

Exclusive Breastfeeding and Duration

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Why Exclusive Breastfeeding Matters and How Exclusivity Impacts Duration

- The health benefits of breastfeeding are dose-related, with exclusive breastfeeding providing the maximum benefits for infants and mothers.
- Exclusive breastfeeding supports a unique “healthy” gut microbiota, which promotes the development of the immune system and helps protect against many diseases, including obesity.
- Exclusive breastfeeding helps Mom establish and maintain an abundant milk supply.
- Supplementing with infant formula is linked with a shorter duration of any breastfeeding.

Healthy People Breastfeeding Objectives US and Colorado Breastfeeding Rates

Increase the proportion of infants who are breastfed:	HP 2010	Nation 2015* BF Report Card	HP 2020
% Ever breastfed	75%	80.0%	81.9%
% Brfeeding @ 6 mos	50%	51.4%	60.6%
% Brfeeding @ 12 mos	25%	29.2%	34.1%
% Exclusive brfeeding @ 3 mos	40%	43.3%	46.2%
% Exclusive brfeeding @ 6 months	17%	21.9%	25.5%

* Preliminary 2012 data

Breastfeeding Recommendations

- Exclusive breastfeeding is recommended for about 6 months, with continued breastfeeding through 12 months and beyond, as solid foods are added. *AAP. Pediatrics 2012; 129:e827-e841*
- In the 2005-2007 Infant Feeding Practices Study II (IFPS II), only 32% of US mothers achieved their intended exclusive breast-feeding goal. *Perrine, et al. Pediatr. 2012; 130:54*

Disparities in Breastfeeding Practices

- In the most recent National Immunization Survey, 66.4% of black mother began breastfeeding in 2012, compared with 83% of white mothers and 82.4% of Hispanic mothers.
- Although black women consistently remain at the bottom on all breastfeeding measures, the gap between black mothers and other ethnic groups has narrowed since 2000.

McKinney, et al. *Pediatrics*. 2016; 138(2)

Examples of Breastfeeding Barriers in the U.S.

- Lack of knowledge and confidence
- Social norms and busy lifestyles
- Inadequate social/family support
- Embarrassment
- **Lactation problems**
- Employment and child care
- Barriers related to health services

■ **Maternity care practices**

■ **Clinicians**

Surgeon General's Call to Action to Support Breastfeeding, 2011.

Prenatal Breastfeeding Promotion and Preparation

The Decision to Breastfeed

Benefits / Barriers

Product / Process

We must not only promote the benefits of human milk, we must partner with expectant mothers to reduce their personal and societal breastfeeding barriers.

The Best Start 3-Step Counseling Strategy

- **Step 1. Ask an Open-Ended Q**
 - ▣ This will probably elicit a mother's particular barrier to breastfeeding.
- **Step 2. Affirm Mother's Concerns**
 - ▣ This proves you are listening and normalizes her concern.
- **Step 3. Provide Targeted Education Directed at the Mother's Specific Concerns**
 - ▣ This informs, empowers, and reassures the mother.

Optimizing Support for Breastfeeding as Part of Obstetric Practice

- The American College of Obstetricians and Gynecologists strongly encourages women to breastfeed, and obstetrical care providers should be a resource for breastfeeding women.
- The College recommends exclusive breastfeeding for the 1st 6 months of life, with continued breastfeeding (as complementary foods are introduced) through the infant's 1st yr. and beyond.

ACOG. Committee Opinion No. 658. February, 2016

Optimizing Support for Breastfeeding as Part of Obstetric Practice

- Importance of breastfeeding management skills
- Anticipatory guidance about avoiding early use of formula without a valid medical indication
- No formula marketing in the inpatient or outpatient health care settings
- Prenatal breast exam for lactation risk factors
- Endorse the *Ten Steps to Successful Breastfeeding*
- Patient education, change in hospital practices, community efforts, and supportive legislation

ACOG. Committee Opinion No. 658. February, 2016

Breastfeeding Messaging for Prenatal Clients

- "Because breastfeeding is a learned art, I encourage all expectant mothers to attend a prenatal breastfeeding class with their partner or support person."
- "Your baby will be placed skin-to-skin with you right after birth to ease her adjustment to life outside the womb and to give you and your partner uninterrupted bonding time."
- "I strongly urge you to limit the number of visitors during your hospital stay, and focus on resting and learning to breastfeed and care for your baby."

Getting Breastfeeding Right from the Start

Baby Friendly Hospital Initiative (BFHI)

www.babyfriendlyusa.org

- Launched in 1991 as a joint initiative of WHO and UNICEF to ensure that maternity facilities optimally support and protect breastfeeding.
- Optimal breastfeeding maternity practices are summarized in the BFHI's *Ten Steps to Successful Breastfeeding*.
- Over 20,000 facilities in > 150 countries have been awarded Baby-Friendly status (370, as of 9/12/16, in 49 US states and Wash. DC = 18.0% of annual US births). Furthermore, > 1100 US hospitals are now on the path to becoming Baby-Friendly!

BFHI Ten Steps to Successful Breastfeeding

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in the skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within one hour of birth. WHO 2009: Place babies in skin-to-skin contact with their mothers immediately following birth for at least an hour.

BFHI Ten Steps to Successful Breastfeeding

5. Show mothers how to breastfeed, and how to maintain lactation even if they are separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated. (*Formula used in hospitals should be purchased by the facility and not accepted free or promoted in any way. Formula discharge bags may not be distributed*).
7. Practice rooming-in – allow mothers and infants to remain together – 24 hours a day.

BFHI Ten Steps to Successful Breastfeeding

8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

BFHI Step 3. Inform all pregnant women about the benefits and management of breastfeeding.

- All prenatal providers, WIC, and other community partners need to prepare expectant mothers for an optimal hospital start with breastfeeding.
- Unrealistic expectations about the early postpartum period—including newborn crying, waking, and feeding behaviors and mothers' own need for rest—contribute to the early use of formula.

Tender J. JHL 2009;25(1):11-17

BFHI Step 4. Babies are breastfed in the first hour. Immediate mother-infant skin-to-skin contact.

- ❑ The longer a mother experiences early skin-to-skin contact (SSC) during the first 3 hours following birth, the more likely she will breastfeed exclusively during her maternity hospitalization.
- ❑ SSC should occur as early, as often, and as long as possible during the entire postpartum stay.

L. Bramson, et al. *J Hum Lact.* 2010; 26(2):130-137

BFHI Step # 6. Give newborn infants no food or drink other than breast milk, unless *medically* indicated.

- ❑ Infants and mothers achieve the maximum health benefits of breastfeeding
- ❑ Promotes the establishment of an abundant supply
- ❑ Strongly associated with mothers reaching their exclusive breastfeeding goals
- ❑ Establishes frequent cue-based feeding patterns that mothers need to continue at home
- ❑ Performing early hand expression of colostrum and "hands-on pumping" of transitional and mature milk can significantly increase milk production.

J. Morton, et al *J of Perinatology.* 2009. 29:757-764

BFHI Step #7. Practice rooming-in (23 out of 24 hours).

- ❑ Mothers have frequent opportunities to hold baby SSC, recognize infant feeding cues, and practice latch-on.
- ❑ Mothers gain competence and confidence in providing all newborn care themselves.
- ❑ Encourage mothers to limit visitors, rest during "Quiet Time," and ask LCs for help.

BFHI Step #9. Give no artificial teats or pacifiers to breastfeeding infants

- ❑ Overusing a pacifier in the early weeks may interfere with learning to latch, decrease breastfeeding frequency, limit milk production, and prevent the baby from drinking enough breast milk.
- ❑ Frequent early pacifier use may be a marker for troubled feeding or a lower maternal commitment to unrestricted breastfeeding.
- ❑ A pacifier *may be used* for a painful procedure.

BFHI Step #10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

- ❑ A comprehensive, current list of community resources, including WIC resources, should be made available to all breastfeeding women.
- ❑ Providing both group support, as well as individualized help, improves exclusive breastfeeding outcomes.
- ❑ Ensures a seamless transition of care from hospital to the community

Establishing an Abundant Milk Supply

Why Mothers Stop Breastfeeding

- In the IFPS II, the top reasons mothers cited for discontinuing breastfeeding in the first two months after the child's birth were: 1) "Baby had trouble sucking and latching on;" 2) "Breastmilk alone didn't satisfy my baby;" and 3) "I didn't have enough milk."
- Concerns about their milk supply and their baby's dissatisfaction with breast milk alone consistently were cited by mothers as important reasons for weaning, regardless of infant age.

Li, Fein, Chen, Grummer-Strawn. *Pediatr*.122:S69-S76,2008

What Do We Know About Milk Production Between Birth and 6 Months Postpartum?

- For mothers of both term and preterm infants, the average amount of milk at days 6 and 7 is highly associated with week 2 milk volume and moderately associated with week 6 milk volume.
A good start matters! Hill, et al. *J Hum Lact* 2005; 21(1):22-30.
- Milk production is relatively constant between 1 and 6 months of lactation.
- Exclusively breastfed infants drink about 788 g (26 - 28 oz.) of breast milk daily between 1 and 6 months (with a wide range of normal). Nighttime and morning feedings are larger than daytime and evening feedings. Kent, et al. *Pediatr* 2006; 117:e387-e395.

Endocrine Control of Lactation Neuroendocrine Reflex Arcs

- Milk Production - Prolactin is a key lactogenic hormone, stimulating initial alveolar milk production. Prolactin surges with each feeding, and remains elevated throughout lactation.
- Milk Ejection Reflex (MER) - Oxytocin contracts the myoepithelial cells surrounding the alveolar glands, forcing milk from the alveoli into the ducts where it is removed by the infant.
- The volume consumed at a feeding is related to the number of MERs.

Autocrine Control of Lactation The influence of local factors acting in the breast

- It is not just the level of maternal hormones, but the efficiency of milk removal, that regulates the volume of milk produced in each breast.
- If a woman nurses from one breast only, the other unsuckled breast soon stops producing milk, even though both are exposed to lactogenic hormones.
- Thus, the amount of milk produced in each breast over the long term largely depends on how often and how thoroughly milk is removed by active nursing or pumping.

Hale & Hartmann. *Textbook of Lactation*. Hale Publish., 2007, pps. 99-101
Kent. *J Midwifery Womens Health* 2007;52:564-570

The Role of Milk Removal in Ongoing Production

- "I lost my milk!" The amount of milk a mother continues to produce largely depends on the amount that is removed from the breasts.
- Client education to help mothers continue to produce an abundant milk supply:
"Overly full breasts slow down milk production."
"When your breasts are well drained, your rate of milk production increases."

Kent. *J Midwifery Womens Health*. 2007;52:564-570

Breast Storage Capacity

- Women's breasts vary widely in their capacity to store milk. Some women's breasts can store a large volume of milk before breast fullness signals the milk glands to slow milk production.
- Other women have a smaller breast storage capacity and must remove milk from their breasts at closer intervals in order to maintain their rate of milk production.
- Once a mother's milk supply is established, the ideal frequency of milk removal (by feeding or expressing) to maintain her supply may depend on the storage capacity of the mother's breasts.

Identify Newborns at Risk for Ineffective Breastfeeding

Examples of Newborns At Risk for Inadequate Breastfeeding

- Small (< 6 lbs.), IUGR, late-preterm (34, 35, and 36 weeks) and early-term (37 and 38 weeks) infants
- Twins or higher multiples (often late-preterm)
- Infants with neuromotor problems
- Infants with medical problems, such as cardiac, respiratory, or infectious illnesses or jaundice
- Infants with oral abnormalities, such as cleft palate or severe micrognathia (receded chin)
- Infants with minor oral variations that can affect feeding, i.e. tongue-tie or high-arched palate
- Infants with latch-on problems

“Prevention Pumping” or “Insurance Pumping”

- Late-preterm and other at-risk newborns may take weeks to learn to nurse effectively.
- Whenever an infant nurses ineffectively, both infant well-being and maternal milk supply can be negatively affected.
- “Prevention pumping”— removing milk remaining after the infant nurses—will protect a mother’s milk supply until her infant is able to drain her breasts well.
- Breastfeeding problems are easier to overcome when the mother has a generous milk supply and the infant is thriving.

“Triple Feeding” for At-Risk Newborns

- Breastfeed (may need to limit to only a few mins, so baby is able to take essential supplemental milk). Start feeding as soon as the infant shows wakeful signs.
- Pump both breasts for 10 – 15 mins. after nursing, using a highly effective, double electric breast pump.
- Supplement the infant with expressed milk, as needed. Use additional formula as required.
- To allow Mom more sleep at night, a helper can feed the baby previously expressed milk by bottle, while Mom pumps and returns to sleep.
- As baby breastfeeds more effectively, s/he can receive fewer and smaller bottle feedings of pumped milk.

Get Help Right Away for Early Breastfeeding Problems

Early Assessment of Breastfeeding Mother’s Breasts

- Milk has come in (Lactogenesis II) by 4 days postpartum and is flowing easily.
- Mother’s breasts feel full before feedings and softer afterwards.
- Infant latches effectively and comfortably to both breasts, sucks actively, & swallows often.
- Any nipple tenderness that was present has started to decrease by day 5. No nipple wounds are visible.

Early Assessment of Breastfeeding Initial Infant Weight Loss & Onset of Weight Gain

- **Magnitude:** Most infants will not lose more than 8% - 10% of birth weight. Smaller infants typically lose less. Evaluate infant weight loss > 7%.
- **Duration:** Initial weight loss stops after mother's milk comes in. Evaluate continued weight loss by day 5.
- **Onset of wt. gain:** By 4 - 5 days, expect baby to start gaining about 1 oz./day for the first several months.
- **Return to birth weight:** Expect baby to be above birth weight by 10 - 14 days and to double her birth weight by 4 ½ months.

Early Assessment of Breastfeeding Newborn Feeding Routines

- Feed 8 to 12 times each 24 hours (whenever baby gives cues)—typically for 10 - 15 minutes per breast.
 - Expect to nurse every 1 ½ to 3 hrs., with a single interval of no longer than 4-5 hrs. in a 24-hr period.
 - Expect periods of more frequent “cluster feeds,” especially in the evenings.
- Offer both breasts at each feeding; begin on alternate sides to ensure equal drainage. Switch sides when baby's sucking/swallowing slow down.
- Avoid non-nutritive sucking on a pacifier; wake non-demanding babies to nurse.

Early Assessment of Breastfeeding Newborn Stooling Pattern

“Neifert's Rule of 4” (after mother's milk comes in)

- Breastfed newborns can be expected to pass 4 or more loose, yellow “milk” stools daily between about 4 days and 4 weeks.
- Transition stools, infrequent, or scant volume of stools suggest inadequate milk intake.
- After 4 weeks of age, expect baby's stooling frequency gradually to diminish.

Early Assessment of Breastfeeding Newborn Urination Pattern

- After mother's milk comes in, breastfed newborns should pass colorless urine at least 6 to 8 times daily (typically after every feeding).
- The presence of “brick dust” (urate crystals) in the diaper after mother's milk has come in, scant volume of urine, or dark yellow urine suggest inadequate milk intake.

Minimum Number of Voids and Stools for Exclusively Breastfed Infants by Age in Days

	Day 1	Day 2	Day 3	Day 4
Wet Diapers per Day	1	2 +	3 +	5-6 +
Stools per Day	1	2	3	4
Type of Stool	Meconium	Meconium to Greenish and Looser	Greenish Brown Transitional	Yellow, seedy, “milk” stool

Early Assessment of Breastfeeding Behavior During and After Feedings

- Infant gives regular feeding cues; baby latches effectively; rhythmic sucking; frequent swallowing is heard.
- Baby acts satisfied after nursing and sleeps contentedly between feedings.
- Infant may **not** be getting enough milk if: Seldom gives feeding cues; has difficulty latching or falls asleep shortly after latching; persistent crying or excessive need for pacifier after nursing; either very long (>45 mins.) or very brief (< 5 mins.) nursing sessions suggest a problem with milk transfer.

Seek Help Right Away for Early Breastfeeding Problems

- ❑ Early lactation problems can prevent the establishment of an abundant milk supply and may quickly become complicated by inadequate infant weight gain.
- ❑ Getting help right away is far preferable to a passive “wait-and-see” approach, hoping that the situation self-corrects.
- ❑ Mothers who are still concerned about infant latch by the end of the 1st week or their milk supply by the end of the 2nd week are at increased risk of early weaning.

Wagner,
Chantry, Dewey, Nommsen-Rivers. *Pediatr.* 2013;132:3865-3875.

Keeping Breastfeeding Going

Keep Mothers and Babies Together

- ❑ Keeping mothers and infants together (*mamatoto*—a Swahili word for the mother-baby unit) is the best way to encourage unrestricted breastfeeding.
- ❑ Regularly removing milk by frequent breast-feeding (or expressing milk if Mom is separated from her baby) helps ensure that mothers continue to produce an abundant milk supply throughout their baby's 1st year.
- ❑ Knowing how to breastfeed discreetly in front of others is very empowering.

Infant Sleeping Through the Night

- For many breastfeeding mothers, going too long at night without draining their breasts results in a decline in blood prolactin level, a decrease in milk production, and the return of their menses.
- Once her baby starts to sleep through the night, a mother can express her milk before she retires to shorten the nighttime interval when which her breasts do not get drained.
- Mom also can express remaining milk from both breasts after the 1st morning feeding to ensure that her breasts are well drained after a long night interval.

Prevent the Use of Formula by Expressing and Storing Mom's Own Milk

- ❑ Many WIC breastfeeding clients request formula “just in case” they might need it.
- ❑ Expressing and storing surplus milk—especially after morning feedings when the breasts are fuller—helps maintain a plentiful supply.
- ❑ Frozen stores of a mother's expressed milk serve as a visual reminder that she has more than enough for her baby and doesn't need any “just-in-case” formula.

Delay the Introduction of Complementary Foods

- ❑ 40% of infants in a national survey (2005-2007) had consumed infant cereal by 4 months, and 17% had been fed fruit or vegetable products.
- ❑ Compared to infants who were not fed solid foods by 4 months, those who were fed solids were more likely to have discontinued breast-feeding at 6 months (70% vs 34%) and to have been fed fatty or sugary foods by 12 months (75% vs 62%).

Pediatr. 2008;122:S36-S42

Prevalence and Reasons for the Early Introduction of Solid Foods to Breastfed Infants

Among mothers of breastfed infants, 24.3% reported starting solid foods before 4 months of age.

- 55.5% of these mothers said they were advised to start solids by a health professional.
- Nearly 20% cited advice by friends or relatives.
- 46.4% said they started solids to help their baby sleep longer at night.
- More than 20% thought their baby was nursing too much or that they didn't have enough milk.

Pediatr 2013;131(4):e1108-31114

Enlist Ongoing Support

Loving Support Makes Breastfeeding Work

- Partners, extended family members, friends
- Lactation consultants & other health care providers
- WIC staff, including Breastfeeding Peer Counselors
- Visiting nurses
- La Leche League and hospital-based groups
- Breastfeeding Cafés and other community support
- Child care providers & workplace lactation support
- Online mommy blogs

The most effective support is in-person, ongoing, and occurring at regular visits.

Renfrew, et al. Cochrane Database Syst Rev 2012;(5):CD001141

How Significant Others Can Support Their Breastfeeding Partners

- Convey that breastfeeding is a high priority.
- Provide emotional support and encouragement; remind Mom to seek expert help when needed.
- Spend extra time with older children and perform infant care (burping, diapering, bathing, rocking).
- Protect Mom from excessive visitors.
- Perform housekeeping duties, including meal preparation, dishes, etc.
- Foster a unique bond with the infant.

Support from Health Professionals

- Give women the information they need to make an informed feeding decision.
- Congratulate women on their choice to breastfeed their baby.
- Share your own experience with breastfeeding and your strong belief in its value.
- Acknowledge mothers' commitment to stick with breastfeeding: "Good for you." "I'm proud of you." "You are giving your baby the best."
- Invite mothers to describe their commitment to breastfeeding in their own words: "What's the best part of breastfeeding for you?"

Support for Employed Mothers

- An optimal start breastfeeding
- An abundant supply and a thriving baby
- An adequate maternity leave
- A confidence-boosting stockpile of EBM
- A breastfeeding-friendly child care provider

Workplace Lactation Program:

S = Support: supervisors, colleagues, and family

T = Time: Adequate breaks to pump or breastfeed

E = Education: information and access to professional lactation support

P = Place: a private space to breastfeed or express milk

Preparation for Breastfeeding and Working

- While on maternity leave, begin early to pump after 1 or 2 morning feedings, when the breasts usually are fuller, to establish a plentiful milk supply and to become comfortable with milk expression.
- Stockpile frozen stores of milk as a buffer against dwindling milk production after returning to work.
- Tailor a plan for how often to pump at work, based on the woman's breast storage capacity, her baby's age, and usual feeding frequency.

The Magic Number and Long-Term Milk Production

- The Magic Number represents a teaching tool that helps breastfeeding mothers who are partially or fully expressing their milk to calculate the number of times each day they need to remove milk by feeding and/or expressing in order to maintain their milk production.
- Before returning to work, a fully breastfeeding mother should count how often her baby nurses each 24 hours. This daily total represents her **Magic Number**, or how often she needs to remove milk from her breasts each day.

Mohrbacher. *Clinical Lactation* 2001; 2(1):15-18

A Sample Plan for Achieving Mom's "Magic Number" for Daily Milk Removal (8 times)

- 5:30 a.m. Breastfeed at home (ideally pump after the 1st feeding, due to long night interval)
- 7:30 a.m. Breastfeed or pump at Child Care site
- 10:00 a.m. Pump at workplace
- 12:30 p.m. Pump at workplace
- 3:00 p.m. Pump at workplace
- 5:30 p.m. Breastfeed at Child Care Center site
- 8:00 p.m. Breastfeed at home
- 10:30 p.m. Pump before retiring at night