Breastfeeding the Late Preterm Infant

Education for WIC Peer Counselors About Breastfeeding the Late Preterm Infant

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ABSTRACT

Mothers of late preterm infants need ongoing support because they often find establishing breastfeeding (BF) to be complex and difficult. Special Supplemental Nutrition Program for Women, Infants and Children (WIC) peer counselors provide BF information and emotional support to new mothers in many communities. However, their current training does not include education about BF for the late preterm infant. The purpose of this report is to present important information about BF and the late preterm infant that can enhance peer counselors’ ability to offer appropriate support. The effect of this education on outcomes such as BF rates, maternal self-efficacy, infant hospital readmissions, and peer counselors’ self-efficacy needs to be investigated.

Key Words: late preterm infant, breastfeeding, lactation technologies, WIC, breastfeeding peer counselor (J Nutr Educ Behav. 2017;49:1-5.)

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INTRODUCTION

Approximately 7% of all infants in the US are born between 34 and 36 completed weeks’ gestation. Categorized as late preterm, they comprise 71% of all preterm births.1 Although breastfeeding (BF) has benefits that are particularly important for this vulnerable population, large cohort studies consistently demonstrated that BF initiation, duration, and exclusivity rates for infants born before 37 weeks are significantly lower than for those born at term.2 Late preterm infants demonstrate feeding behaviors that differ from those of full-term infants.3,4 Their immature suck and sleepiness can lead to delayed lactogenesis and an insufficient milk intake, which places them at risk for poor weight gain, dehydration, and jaundice and increases the likelihood of hospital readmission in the first 2 weeks.3,4

Mothers who want to breastfeed exclusively may find themselves unprepared for the challenges presented by their developmentally immature infants.5,6 These mothers and infants often transition from hospital to home with a complex feeding plan that involves first latching the infant for a limited time using a nipple shield, then offering some expressed breast milk or infant formula, and following up with milk expression using a breast pump.7 Mothers often find this feeding regimen to be overwhelming and difficult to manage.5,6 Ongoing BF support after discharge, both professional and peer, is essential for this vulnerable population of mothers and infants.5,6

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) BF peer counselors can have an important role in providing needed social support for mothers who are BF a late preterm infant.7 Evidence suggests that contact with a WIC peer counselor facilitates women’s decisions to initiate and continue BF.7 Peer counselors are WIC clients who have been recruited and hired to provide BF support to current clients.2,7,8 They have breastfed at least 1 child and ideally are the same racial/ethnic background as the mothers they support.7 They offer basic BF information, encouragement, and emotional support to mothers via phone, text, clinic visits, and hospital and/or home visits and are available outside normal WIC clinic hours.7,8 Their role is to reinforce BF recommendations and promote the benefits of BF for mothers and children. They work with a WIC-designated BF expert who assists with BF management problems that are outside their scope of practice.8

The WIC peer counselors receive specialized training through the Loving Support program about best practices related to healthy term infants.8 However, owing to their immaturity, late preterm infants need different evidence-based practices to establish BF.4,9 Understanding these differences can help peer counselors offer more effective support to their clients. The purpose of this report is to present important information about BF and late preterm infants that can supplement

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The brain experiences significant growth during this period with a 5-fold increase in white matter and 33% growth in brain volume.\(^{10}\) Figure 1 depicts this rapid brain growth in the final weeks of pregnancy.\(^{10}\) These changes prepare newborns for BF, which requires stamina, an ability to regulate sleep–awake cycles, and a coordinated suck and swallow.\(^{4,9,11,12}\)

Breast milk has properties that benefit these immature newborns.\(^{9,12}\) For example, the composition of their mothers’ milk is specific to their needs as late preterm infants. Nutritional and anti-infective components are more highly concentrated in the milk and it is easier to digest. The milk contains higher levels of nitrogen, protein, sodium, chloride, and lipids (which also provide long-chain polyunsaturated fatty acids), all of which aid in the development of an infant’s brain and nervous system.\(^{4,9}\) Human milk also promotes the development and maturation of the healthy intestinal microbiome essential to lifelong digestive health.\(^{15}\)

Human milk and BF are important to the future health of late preterm infants. Unfortunately, their immaturity influences the ability to breastfeed effectively. Because they have difficulty staying awake and coordinating their suck and swallow, their milk intake may be insufficient to support growth.\(^{4,9,12}\) These behaviors can interfere with lactogenesis II, or copious milk production. Occurring 2–3 days after birth, this delay is often caused by a lack of nutritive sucking that is needed to stimulate the prolactin hormone and feedback inhibitor of lactation, affecting milk production.\(^{12,14}\) These immature BF behaviors often result in a cascade of events that ends in hospital readmission for dehydration or jaundice (Figure 2). By better understanding typical behaviors of late preterm infants, WIC BF peer counselors can provide mothers with important informational and emotional support.

### Typical Late Preterm Infant Behaviors

Typical newborn behaviors exhibited by late preterm infants can affect BF outcomes. Understanding their feeding cues can be complicated by differences in infant gestation, development, and individual characteristics.\(^{7}\) In the early postpartum period they may act like full-term infants and appear to be BF well during the short time they are in the hospital.\(^{4}\) However, their immaturity predisposes them to behaviors that affect their ability to breastfeed effectively, such as excessive sleepiness and short feedings.\(^{3,5,9,15,16}\) High energy demands and low energy stores decrease their feeding stamina, resulting in short feedings owing to fatigue rather than satiation.\(^{3,5,9,16,17}\) This insufficient milk intake interacts with decreased alert, awake periods.\(^{4,11,15,17}\) Parents often struggle to make sense of their infant’s behavior\(^{3,6,10}\) and may interpret these behaviors as signs of effective BF.\(^{4}\) Their immaturity affects their ability to suck effectively.\(^{12,15,18}\) Late preterm infants typically exhibit low muscle tone and underdeveloped cheek pads, which affect their ability to maintain sufficient intraoral pressure; as a consequence, they slip on and off their mother’s nipple during feedings.\(^{5,6,18}\) These behaviors contribute to a disorganized nonnutritive sucking pattern that affects their ability to transfer an adequate amount of milk from the breast.\(^{12,17}\) These normal late preterm behaviors contribute to suboptimal BF, characterized by an insufficient amount of nourishment for infant growth and maternal difficulty with milk supply.\(^{4,17}\)

### Use of Lactation Technologies

Continued use of a hospital-grade pump, nipple shields, and a baby泵

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**Figure 1.** Development of the human cerebral cortex, near-term infant (eg, late preterm; <37 weeks’ gestation). Reprinted from Kinney HC. The near-term (late preterm) human brain and risk for periventricular leukomalacia: a review. *Semin Perinatol.* 2006;30:81-88,\(^{10}\) with permission from Elsevier.

**Loving Support** peer counseling curricula used to educate WIC peer counselors.\(^{8}\)

**DISCUSSION**

The following content was developed to facilitate WIC peer counselors’ knowledge about BF for the late preterm infant. Topics discussed include characteristics of the late preterm infant and the benefits of human milk; typical infant behaviors that affect BF; lactation technologies that help establish a milk supply that supports infant growth; mothers’ experiences; and warning signs that need follow-up.

**Characteristics of the Late Preterm Infant**

During the final 4–6 weeks of pregnancy, fetuses experience a critical period of rapid brain growth and maturation of organ and body systems to ready them for life outside the womb. Glycogen stores increase in the liver, subcutaneous tissue and brown fat stores develop, muscle tone increases, and passage of maternal antibodies through the placenta increases.\(^{4,8,9}\)

The brain experiences significant growth during this period with a 5-fold increase in white matter and 33% growth in brain volume.\(^{10}\) Figure 1 depicts this rapid brain growth
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