeding. Currently newborn units must decide where and how this should be done. There is no uniform approach to this issue. Additional areas of research should focus on:

1. the best methods for assessing breastfeeding
2. supplementing the late preterm infant
3. appropriate use of nipple shields
4. appropriate feeding plans
5. establishing discharge readiness
6. establishing appropriate guidelines for certified lactation consultation in the in- and outpatient area
7. establish outpatient care guidelines to support lactation while avoiding medical problems (i.e., hyperbilirubinemia and hypernatremic dehydration).

Outcomes measures for future research should include breastfeeding duration and exclusivity in addition to other parameters appropriate for the subject of investigation.

Acknowledgments

This work was supported in part by a grant from the Maternal and Child Health Bureau, U.S. Department of Health and Human Services.

References

1. Engle WA. A recommendation for the definition of "late preterm" (near-term) and the birth weight-gestational age classification system. *Semin Perinatol* 2006;30:2–7.
2. American Academy of Pediatrics, Subcommittee on Hyperbilirubinemia. Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. *Pediatrics* 2004;114:297–316. Erratum in: *Pediatrics* 2004;114:1138.
3. Pulver LS, Guest-Warnick G, Stoddard GJ, et al. Weight for gestational age affects the mortality of late preterm infants. *Pediatrics* 2009;123:e1072–e1077.
4. Donovan EF, Besl J, Paulson J, et al. Infant death among Ohio resident infants born at 32 to 41 weeks of gestation. *Am J Obstet Gynecol* 2010;203:e1–e5.
5. Reddy UM, Ko CW, Raju TN, et al. Delivery indications at late-preterm gestations and infant mortality rates in the United States. *Pediatrics* 2009;124:234–240.
6. Bird TM, Bronstein JM, Hall RW, et al. Late preterm infants: Birth outcomes and health care utilization in the first year. *Pediatrics* 2010;126:e311–319.
7. Dimitriou G, Fouzas S, Georgakis V, et al. Determinants of morbidity in late preterm infants. *Early Hum Dev* 2010;86:587–591.
8. Kitsommart R, Janes M, Mahajan V, et al. Outcomes of late-preterm infants: a retrospective, single-center, Canadian study. *Clin Pediatr (Phila)* 2009;48:844–850.
9. Shapiro-Mendoza CK, Tomashek KM, Kotelchuck M, et al. Effect of late-preterm birth and maternal medical conditions on newborn morbidity risk. *Pediatrics* 2008;121:e223–e232.
10. Wang ML, Dorer DJ, Fleming MP, et al. Clinical outcomes of near-term infants. *Pediatrics* 2004;114:372–376.
11. Neifert MR. Prevention of breastfeeding tragedies. *Pediatr Clin North Am* 2001;48:273–297.
12. Academy of Breastfeeding Medicine Protocol Committee. ABM Clinical Protocol #7: Model breastfeeding policy (revision 2010). *Breastfeed Med* 2010;5:173–177.
13. Appendix A Task Force Ratings. www.ncbi.nlm.nih.gov/books/NBK15430 (accessed April 12, 2011).
14. Hubbard E, Stellwagen L, Wolf A. The late preterm infant: A little baby with big needs. *Contemp Pediatr* November 1, 2007. www.modernmedicine.com/modernmedicine/Features/The-late-preterm-infant-A-little-baby-with-big-nee/ArticleStandard/Article/detail/472738 or spinprogram.ucsd.edu/Documents/ContemporaryPediatricsThelatepreterminfant_AlittlebabywithbigneedsCME.pdf (accessed April 12, 2011).
15. Moore ER, Anderson GC, Bergman N. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev* 2007;3:CD003519.
16. Ballard JL, Khoury JC, Wedig K, et al. New Ballard Score, expanded to include extremely premature infants. *J Pediatr* 1991;119:3:417–423.
17. Gartner LM, Morton J, Lawrence RA, et al. Breastfeeding and the use of human milk. *Pediatrics* 2005;115:496–506.
18. Righard L, Alade MO. Effect of delivery room routines on success of first breast-feed. *Lancet* 1990;336:1105–1107.
19. Walker M. Breastfeeding the late preterm infant. *J Obstet Gynecol Neonatal Nurs* 2008;37:692–701.
20. Academy of Breastfeeding Medicine Protocol Committee. ABM Protocol #3: Hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate, revised 2009. *Breastfeed Med* 2009;4:175–182.
21. Thomas J, Marinelli KA, Hennessy M, et al. ABM Clinical Protocol #16: Breastfeeding the hypotonic infant. *Breastfeed Med* 2007;2:112–118.
22. Jensen D, Wallace S, Kelsay P. LATCH: A breastfeeding charting system and documentation tool. *J Obstet Gynecol Neonatal Nurs* 1994;23:27–32.
23. Matthews MK. Developing an instrument to assess infant breastfeeding behaviour in the early neonatal period. *Midwifery* 1988;4:154–165.
24. Mulford C. The Mother-Baby Assessment (MBA): An "Apgar score" for breastfeeding. *J Hum Lact* 1992;8:79–82.
25. Breastfeeding. In: American Academy of Pediatrics Committee on Nutrition, Kleinman R, ed. *Pediatric Nutrition Handbook*. American Academy of Pediatrics, Elk Grove Village, IL, 2009, pp. 29–59.
26. Rajah TN, Higgins RD, Stark AR, et al. Optimizing care and outcome for late-preterm (near-term) infants: A summary of the workshop sponsored by the National Institute of Child Health and Human Development. *Pediatrics* 2006;118:1207–1214.

27. Wight N, Marinelli KA. ABM Clinical Protocol #1: Guidelines for glucose monitoring and treatment of hypoglycemia in breastfed neonates. *Breastfeed Med* 2006;1:178–184.
28. Bhutani VK, Johnson L. Kernicterus in late preterm infants cared for as term healthy infants. *Semin Perinatol* 2006;30:89–97.
29. Maisels MJ, Bhutani VK, Bogen D, et al. Hyperbilirubinemia in the newborn infant ≥35 weeks' gestation: An update with clarifications. *Pediatrics* 2009;124:1193–1198.
30. Meier PP, Furman LM, Degenhardt M. Increased lactation risk for late preterm infants and mothers: Evidence and management strategies to protect breastfeeding. *J Midwifery Womens Health* 2007;52:579–587.
31. Meier PP, Brown LP, Hurst NM, et al. Nipple shields for preterm infants: Effect on milk transfer and duration of breastfeeding. *J Hum Lact* 2000;16:106–114; quiz 129–131.
32. Chertok IR. Reexamination of ultra-thin nipple shield use, infant growth and maternal satisfaction. *J Clin Nurs* 2009;18:2949–2955.
33. Funkquist EL, Tuvemo T, Jonsson B, et al. Influence of test weighing before/after nursing on breastfeeding in preterm infants. *Adv Neonatal Care* 2010;10:33–39.
34. Wilhelm S, Rodehorst-Weber TK, Flanders Stepans MB, et al. The relationship between breastfeeding test weights and postpartum breastfeeding rates. *J Hum Lact* 2010;26:168–174.
35. Scanlon KS, Alexander MP, Serdula MK, et al. Assessment of infant feeding: The validity of measuring milk intake. *Nutr Rev* 2002;60:235–251.
36. Meier PP, Engstrom JL, Crichton CL, et al. A new scale for in-home test-weighing for mothers of preterm and high risk infants. *J Hum Lact* 1994;10:163–168.
37. Marinelli KA, Burke GS, Dodd VL. A comparison of the safety of cupfeedings and bottlefeedings in premature infants whose mothers intend to breastfeed. *J Perinatol* 2001;21:350–355.
38. Howard CR, Howard FM, Lanphear B, et al. Randomized clinical trial of pacifier use and bottle-feeding or cupfeeding and their effect on breastfeeding. *Pediatrics* 2003;111:511–518.
39. Collins Carmel T, Makrides M, Gillis J, et al. Avoidance of bottles during the establishment of breast feeds in preterm infants. *Cochrane Database Syst Rev* 2008;4:CD005252.
40. United Nations Children's Fund. *Feeding Low Birth Weight Babies*. UNICEF Division of Information and Public Affairs, New York, 1996.
41. Morton J, Hall JY, Wong RJ, et al. Combining hand techniques with electric pumping increases milk production in mothers of preterm infants. *J Perinatol* 2009;29:757–764.
42. American Academy of Pediatrics Committee on Fetus and Newborn. Hospital discharge of the high-risk neonate. *Pediatrics* 2008;122:1119–1126.
43. Grummer-Strawn LM, Reinold C, Krebs NF. Use of World Health Organization and CDC growth charts for children aged 0–59 months in the United States. *MMWR Recomm Rep* 2010;59(RR-9):1–15.
44. Hogan M, Westcott C, Griffiths M. Randomized, controlled trial of division of tongue-tie in infants with feeding problems. *J Paediatr Child Health* 2005;41:246–250.
45. Geddes DT, Langton DB, Gollow I, et al. Frenulotomy for breastfeeding infants with ankyloglossia: Effect on milk removal and sucking mechanism as imaged by ultrasound. *Pediatrics* 2008;122:e188–e194.
46. Ballard JL, Auer CE, Khoury JC. Ankyloglossia: Assessment, incidence, and effect of frenuloplasty on the breastfeeding dyad. *Pediatrics* 2002;110:e63. pediatrics.aappublications.org/cgi/content/full/110/5/e63 (accessed April 12, 2011).
47. Academy of Breastfeeding Medicine Protocol Committee. ABM Protocol #22: Guidelines for management of jaundice in the breastfeeding infant equal to or greater than 35 weeks' gestation. *Breastfeed Med* 2010;5:87–93.
48. Gourley GR, Kreamer B, Cohnen M, et al. Neonatal jaundice and diet. *Arch Pediatr Adolesc Med* 1999;153:184–188.
49. Gabay MP. Galactogogues: Medications that induce lactation. *J Hum Lact* 2002;18:274–279.
50. Academy of Breastfeeding Medicine Protocol Committee. ABM Protocol #9: Use of galactogogues in initiating or augmenting the rate of maternal milk secretion, first revision January 2011. *Breastfeed Med* 2011;6:41–49.
51. American Academy of Pediatrics Vitamin K Ad Hoc Task Force. Controversies concerning vitamin K and the newborn. *Pediatrics* 1993;91:1001–1003.
52. Wagner CL, Greer FR. Prevention of rickets and vitamin D deficiency in infants, children, and adolescents. *Pediatrics* 2008;122:1142–1152.
53. Berglund S, Westrup B, Domellöf M. Iron supplements reduce the risk of iron deficiency anemia in marginally low birth weight infants. *Pediatrics* 2010;126:e874–e883.

ABM protocols expire 5 years from the date of publication. Evidence-based revisions are made within 5 years or sooner if there are significant changes in the evidence.

Academy of Breastfeeding Medicine Protocol Committee
Maya Bunik, M.D., MSPH, FABM
Caroline J. Chantry, M.D., FABM
Cynthia R. Howard, M.D., MPH, FABM
Ruth A. Lawrence, M.D., FABM
Kathleen A. Marinelli, M.D., FABM, Committee Chairperson
Larry Noble, M.D., FABM, Translations Chairperson
Nancy G. Powers, M.D., FABM
Julie Scott Taylor, M.D., M.Sc., FABM

Contributors
Eyla G. Boies, M.D., FAAP
Yvonne E. Vaucher, M.D., M.P.H.

For correspondence: abm@bfmed.org

Appendix

Baby-Friendly Hospital Initiative steps for successful breastfeeding

1. Have a written breastfeeding policy.
2. Train all healthcare staff in the skills necessary to implement the policy.
3. All mothers should be informed of the benefits of breastfeeding.
4. Help mothers initiate breastfeeding within 1 hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation, even if they are be separated from their infant.
6. Give newborn infants no food or drink other than breastmilk, unless medically indicated.
7. Practice rooming-in, allowing mothers and infants to remain together, 24 hours a day if medically stable.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them, on discharge from the hospital or clinic.