Healthy Birth Practice #6: Keep Mother and Baby Together—It's Best for Mother, Baby, and Breastfeeding

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ABSTRACT

Mothers and babies have a physiologic need to be together at the moment of birth and during the hours and days that follow. Keeping mothers and babies together is a safe and healthy birth practice. Evidence supports immediate, uninterrupted skin-to-skin care after vaginal birth and during and after cesarean surgery for all stable mothers and babies, regardless of feeding preference. Unlimited opportunities for skin-to-skin care and breastfeeding promote optimal maternal and child outcomes. This article is an updated evidence-based review of the "Lamaze International Care Practices That Promote Normal Birth, Care Practice #6: No Separation of Mother and Baby, With Unlimited Opportunities for Breastfeeding," published in *The Journal of Perinatal Education*, *16*(3), 2007.

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An essential practice for safe and healthy birth is to keep mothers and babies together and ensure unlimited opportunities for skin-to-skin care and breastfeeding. Mothers and babies have a physiologic need to be together during the moments, hours, and days following birth, and this time together significantly improves maternal and newborn outcomes. Childbirth educators and other health-care professionals have a responsibility to support this physiologic need through education, advocacy, and implementation of evidence-based maternity practices. Routine separation of healthy mothers and babies can be harmful and can negatively influence short- and long-term health outcomes and breastfeeding success.

This article is an updated evidence-based review of the "Lamaze International Care Practices That Promote Normal Birth, Care Practice #6: No Separation of Mother and Baby, With Unlimited Opportunities for Breastfeeding," published in The Journal of Perinatal Education, 16*(3), 2007.*

THE MOMENT OF BIRTH

"What does the baby most need at the moment of birth? Only mother," said Bergman and Bergman (2013, p. 9), a respected husband (public health physician) and wife (teacher/doula/author) team who have studied the effects of skin-to-skin care. But in most cases, health-care professionals pay little heed at the moment of birth to the Bergman and

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Bergman's findings despite significant advantages to mother and child togetherness highlighted throughout the literature.

Based on decades of evidence, the World Health Organization and United Nations Children's Fund (World Health Organization & United Nations Children's Fund, 2009) recommended that all healthy mothers and babies, regardless of feeding preference and method of birth, have uninterrupted skin-to-skin care beginning immediately after birth for at least an hour, and until after the first feeding, for breastfeeding women. Skin-to-skin care means placing dried, unclothed newborns on their mother's bare chest, with warmed light blankets or towels covering the newborn's back. All routine procedures such as maternal and newborn assessments can take place during skin-to-skin care or can be delayed until after the sensitive period immediately after birth (American Academy of Pediatrics Section on Breastfeeding, 2012; American College of Obstetrics and Gynecologists [ACOG] Committee on Obstetrics Practice, Committee on Health Care for Underserved, 2013; Sobel, Silvestre, Mantaring, Oliveros, & Nyunt-U, 2011). First impressions are important and perhaps none more so than the newborn's first moments of introduction to the world and the mother's to her child.

The sensitive period during the first hour or so after birth is significantly influenced by elevated levels of the maternal reproductive hormone, oxytocin, which crosses the placenta to her baby (Buckley, 2014). Oxytocin, which increases significantly during skin-to-skin care, promotes maternal/newborn attachment, reduces maternal and newborn stress, and helps the newborn transition to postnatal life (Buckley, 2014; Moore, Anderson, Bergman, & Dowswell, 2012).

This sensitive time, sometimes called the "magical hour," "golden hour," or "sacred hour," requires respect, protection, and support. Disrupting or delaying skin-to-skin care may suppress a newborn's innate protective behaviors, lead to behavioral disorganization, and make self-attachment and breastfeeding more difficult. Lack of skin-to-skin care and early separation also may disturb maternal–infant bonding, reduce the mother's affective response to her baby, and have a negative effect on maternal behavior. This has been shown by rougher handling of the baby during feedings, lower affective responses, and fewer maternal behaviors in response to a baby's cues at 4 days postpartum (Dumas et al., 2013), at 1 and 4 months (Moore et al., 2012), and at 1 year (Bystrova et al., 2009) compared to mothers who were not separated from their newborns.

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Newborns at Birth

If mothers are more attached to their babies when they are not routinely separated in the moments after birth, then what about the baby who is eager to meet the mother? At the moment of birth, newborns have a heightened, protective response to tactile, odor, and thermal cues (Moore et al., 2012; Takahashi, Tamakoshi, Matsushima, & Kawabe, 2011). When the newborn is placed skin-to-skin with the mother, this heightened response stimulates behaviors that help to meet the newborn's basic biological needs, activates neuroprotective mechanisms, enables early neurobehavioral self-regulation (Buckley, 2014; Widström, Lilja, Aaltomaa-Michalias, Dahllöf, & Nissen, 2011), and reduces stress (Bergman & Bergman, 2013; Bigelow, Power, MacLellan-Peters, Alex, & McDonald, 2012; Takahashi et al., 2011). Compared with newborns who did not have skin-to-skin care, newborns who had skin-to-skin care cried less; had enhanced cardio-respiratory stability, including oxygen saturation levels; more stable blood glucose levels; and, enhanced thermal regulation (Moore et al. 2012). Salivary cortisol levels (a biochemical marker for stress) significantly decreased as the duration of skin-to-skin care increased beyond 60 minutes (Takahashi et al., 2011), indicating a dose-response effect.

There are other benefits which mother and child share if they are not routinely separated in the moments after birth. The risk of neonatal hypothermia is reduced by skin-to-skin care as the maternal breast quickly adjusts in temperature to regulate her newborn's temperature, promoting thermoregulation (Bergström, Okong, & Ransjö-Arvidson, 2007;

Gabriel et al., 2010; Moore et al., 2012; Sobel et al., 2011; Takahashi et al., 2011). Immediate skin-to-skin care enables colonization of the newborn to maternal flora (vs. hospital flora) to protect against infection and promotes breastfeeding (Sobel et al., 2011).

Interrupting skin-to-skin care for early bathing increases the risk of neonatal hypothermia, removes maternal bacteria and vernix (which increases the risk of nosocomial infection), and may inhibit the crawling reflex—potentially reducing the time to effective breastfeeding latch. The benefits accrued by skin-to-skin care, including favorable temperature, beneficial flora, and early opportunity to "crawl" to the breast, all point to one of the best possible outcomes for mother and baby.

Mothers at Birth

The hormones of birth and skin-to-skin care prepare a mother to need and seek her baby at the moment of birth. Oxytocin, the hormone that causes the uterus to contract, stimulates mothering feelings after birth as a mother touches, gazes at, and breastfeeds her newborn (Buckley, 2014). More oxytocin is released as a mother holds her newborn skin-to-skin than when skin-to-skin care does not occur. A mother's brain releases beta-endorphin during skin-to-skin care. Beta-endorphin is an analgesic-like hormone that helps a mother respond to her baby, reinforce the pleasure of her interactions, and help her feel calm (Buckley, 2014).

The *Baby-Friendly Hospital Initiative*, implemented in 1998 to reduce the negative effects of some maternity practices on breastfeeding, describes 10 evidence-based steps that promote, support, and protect breastfeeding. These *Ten Steps to Successful Breastfeeding* must be implemented by maternity settings seeking "Baby-Friendly" designation (World Health Organization, UNICEF, 2009). Step 4 advises health-care professionals to help mothers implement breastfeeding within 30 minutes of birth internationally (World Health Organization, UNICEF, 2009) and within an hour of birth in the United States (Baby-Friendly USA, 2011). The interpretation of Step 4 is that all healthy mothers and babies are placed skin-to-skin immediately after birth, regardless of feeding preference, and that the mother is helped to recognize when her baby shows signs of readiness to breastfeed.

TABLE 1
Newborns' Nine Instinctive Behaviors During Skin-to-Skin Care After Birth

Stage	Name	Description
1	Birth cry	Occurs after birth as newborn's lungs expand
2	Relaxation	Exhibits relaxed hands without mouth movements
3	Awakening	Exhibits small movements of the head and shoulders
4	Activity	Exhibits mouthing, suckling, and rooting movements
5	Rest	Has periods of rest between any stage
6	Crawling	Approaches the breast with short periods of action, reaching the breast and nipple
7	Familiarization	Licks the nipple, touches and massages the breast
8	Suckling	Attaches and suckles
9	Sleep	Falls into restful sleep

Note. Adapted from "Newborn Behaviour to Locate the Breast When Skin-to-Skin: A Possible Method for Enabling Early Self-Regulation," by A. Widström, G. Lilja, P. Aaltomaa-Michalias, M. Dahllöf, and E. Nissen, 2011, *Acta Paediatrica, 100*, p. 2.

Early Skin-to-Skin Care and Breastfeeding

Immediate, uninterrupted skin-to-skin care for a minimum of an hour is among the most effective strategies in maternity settings to promote exclusive breastfeeding. Breastfeeding reflexes "awaken" during skin-to-skin care (Widström et al., 2011). Newborns exhibit a species-specific sequence of nine behaviors that result in finding and attaching to their mother's breast (see Table 1). The newborn's instinctive behavior while skin-to-skin, enhanced by high levels of oxytocin at birth, may help explain why researchers have found a relationship between early skin-to-skin care and improved breastfeeding outcomes. Babies who had early skin-to-skin care were more likely to exclusively breastfeed at hospital discharge, to be exclusively breastfed after discharge, and to breastfeed for longer durations (Bramson et al., 2010; Gabriel et al., 2010; Moore et al., 2012).

Timing and duration of early skin-to-skin care also influence breastfeeding outcomes (Bramson et al., 2010; Gabriel et al., 2010; Moore et al., 2012). Shorter intervals between birth and the start of skin-to-skin care and longer times spent skin-to-skin after birth improved breastfeeding exclusivity and duration. No data show that results vary by mode of birth (since most studies on skin to skin are on

babies born vaginally and most studies on cesarean births are QI studies.

EARLY SKIN-TO-SKIN CARE AFTER VAGINAL BIRTH AND CESAREAN SURGERY

Following vaginal birth, direct skin-to-skin care for stable mothers and babies can begin immediately, prior to cord clamping, as a newborn is placed on the mother's abdomen, dried, and covered with a blanket (Baby-Friendly USA, 2011; Sobel et al., 2011; UNICEF, 2011; World Health Organization, UNICEF, 2009). Once the cord is clamped, the newborn then can be moved to the mother's chest.

Following cesarean surgery, skin-to-skin care for stable mothers and babies can begin in the operating room (theatre) when the mother is alert and responsive (Baby-Friendly USA, 2011; UNICEF, 2011). The vast majority of mothers who undergo cesarean surgery are alert and responsive when spinal or epidural anesthetic is used. Women who experienced skin-to-skin care during a cesarean described the experience as meaningful, were not "aware" of the surgical procedure because they focused on their newborn, and reported that they would welcome the opportunity to do so again if given the opportunity (Crenshaw et al., 2012; Phillips, 2013). No evidence exists for delaying skin-to-skin care until a mother and her baby are in a recovery room or postanesthesia care unit.

The intent is immediate skin-to-skin care following vaginal birth and during cesarean surgery (Baby-Friendly USA, 2011; UNICEF, 2011; World Health Organization, UNICEF, 2009). However, the meaning of immediate is frequently debated and often interpreted to mean "within 5 minutes of birth." To be designated as a baby-friendly place of birth, 80% of new mothers and the staff who care for them must report that skin-to-skin care began immediately. The only example of when immediate is described as within 5 minutes is in the unusual circumstance that a surveyor directly observes a birth. If the surveyor observes that skin-to-skin care begins within 5 minutes, it is categorized as immediate. The unintended consequence of applying within 5 minutes to all births is that skin-to-skin care is often unnecessarily delayed for the convenience of staff to provide routine care such as assessing a healthy newborn under a radiant warmer or obtaining a birth weight. This delay occurs despite overwhelming evidence in support of immediate skin-to-skin care and the research showing the dose-response effect.

KEEPING MOTHERS AND BABIES TOGETHER BEYOND THE MOMENT OF BIRTH

The benefits of skin-to-skin care extend beyond the moment of birth. Whether in a maternity care setting or at home, the maternal and newborn physical and emotional need for each other continues. While together, the mother quickly learns her baby's needs and how best to care for, comfort, and soothe her newborn.

The interpretation of Step 7 of the Baby-Friendly Hospital Initiative informs health professionals about the evidence for keeping mothers and babies together 24 hr a day (rooming-in) to improve health outcomes (Baby-Friendly USA, 2011; UNICEF, 2011; World Health Organization, UNICEF, 2009). While together, mothers and babies have many opportunities to spend time skin-to-skin and to "practice" breastfeeding. During each opportunity to breastfeed, maternal and newborn beta-endorphin levels rise, "rewarding and reinforcing maternal and infant interactions" (Buckley, 2014). For decades, researchers have reported that mothers who room-in with their babies score higher on tests that measure mothering confidence, and babies who room-in with their mothers have more quiet sleep than those who are separated from their mothers (Keefe, 1987, 1988; Yamauchi & Yamanouchi, 1990).

Rooming-in makes breastfeeding easier. Women who room-in with their newborns make more milk, produce a copious milk supply sooner, breastfeed for longer durations, and are more likely to exclusively breastfeed compared with women who are separated from their newborns (Bystrova et al., 2009; Zenkner et al., 2013). Rooming-in appears to have a dose-response effect. Women who roomed-in with their babies were more likely to be exclusively breastfeeding at hospital discharge compared to women who had partial rooming-in (Zuppa et al., 2009). Skin-to-skin care while rooming-in reduced maternal physiologic stress and depressive feelings after hospital discharge, which may help to empower women in their role as mothers. Duration of breastfeeding in mothers who had frequent skin-to-skin contact while rooming-in was longer compared to mothers who spent less time skin-to-skin with their babies during the first 5 days after birth (Bigelow et al., 2014). Research also suggests that skin-to-skin care while rooming-in also may be an effective intervention for mothers who have breastfeeding difficulties and are therefore at risk for breastfeeding cessation (Chiu, Anderson, & Burkhammer, 2008).

Few randomized or quasi-experimental controlled trials have been conducted comparing separation of mothers and babies after birth with rooming-in (Jaafar, Lee, & Ho, 2012). The ethical concerns of conducting controlled trials, in light of the strong evidence from less rigorous studies, support keeping mothers and babies together to improve maternal efficacy, rest, and breastfeeding outcomes (Ball, Ward-Platt, Heslop, Leech, & Brown, 2006; Bystrova et al., 2009; Keefe, 1987, 1988).

UNLIMITED OPPORTUNITIES FOR BREASTFEEDING: WHY IT MATTERS

Evidence shows that keeping mothers and babies together during and after birth improves breastfeeding outcomes, and breastfeeding is the optimal method for infant and child health and for maternal health. Replacing breastmilk with infant formula has been shown to have a negative impact on both short- and long-term child and maternal health (American Academy of Pediatrics Section on Breastfeeding, 2012; ACOG Committee on Obstetrics Practice, Committee on Health Care for Underserved, 2007; American Public Health Association, 2007; U.S. Department of Health and Human Services, 2011; World Health Organization, UNICEF, 2003).

Exclusive breastfeeding for 6 months is among the most significant strategies to improve infant and child health and reduce childhood illness and mortality. Based on decades of research, increasing exclusive breastfeeding is essential to reduce preventable child death and to enhance a child's long-term health and well-being.

Children who are not optimally breastfed are at higher risk for short- and long-term illnesses and diseases such as diarrhea, lower respiratory infections, sudden infant death syndrome, Type 1 and Type 2 diabetes, obesity, elevated cholesterol, pneumonia, and leukemia (Ip et al., 2007; Ip, Chung, Raman, Trikalinos, & Lau, 2009). These risks increase substantially for preterm and late preterm infants and for infants born in underdeveloped counties. Risks associated with suboptimal breastfeeding for women include increased incidence of breast and ovarian cancer, Type 2 diabetes, retained gestational weight, metabolic syndrome, and myocardial infarction (Ip et al., 2007; Ip et al., 2009; Stuebe, 2009). Breastfeeding also may mitigate postpartum depression (Bigelow et al., 2012; Dennis & McQueen, 2009; Stuebe, 2009).

In addition to costs related to maternal and pediatric morbidity and mortality, suboptimal breastfeeding rates have significant economic costs (Bartick & Reinhold, 2010; Bartick et al., 2013). Researchers estimated at least $14.2 billion per year in pediatric and $18.3 billion in maternal health care costs could be attributed to poor breastfeeding rates (assuming a causal relationship between lactation and health).

For optimal health, breastfeeding continues after the first 6 months of life, with the addition of culturally appropriate iron-rich foods. U.S. health experts (U.S. Department of Health and Human Services, 2010) recommend that breastfeeding continue for at least 1 year and international health experts recommend at least 2 years (World Health Organization, 2010).

All health professionals have an ethical responsibility to promote, support, and protect breastfeeding and to be competent in breastfeeding care and services (United States Breastfeeding Committee, 2010). Educating women about healthy birth practices, including keeping mothers and babies together, is a significant strategy for improving breastfeeding initiation, duration, and exclusivity. Ensuring evidence-based maternity policies that facilitate "no separation" is an essential responsibility for all health professionals.

IMPLICATIONS

Everyone has a role in keeping mothers and babies together after birth. Women who have their baby in a birth center or hospital can choose a maternity setting that is Baby-Friendly or working to become Baby-Friendly. They can choose a birth attendant who supports their wishes for immediate skin-to-skin care and to be with their baby during the hours and days that follow. If cesarean surgery is medically indicated, women can discuss with the health-care team their wish to begin skin-to-skin care in the operating room. Women can communicate their decisions to their family and ask for support. Childbirth educators can discuss the evidence for keeping mothers and babies together and importance of immediate, uninterrupted skin-to-skin care and exclusive breastfeeding. Those who care for women before and during birth, including midwives, nurses, physicians, and doulas, can make sure women know about the joy and health benefits of being with their baby. They can work to eliminate routines and pro-

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cedures that interfere with a woman and her baby's physiologic need to be together.

CONCLUSIONS

What mothers and babies need most after birth is each other, with unlimited opportunities for skin-to-skin care and breastfeeding. When health professionals respect, honor, and support the physiologic need that mothers and babies have for each other after birth, they also improve the short- and long-term health outcomes for mothers and babies. Preventing separation except for compelling medical indications is an essential safe and healthy birth practice and an ethical responsibility of health-care professionals.

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