

# First Steps Nutrition Modules

## Module 8 – Breastfeeding Assessment and Support

### ***Introduction***

Over the past 25 years, research has repeatedly demonstrated the importance of breastmilk for infants. This is reflected in national and international initiatives to promote and support breastfeeding, including the Healthy People objectives, and recommendations from the Centers for Disease Control and Prevention (CDC), and the World Health Organization (WHO).

The American Academy of Pediatrics calls breastfeeding “the ideal method of feeding and nurturing infants” and recommends human milk for all infants for whom breastfeeding is not specifically contraindicated. (AAP, 2005) In Washington State over 90% of women initiated breastfeeding, according to 2004 Prams Data. The breastfeeding initiation rate was 86% in the Washington State WIC population in 2006. These changes are a result of increased breastfeeding support and promotion activities, improved maternity ward practices and increased social support. Much more work is needed to increase the number of women exclusively breastfeeding their infants for six months and increasing breastfeeding duration rates. Exclusive breastfeeding is defined as the practice of giving only breastmilk and drops of vitamins or medicines to infants.

The Healthy People document identifies the following as necessary to continue to increase breastfeeding rates in the US:

- Education of new mothers and their partners
- Education of health providers
- Changes in routine maternity ward practices
- Social support, including support from employers
- Greater media portrayal of breastfeeding as the normal method of infant feeding

Many of these activities, especially related to education and support, can be carried out by nutrition professionals. This module is intended to provide the dietitian with an overview of skills and tools needed to help promote and support women breastfeeding, to identify common problems, and to offer solutions.

This is not an in-depth training and providers should seek further training on breastfeeding if they plan to take a more active role in working directly with women on resolving breastfeeding problems. Some training resources are located at the end of this module.

*Estimated time to complete this module: 60 minutes.*

## **Learning Objectives**

Participants will be able to:

- List the benefits of breastfeeding to mother and child
- Identify potential barriers to breastfeeding
- Describe normal lactation
- Identify common problems with lactation and describe potential solutions
- Identify conditions where breastfeeding is contraindicated
- Refer clients to appropriate members of the MSS team, WIC and/or community providers, as needed
- Offer information and support to women returning to work or school

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## Why Breastfeed?

From the IOM's *Nutrition Services in Perinatal Care*, 2<sup>nd</sup> edition:

*“Exclusive breastfeeding is the preferred method of feeding normal infants throughout their first 4-6 months. Breastfeeding provides the infant with a clean supply of milk, in an amount that is responsive to the infant’s needs, and in a manner that promotes optimal interaction between the mother and infant. Human milk provides all essential nutrients in a form that is easily digested and absorbed and in amounts that allow normal growth and development. Moreover, human milk provides the infant with immunoglobulins and many other antiinfective substances, as well as anti-inflammatory substances, hormones, enzymes, and growth factors that appear to have important health-promoting effects.”*  
(IOM, 1992)

### Benefits

Some of the benefits of breastfeeding are listed below: (James, 2009; Ip 2007, AAP 2005)

#### Women:

- **Increased spacing between pregnancies** – delays the resumption of ovulation
- **Reduction of disease** – women who breastfeed have lower rates of ovarian cancer, premenopausal breast cancer, hip fractures, osteoporosis, and type 2 diabetes (CDC)
- **Maternal weight loss** – increased energy expenditure, which may lead to faster return to pre-pregnancy weight
- **Maternal well being** – breastfeeding is associated with a decrease in depressive symptoms
- **Economic** – money saved from not buying formula and reduced health care costs for the infant

#### Infants:

- **Optimal nutrition for infant** – standard by which all others are measured
- **Protection against infectious diseases**, including meningitis, gastroenteritis, otitis media, pneumonia, botulism, urinary tract infections, and necrotizing enterocolitis
- **Associated with reduced rates of some chronic diseases** - including type 1 diabetes, type 2 diabetes, obesity Crohn’s disease, ulcerative colitis, lymphoma, leukemia, asthma, and other allergic diseases
- **Reduced risk of sudden infant death syndrome** in the first year of life
- Associated with **increased IQ** and improved school performance
- Associated with **decreased hospitalizations**, medical office visits, and medications use and thus, decreased health care costs (about \$200 less for a breastfed infant than formula-fed) (Ball and Wright, 1999)

- **Analgesia to infants** during painful procedures (e.g., heel-stick for newborn screening)
- **Promotes self-regulation of intake** (compared with parents who bottle-feed, mothers who breastfeed appear to allow the infant to take an active role in controlling intake, possibly promoting feeding practices that can foster better self-regulation of energy intake as the child grows up)
- **Exposes the infant to a variety of flavors** and has an influence on taste preferences and food choices (exposure to “healthy” flavors may improve food acceptance after weaning)

The AAP recommends that health care providers provide parents with complete, current information on the benefits and techniques of breastfeeding. (AAP, 2005)



Figure: Breastfeeding

The MSS program promotes breastfeeding and supports women with inadequate milk transfer/insufficient suck because, “breastfeeding is an important public health strategy for improving infant and child morbidity and mortality and, improving maternal morbidity and helping to control health care cost.”(James, 2009)

***Read more about risks of not breastfeeding.***

*Among focus group participants (mothers who did and did not breastfeed), understanding the potential risks associated with not breastfeeding did not evoke guilt, but led to more informed decision-making. (Merewood and Hening, 2004)*

*Some of the risks associated with not breastfeeding include:*

- *Increased risk for infectious diseases (for example, otitis media, diarrhea, and respiratory illnesses) and more visits to the pediatrician*
- *Increased rates of hospitalizations*

- *Higher postneonatal infant mortality rate*
- *Possible increased risk of sudden infant death syndrome (SIDS), higher rates of type 1 and type 2 diabetes, lymphoma, leukemia, Hodgkin's disease, overweight, elevated cholesterol, asthma. (Ip, 2007)*

## **Barriers**

The AAP has identified the following as barriers to the initiation and continuation of breastfeeding. Some of these issues can be addressed by the dietitian in the community setting and are addressed in more detail later in this module.

- Insufficient prenatal education about breastfeeding
- Disruptive hospital policies practices
- Early hospital discharge in some populations
- Lack of timely routine follow-up care and postpartum home health visits
- Maternal employment (especially in the absence of workplace facilities and support for breastfeeding)
- Lack of family and broad societal support
- Media portrayal of bottle feeding as normative
- Commercial promotion of infant formula through distribution of hospital discharge packs, coupons for free or discounted formula, and some television and general magazine advertising
- Misinformation
- Lack of guidance and encouragement from health care professionals

Breastfeeding is contraindicated for a very small number of infants. See Module 6.

## **Normal Lactation**

To support successfully breastfeeding, it is helpful for the clinician to understand the physiology behind normal lactation.

Some of the structures involved in lactation include (See Figure 1 below):

- **Alveoli** are a group of small sacks where milk is made. Each sack is surrounded by tiny blood vessels that draw nutrients from the bloodstream to make milk. Smooth muscle cells contract to squeeze the milk into the ducts. Clusters of alveoli are called **lobes**.
- **Ducts** (~4-18 in each nipple) are the branch-like tubes that carry milk from the lobes to the small openings, or pores, on the nipple and out to the baby
- **Nipple** is the protruding part of the breast. It becomes firmer upon stimulation, which helps the baby suckle
- **Montgomery glands** are small, pimple-like bumps in the areola around the nipple. These glands provide lubrication and antibacterial protection for the nipple and areola. The fluid they produce smells like amniotic fluid. Baby is attracted to this familiar scent.

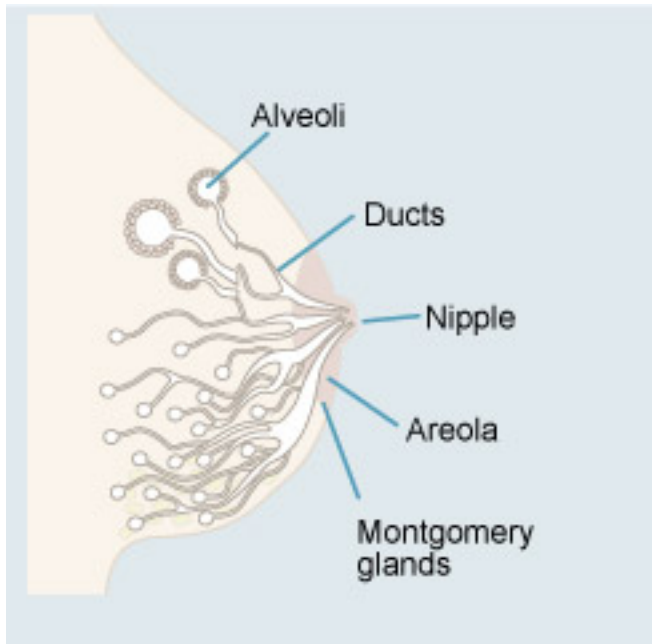


Figure 1

Two of the hormones involved in lactation include:

- **Prolactin** – a hormone secreted by the anterior pituitary, it promotes milk production by the alveoli. When the infant sucks on the nipple, it stimulates the hypothalamus, which stimulates the release of prolactin. It also stimulates the production of progesterone and estrogen.
- **Oxytocin** (or pitocin) – a hormone made in the hypothalamus and secreted by the posterior pituitary. It stimulates uterine contractions and the “let-down” reflex. Its release can be inhibited by stress (e.g., anxiety, distraction). Oxytocin also lowers heart rate, blood pressure, releases insulin and cholecystokinin, and promotes social behavior.

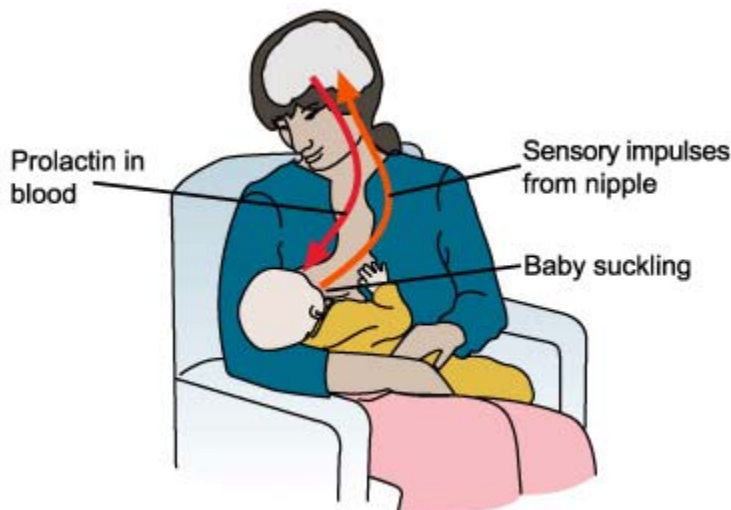


Figure 2

Changes in circulating hormones result in profound changes in the growth of the lobes, ducts and alveoli during pregnancy.

- During the first trimester there is rapid growth and branching of the duct system into the adipose tissue.
- During the second trimester the lobes and alveoli grow. Milk production actually begins during this time, but is inhibited by hormones (including progesterone and estrogen) and prolactin-inhibiting factor.
- During the third trimester, structures further develop as milk-producing cells enlarge and adipose tissue appears to diminish.
- After delivery of the placenta, plasma progesterone levels fall and prolactin levels rise to levels that promote milk secretion. A small amount of colostrum is produced for the first 2 or 3 days of lactation. This small amount of milk is sufficient to fully nourish the newborn.
- About 72 hours after birth, the “milk comes in” and full lactation begins.

The “let-down” reflex (or “milk ejection”) is a neuro-hormonal mechanism. Release of oxytocin is stimulated primarily by sucking on the nipple. Oxytocin causes cells around the alveoli to contract, pushing the milk along the ducts and out to the baby. The let-down reflex can also be triggered by thoughts or sounds of the infant, or by environmental and emotional factors, including embarrassment, or stress. Let-down is often signaled by:

- Milk dripping from the breasts before the baby starts nursing
- Milk dripping from the breast that is not being nursed
- Uterine contractions during nursing
- Tingling sensations in the breast

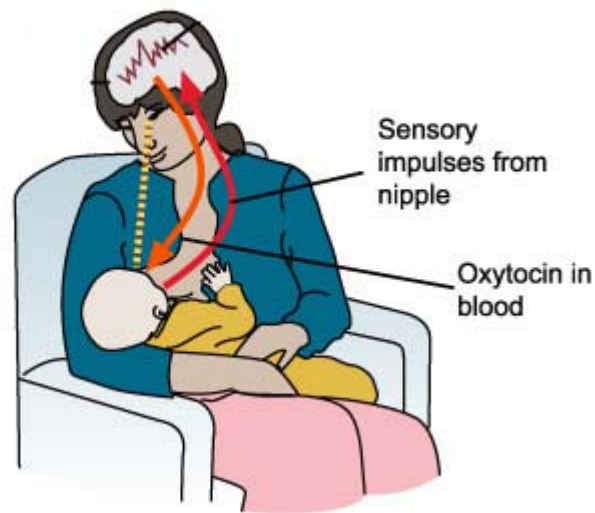


Figure 3

Estrogen-progestin contraceptives taken in the immediate postpartum period may inhibit lactation. (Some dose-related decreases in the quantity of milk produced have been seen with extended use.) Providers should work with clients to determine what birth control method would work best for the breastfeeding women. For more information on the use of birth control while breastfeeding visit the Le Leche League website at <http://www.llli.org/ba/Nov01.html>

### Initiating Lactation

Breastfeeding is most successful when started within one hour of birth. Guidelines from the World Health Organization recognize this and call for “rooming-in” of mother and infant during the recovery and postpartum period, among other things. While the community dietitian will not be able to directly affect hospital policies, information about practices to promote successful breastfeeding initiation can be provided to clients.

Other recommendations and guidelines for successful breastfeeding initiation are summarized below (AAP, 2005; Story, 2002):

- Provide education to both parents before and after the infant is born. The father's support and encouragement can be very helpful.
- Avoid medications and procedures that may change the infant's alertness and feeding behaviors or that may interfere with breastfeeding.
- Breastfeeding is most successful when it is started within the first hour after birth. Healthy infants should be placed and remain in direct skin-to-skin contact with their mothers immediately after delivery until the first feeding is accomplished. Skin-to-skin is when the infant wearing only a diaper, is placed face down on the bare chest of the mother.
- Do not give supplements (water, glucose water, formula, and other fluids) to breastfeeding newborn infants unless a medical indication exists. Adding supplements can harm breastmilk production, especially in the first month of life.
- For some infants, early pacifier use may interfere with establishment of good breastfeeding practices. Pacifier use for nonnutritive sucking and oral training of premature infants and other special care infants is not contraindicated.
- Mothers should breastfeed at least 8 to 12 times every 24 hours during the early weeks, whenever the infant shows early signs of hunger. Signs, such as increased alertness, physical activity, mouthing, or rooting are cues the baby uses for communicating to the mother. Offer both breasts at each feeding for as long a period as the infant remains at the breast. At each feed the first breast offered should be alternated so that both breasts receive equal stimulation and draining.
- Positioning and latching-on require some initial experimentation. A lactation expert can often identify problems in positioning and latching-on that can be easily corrected before unnecessary pain and nipple injury occur. See this website: [http://www.breastfeeding.com/helpme/answer\\_latching\\_on.html](http://www.breastfeeding.com/helpme/answer_latching_on.html) for more information.
- Formal evaluation of breastfeeding, including observation of position, latch, and milk transfer, should be made by trained caregivers at least twice daily in the hospital after birth. The mother may be asked to record the time and duration of each breastfeeding, as well as urine and stool output during the early days of breastfeeding. Problems identified in the hospital should be addressed at that time, and a documented plan for management should be clearly communicated to both parents and to the medical home.
- All breastfeeding newborn infants should be seen by a pediatrician or other knowledgeable and experienced health care professional at 3 to 5 days of age. This

visit should include infant weight; physical examination, especially for jaundice and hydration; maternal history of breast problems (painful feedings, engorgement); infant elimination patterns; and a formal, observed evaluation of breastfeeding, including position, latch, and milk transfer.

- Begin 400 IU/day of vitamin D for all breastfeeding infants. In 2008 the AAP recommended that all infants, children, and adolescents should receive at least 400 IU vitamin D daily (from a supplement or fortified formula), beginning in the first few days of life. (Wagner et al, 2008)
- Breastfeeding infants should have a second ambulatory visit at 2 to 3 weeks of age so that the health care professional can monitor weight gain and provide additional support and encouragement.
- Home visits by lactation consultants, nurses, dietitians, and/or physicians trained in breastfeeding can be very helpful in evaluating and correcting breastfeeding problems. Peer support groups (e.g., La Leche League, WIC) are also helpful throughout infancy, especially when the mother is initiating breastfeeding and adapting to her new infant.

## **Continuing Lactation**

The most effective means of maintaining lactation is continued removal of milk from the breasts. In the absence of the baby, milk expression (either manual or with a breast pump) is recommended to maintain breastmilk production, or to increase production. In general the lactation process is best maintained through a “feeding on cue” approach.

The AAP’s policy statement on breastfeeding includes the following guidelines related to promoting the continuation of breastfeeding:

- The mother should be encouraged to put her infant to breast at the earliest signs of hunger (e.g., mouthing motions, hand-to-mouth movements, wide-eyed eagerness, cooing); crying is a late sign of hunger, and the infant will usually need to be calmed (Story, 2002; AAP, 2005)
- Mothers should breastfeed frequently (8 to 12 times every 24 hours), especially during the early weeks, and the infant allowed to feed at both breasts during each feeding session; frequent breastfeeding and complete “emptying” of both breasts will help prevent engorgement. Not all feedings will last the same length of time; as an infant matures the frequency of breastfeeding will decrease. (AAP, 2005; Story, 2002) If an infant does not show signs of hunger after the first breast is offered, the other breast should be offered at the beginning of the next feeding.
- In the early weeks after birth, infants should be aroused to feed if 4 hours have elapsed since the beginning of the last feeding; after breastfeeding is well-established, the frequency may decline to approximately 8 times per 24 hours, but the infant may

increase the frequency again with growth spurts or when an increase in milk volume is desired (AAP, 2005)

- The adequacy of the infant's intake can be evaluated by an experienced health care professional: 1) weight – loss of no more than 7% of birthweight by 2-3 days after discharge from the hospital, and 2) diapers – 5 or more wet diapers and 3 or 4 stools per day by 5 to 7 days of age) (Story, 2002; AAP, 2005)
- Mixed feeding (i.e., introducing infant formula in addition to breastmilk) should be discouraged during the early weeks of breastfeeding because formula can interfere with the establishment of a good breastmilk supply.
- Exclusive breastfeeding is sufficient to support optimal growth and development for approximately the first 6 months of life and provides continuing protection against diarrhea and respiratory tract infection. Breastfeeding should be continued for at least the first year of life and beyond for as long as mutually desired by mother and child. There is no upper limit to the duration of breastfeeding and no evidence of psychologic or developmental harm from breastfeeding into the third year of life or longer. The worldwide average age of weaning is 4 years.
- Complementary foods rich in iron should be introduced gradually beginning around 6 months of age. (See Module 6). The AAP policy committee recommends baby food meats as a first food for breastfeeding infants. (Watcher, 2009) Some infants (e.g., those born preterm, with low birthweights, or with hematologic disorders) generally require iron supplementation before 6 months of age. Iron may be administered while continuing exclusive breastfeeding. Introduction of complementary feedings before 6 months of age generally does not increase rate of growth and only substitutes foods that lack the protective components of human milk.
- During the first 6 months of age, even in hot climates, water and juice are unnecessary for breastfed infants and may introduce contaminants or allergens.
- Mother and infant should sleep in proximity to each other to facilitate breastfeeding.
- Problems (including nipple pain and cracking and breast engorgement) should be addressed to ensure that breastfeeding is successful.
- For mothers returning to work or school, breastfeeding can be effectively maintained by pumping about every 4 hours. This topic is covered in more detail later in this module.

## ***Breastfeeding Promotion and Support***

### **Strategies for Supporting Initiation of and Continuation of Breastfeeding**

From the Washington State WIC Nutrition Program:

*Women who are confident about breastfeeding are more likely to meet their breastfeeding goals. You play an important role in providing women the information, encouragement and support they need to successfully breastfeed.*

In addition to providing support about issues related to breastfeeding, the clinician can help to facilitate a discussion about making the decision to breastfeed. The following strategies may be useful during this discussion:

- Ask open-ended questions
- Affirm the mother's feelings
- Offer information related to her specific concerns
- Offer contact information for resources (individuals or groups)

During this discussion, the clinician should be prepared to answer questions (or to know where to refer a client who has questions) about breastfeeding. These questions may include:

- How will I know if baby is getting enough?
- Does it hurt?
- How long should I breastfeed?
- What if the baby gets hungry in public?
- What about sex?



Breastfeeding is unique for every woman, and decisions about breastfeeding are based on a variety of factors, including societal, cultural, family, and economic influences. Identifying and addressing the concerns of the individual woman has been shown to

increase breastfeeding rates, among a primarily low-income population. (Ryser, 2004)  
The “Best Start” breastfeeding education program includes a 3-step approach:

1. Ask open-ended questions about the client’s perceptions of breastfeeding. An example of an open-ended question would be “What questions do you have about breastfeeding?” A closed-ended question such as “Are you going to breast- or bottle-feed?” does not give you the opportunity to correct any myths or misconceptions she may have.
2. Affirm the client’s concerns and reassure her that her feelings are normal. For example, if the woman expresses concerns about not being able to make enough milk or that breastfeeding will be painful, acknowledgements could include, “I hear that a lot,” or “Many women have concerns about that.”
3. Target educational messages to address the woman’s specific concerns. If the concern is about inadequate milk supply, your response could include a statement such as, “Most women make plenty of milk for their babies.” You could then ask further questions about why that is a concern for her.

## **Returning to Work and School**

In 1994, just under 10% of mothers returned to work within a week of birth, 60% before 2 months, and 90% before 4 months. (Galtry, 1997; Visness and Kennedy, 1997) Most women return to work while their infants are young.

Employment affects the number of women who continue to breastfeed at 6 months and has been identified as one of the major barriers to the continuation of breastfeeding. Some of the reasons for this include the following:

- Lack of flexibility in work schedule, making regular pumping difficult
- Lack of access to a private, clean area in which to pump and/or store expressed breastmilk
- Decreased milk supply (often related to less frequent milk expression)
- Fatigue and discouragement; inhibited let-down
- Infant losing interest in breastfeeding

Some strategies to address these problems are listed below. Discussing these in the prenatal period, as well as in the time before the mother returns to work or school can help the mother to make plans to continue breastfeeding. (IOM, 1992; Zinn, 2000)

### **Strategies Related to Pumping**

- Select a pump (or identify pump at the worksite) that meets the client’s needs. For women who are working full-time, a double electric pump is probably needed.
- Identify techniques to help with relaxation during pumping (e.g., imagery of infant nursing, listening to a recording of the infant’s voice, looking at photos).
- Wear clothing that is convenient for pumping, if possible.
- Drink when thirsty.
- Attempt to breastfeed exclusively on weekends.

- Infants may need to “learn” bottle feeding; there is no solid evidence about timing, but introducing the bottle 2-3 days before the return to work has been suggested.
- Have someone else introduce the bottle to your baby.

### **Strategies Related to the Worksite**

- Negotiate a flexible schedule; assuring co-workers and supervisors that this need is temporary may be helpful.
- Schedule an adequate amount of time for lactation breaks; this will vary depending on the woman and available equipment – estimates are 10-15 minutes if using a double pump, 20 minutes for single pump. Consider shortening lunch breaks so that adequate time for pumping can be used during other break times. Breastmilk supply is usually maintained by pumping about every 4 hours; some mothers may adapt to 6-8 hours with frequent feedings in the evening, after a few months.
- Once changes are in place, offer feedback and thanks to those who supported the changes.
- Returning to work midweek or planning to take a day off the first full week of work can help ease the transition to work (or school).

### **Expressed Breastmilk Storage**

- Always wash your hands before expressing or handling breastmilk.
- Clean your breastpump and collection bottles after each use with hot, soapy water. Rinse well with hot water and air dry.
- Express breastmilk into clear glass or plastic bottles with caps.
- To avoid wasting breastmilk store it in 2-4 ounce quantities per container. Breastmilk can be stored in ziptop freezer bags.
- Label each container with your baby’s name, the date expressed, and the number of ounces of milk.
- Refrigerate breastmilk or store with an ice pack or on ice until you’re able to refrigerate or freeze; breastmilk storage guidelines:
  - Room temperature at 60° F for 24 hours, 66-72° for 10 hours, 79° for 4-6 hours
  - Refrigerator; fresh milk (32-39° F) for up to 8 days
  - Refrigerator; thawed milk (32-39° F) for 24 hours
  - Freezer compartment inside refrigerator for 2 weeks
  - Freezer compartment above, below or next to refrigerator for 3-6 months
  - Deep freezer less than 0° F for 6-12 months
  - Insulated cooler/ice packs (60° F) for 24 hours
- Thaw frozen breastmilk under warm running water or in a pan of warm water.

Adapted from Breastpumps and Milk Supply, the Breastfeeding Coalition of Washington, a program of WithinReach [www.withinreach.org](http://www.withinreach.org).

### ***Read more about the Family and Medical Leave Act (FMLA)***

*Instituted in 1993, the Family and Medical Leave Act (FMLA) mandates guaranteed time off work for illness, to care for family illnesses, and for childbearing and childrearing. It*

*allows 12 weeks paid or unpaid leave and applies to employees who work for companies with >50 employees and who work >20 hours per week (must have worked 1 full year, at least 1250 hours, to be eligible) – companies must continue benefits (health care, seniority) & return employee to previous or equal position. (Zinn, 2000; US Department of Labor)*

**Read more about advocacy activities health care providers can participate in**

*Health care providers can promote breastfeeding by providing information to employers and community groups (e.g., the local chamber of commerce, business and professional women's organizations, and church/community organizations). Information can be in the form of discussions or fact sheets and can include:*

- *Facts about breastfeeding*
- *AAP guidelines*
- *Benefits of breastfeeding (e.g., decreased absenteeism and turnover, increased employee satisfaction)*
- *Worksite needs (e.g., comfort, privacy, flexibility)*

**Resource:**

**Working & Breastfeeding... "It's Worth It!"** contains information about the importance and benefits of breastfeeding, for both mothers and employers. From the Breastfeeding Coalition of Washington and WithinReach, available for order or online:

<http://www.breastfeedingwa.org/working>. This information is available in both in English and Spanish.

Legislation regarding public breastfeeding went into effect on July 26, 2009. This legislation allows mothers to breastfeed their babies in places of public accommodation. This law is part of the Washington Law Against Discrimination, RCW 49.60, and creates a new protected class: status as a mother breastfeeding her child in a place of public accommodation. The Washington Law Against Discrimination is enforced by the Washington State Human Rights Commission (WSHRC) which investigates discrimination complaints.

Now, mothers can breastfeed at a time, place, and manner of their choosing while in a place of public accommodation. They do not have to go to a special area or go into the restroom. They do not have to cover the baby with a towel or blanket. The owner, manager, or employee of a place of public accommodation cannot request that the mother stop breastfeeding her baby, cover up, move to a different room or area, or leave.

## **Assessment**

### **Prenatal Breastfeeding Assessment**

Breastfeeding assessment should start in the prenatal period with a thorough history. Assess if the mother has previous breastfeeding experience and how breastfeeding went for her. Identify any potential barriers she may have and address her concerns.

Assessment during pregnancy should include the following:

- Knowledge of breastfeeding
- Prior experience or history of breastfeeding
- Red flags (see below)
- Woman's questions or concerns (e.g., returning to school/work, ability, support)

**Red flags that indicate the potential for problems with breastfeeding include:**

- Previous breast surgery (e.g., breast reduction or augmentation) – depending on the nerves affected by the surgery, this may or may not interfere with breastfeeding
- Past failure at breastfeeding
- Past history of inadequate milk production
- Maternal obesity
- History of low birth weight or preterm birth infant
- Inverted nipples
- Chronic disease (diabetes, hypertension), illnesses and/or medications
- Excessive alcohol intake and/or use of illegal drugs
- Heavy smoking

Women with a history of breast surgery and truly inverted nipples (nipples that won't evert with stimulation) should be referred to lactation specialists. Those with alcohol and drug addiction should be discouraged from breastfeeding until they get appropriate treatment. Women on methadone for opiate treatment can breastfeed.

#### ***Read more about alcohol intake and breastfeeding.***

*Alcohol is transferred to breastmilk. Excessive maternal alcohol intake is associated with failure to initiate the letdown reflex, changes in infant sleep patterns, decreased milk intake, and a risk of hypoglycemia in the infant. Some studies suggest it may also be associated with impaired motor development.*

*No alcohol intake during lactation is considered to be the safest approach. Although infants are able to detoxify alcohol, decreased liver dehydrogenase activity makes them less able to metabolize it than adults. A nomogram (estimated time to zero level of alcohol in breastmilk) has been published, based on maternal weight/number of drinks/time. (Ho, 2001)*

## Post-natal Breastfeeding Assessment

After baby is born assess the mother's knowledge and perceptions of how breastfeeding is going. Ask open ended questions about the infant's feeding frequency, elimination patterns and evaluate latch. Always ask questions about breast and nipple pain and perceived milk production. Sore nipples and lack of confidence in milk production are major reasons why women wean prematurely and/or add infant formula. Keep interventions and recommendations to a minimum (instead of a long list of "do's and don'ts"). This section focuses briefly on breastfeeding assessment. For more in-depth training on assessment, refer to resources at the end of the module. Refer to Module 5 and Module 6 for information about assessing the nutritional status of women in the postpartum period and young infants.

### Maternal Assessment

Maternal assessment during the postpartum period should include the following:

1. **Maternal perceptions and knowledge:** Assess a mother's knowledge of breastfeeding and ask her how she thinks breastfeeding is going. What is the woman's knowledge related to:
  - When to feed
  - Whether or not the infant is getting enough
  - Milk supply and growth spurts
  - Infant state and feeding
  - Infant's personality and response to breastfeeding
  - How confident is mother about breastfeeding?
  - What are the mother's goals related to breastfeeding?
2. **Mother's concerns:** Real or perceived, any concerns a mother has about breastfeeding which go unaddressed can cause the mother to wean prematurely and start using formula. Use open-ended questions to get to the heart of the mother's concerns and provide targeted information.
3. **Illness/Medication:** Women who are ill may be afraid to nurse. Women with HIV, have untreated active tuberculosis, or are undergoing cancer treatment or radiation should not breastfeed. If there are herpes lesions on the nipple mom should not breastfeed or pump from that side until the lesions are healed. Women sick with colds, flu, and other minor illnesses are encouraged to continue breastfeeding.

The US National Library of Medicine maintains TOXNET. This network includes LactMed, a drugs and lactation database. <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT>

4. **Maternal Lifestyle** (sleep, fatigue, food intake, smoking, drinking, etc): These things can impact milk supply and be a concern with nursing

- How is the mother feeling?
- How is the mother sleeping?

## Infant Assessment

1. **Weight gain:** One of the primary indicators of breastfeeding success is the infant's weight. Expected weight loss and regain is covered in Module 6.

Red flags include:

1. Neonatal period – weight loss >8% in first few days, weight gain that doesn't begin by 4-5 days of age, not to birthweight by 10-14 days
2. First 2 months – rate of weight gain less than expected

2. **Urine and stool:** infants with adequate milk intake will have at least 3 stools and 6 urinations a day after a few days old. The color of stools should change over time

- Meconium (tarry black) 24 hours
- Transitional stools (black transitioning to green, then brown and yellow) up to first 4 days
- 3 to 4 days: 3 to 4 stools per day
- 5 to 7 days- 3 to 6 stools per day, yellow seedy stools

Red flags include:

- Light urine <6-8 times per 24 hours
- Dark yellow or scant urine with “brick dust” appearance (urate crystals are not uncommon, however)
- No yellow stool day 4 or 5
- Infrequent stools in the first two months. After about 2 months of age, stools may be less frequent, even every 2-5 days. (AAP, 2005)

3. **Jaundice:** Although usually benign, jaundice requires medical evaluation because of the potential for serious complications and recommendation by some to stop breastfeeding.

4. **Illnesses and/or medications:** If an infant is sick, premature, or born with a medical condition it may impact breastfeeding. Mothers of these infants need additional support to resolve any issues and provide milk for their babies. If baby cannot go to breast she may need to start pumping in the hospital.

5. **Oral anatomy:** Checking for anything that might interfere with nursing, including protrusion (associated with low muscle tone), ankyloglossia (short frenulum), tongue tie and clenched jaw.

## **Breastfeeding Observation**

Observing a feeding can help the clinician to identify any problems. Several tools to assess breastfeeding are available (Hill and Johnson, 2007). Positioning (e.g., use of pillows, stools, and chairs) should be adapted for each mother and infant, to allow the infant's mouth to approach the nipple in correct alignment. Latch-on problems occasionally require the use of silicone shields over the mother's nipple, with appropriate supervision by a trained lactation consultant.

## **Feeding devices**

Some infants require the use of feeding devices to successfully breastfeed. A few are summarized below. This is intended to be an overview to familiarize the clinician with these devices; use of these tools should be supervised by a lactation specialist.

### **Shields**

Generally made of silicone, these thin shields are worn over the nipple, to help when the infant is having trouble latching on; they may help when the mother has flat or inverted nipples. Shield use should be monitored by an individual trained in lactation support to ensure the infant is stimulating the breast enough to continue milk production, there is adequate milk transfer, and to help with transition from the shield.

### **Supplemental nursing systems**

A feeding tube device that provides supplemental feedings while mimicking breastfeeding (e.g., for infants who tire easily or have a weak suck)

### **Other**

Other special devices include the Haberman Feeder™, finger feeders (to help infants learn to suck), and cup feeders. These are generally for infants with medical conditions that make breastfeeding difficult.

## **Herbs, supplements, foods**

A number of herbs and other supplements are sometimes used during lactation, primarily to promote milk production. These include (Belew, 1999; Hardy, 2000):

- Aniseed
- Black elder
- Blessed thistle
- Caraway
- Celery root/seed
- Fennel
- Fenugreek
- Goat's rue
- Raspberry
- Rauwolfia
- Verbena
- Vervain
- Vitex

Some herbs have been noted to reduce milk production, including (Hardy, 2000):

- Castor bean

- Jasmine flower
- Sage

As with all herbs, supplements, and complementary medicine, questions the dietitian should ask include:

- Is the product safe?
- Is there evidence to support the use of a supplement?
- Will this augment or replace conventional therapy?
- What are the possible harmful effects? (Nutrients being eliminated? In excess? Effect on food pattern? Expense?)

It can also be helpful to ask a client which foods are thought to increase milk production. Most of these foods are commonly consumed and are of no concern. The food patterns of many cultures include foods that are promoted as galactogouges (foods/substances that increase milk production). For example:

- Japan – adzuki beans, rice gruel, soup and vegetables, lotus root
- USA – alfalfa, beer or brewer's yeast
- Netherlands, Sweden – anise
- Thailand – banana flower soup
- China – chicken soup, ginger, red plums
- Mexico – cotton seeds
- Pakistan – cumin, goat's stomach
- India – fried ginger, black pepper
- Africa – oatmeal gruel
- Korea – seaweed soup

## ***Managing Common Problems***

Some common problems with breastfeeding are discussed in the next few pages, along with strategies to address them. In nearly all instances, the goal is to maintain milk production while correcting problem. Usually, continued breastfeeding will actually help to treat the problem as well. Referral to a lactation specialist may be indicated.

Content for this section was adapted from training developed by the Washington State WIC Nutrition Program and Washington State Department of Health – Module 10: Solutions for Common Breastfeeding Concerns or Questions. It is compiled in a table [link to pdfs/8commonconcerns.pdf].

### **Engorgement**

When breasts are engorged, they are swollen, hard, and painful. This makes nursing difficult because the nipples cannot protrude to allow the baby to latch on correctly. It is different from breast fullness, which is the gradual accumulation of blood and milk in the breast and a sign that milk is “coming in.” The onset is usually 3-5 days postpartum. Patterns vary widely, but in general, engorgement can last 1-10 days.

#### **Physical Symptoms**

- Swelling
- Tenderness
- Warmth
- Pain
- Skin shiny, tight
- Nipple flattened

#### **Mother May Report**

- It began on the 3rd to 5th day after birth
- Breastfeeding was going well until now
- Baby cries and refuses the breast
- Her breasts feel hard and painful
- She feels overwhelmed

Engorgement is caused by inadequate milk removal; it is also normal after the milk first comes in and the supply is being established. Treatment strategies should address why milk is not being removed adequately. If there is a problem with the infant’s suck or ability to nurse, this should be evaluated quickly.

#### **Prevention:**

- Breastfeed within the first hour after birth
- Get help to assure baby is latched well
- Breastfeed at least 8 times or more every 24 hours in the early days

- Listen for signs of the baby swallowing to be sure milk is transferring
- Respond to baby's early signs of readiness to feed and feed day and night when those early signs are observed
- Keep baby skin to skin with mother
- Do not limit the feedings; allow baby to feed as long as he wants and to release the breast on his own
- Avoid supplementing the baby with foods other than the mother's milk

### **Simple comfort measures**

#### *Before the Feed:*

- Apply warm (not hot) compresses
- Perform "reverse pressure softening" to relieve edema and allow the softened areola to be easier to grasp
- Express a little milk to soften the areola

#### *After the Feed:*

- If the mother still feels full, continue to express milk to relieve the fullness
- Apply ice packs (frozen peas work well)

#### *Other Things to Keep in Mind:*

- Breastfeed more frequently
- Offer both breasts at each feeding
- Express milk if necessary to keep breasts from being uncomfortably full
- Express milk in a warm shower or bath

### **Refer When**

- Comfort measures have not relieved engorgement

### **Low Milk Supply**

Often, the perception of low milk supply (even when supply is adequate) leads to breastfeeding cessation. Signs of low milk supply identified by mothers include a "fussy baby," infant crying after a feeding, and poor weight gain. Other factors in the perception of low milk supply include maternal confidence, paternal support, maternal health, opinions of other family members, infant birthweight, baby behavior, and the use solid foods and formula.

The most common cause of low milk supply is the addition of infant formula in the first month of the infant's life. During this time of early breastfeeding the breasts make milk in response to three factors: hormones, milk being removed from the breast and stimulation of the mother's breast and nipples by the infant. This cycle keeps the mother's hormone levels high and creates receptor sites for prolactin to ensure an adequate milk supply. Infrequent breastfeeding is also a common cause of poor milk production.

Some maternal conditions can also affect milk supply. Examples include retained placenta, illness or medication, previous breast surgery, congenital insufficient glandular tissue, pituitary tumors, and hypothyroidism (not an exhaustive list).

### **Physical Symptoms**

- The baby has fewer than 3 stools per day in the first 3-4 weeks and is not gaining weight well (at least 4-7 ounces per week)
- The baby does not feed 8-12 times every 24 hours
- Mom limits the baby's time at the breast
- The baby has begun supplemental formula or solid foods
- The mother has begun birth control
- The mother and baby are separated and mom is not expressing milk while away from baby

### **Prevention:**

- Ensure the baby is positioned and latched well so that milk transfer can occur
- Breastfeed at least 8 times every 24 hours, and every time the baby shows signs of hunger
- Let the baby release the breast to end the feed
- Avoid long intervals between feeds

### **Simple comfort measures**

- Put the baby to breast whenever he shows signs of hunger
- Increase the number of feedings (or remove milk with a breast pump)
- Breastfeed at night when prolactin levels are highest
- Offer the baby unlimited access to the breast
- Hold the baby skin to skin
- Rest and relax to help milk flow
- Breastfeed on one side and pump on the other to keep the baby at the breast
- Express milk when separated from baby
- Address individual problems (e.g., positioning, latching on, stress/fatigue)
- Talk with physician about medications that can help increase production

### **Refer When**

- The assessment shows the mother has true low milk production
- The baby is in need of medical attention or follow-up

In some cases, it can be helpful to determine breastmilk production and infant intake. This can be estimated with “test weights” (weighing an infant before and after feeding to estimate intake – the best practice is to measure a series of test weights, and not base estimates on a single feeding) but should be done on an accurate scale by trained staff..

### **Sore or Cracked Nipples**

Fear of sore nipples may deter the initiation of breastfeeding. Mothers who experience sore nipples often discontinue breastfeeding earlier than they had planned. The severity

of sore nipples has a wide range – from tenderness that is normally associated with compression of the breast tissue to severe skin breakdown. Prevention and treatment have several goals: to provide an adequate intake for the infant, to prevent infection, to promote continued breastfeeding.

### **Physical Symptoms**

- Breast or nipple pain
- Cracks across the top of nipple or around the base
- Bleeding possible
- May be infected
- Nipple may be flat/inverted and baby is latching poorly

### **Prevention**

- Ensure a good latch; ask an IBCLC to observe latch in the hospital before discharge
- Breastfeed at least 8 times every 24 hours – every time baby shows early signs of hunger
- Avoid long intervals between feeds (baby nurses more vigorously when he has not eaten in awhile)
- Keep breast pads clean and dry
- Avoid alcohol, soaps, perfumes, deodorants, and other products on the breast
- Avoid bottles the first 3-4 weeks

### **Simple Comfort Measures**

#### *Before the Feed:*

- Begin feeding on the side that hurts less (baby nurses more vigorously on the first breast)
- Ensure a good latch; ask the WIC Breastfeeding Promotion Coordinator to help
- Vary the positions for breastfeeding
- Massage breasts to encourage milk to flow before latching baby

#### *During the Feed:*

- Do not limit feedings

#### *After the Feed:*

- Apply drops of mother's milk
- Wear breast shells between feedings to keep clothing away from breasts

### **Other Things to Keep in Mind:**

- Do not stop breastfeeding unless nipples are severely damaged; use a breast pump to maintain milk production
- Do not use soap or creams on nipples
- Do not miss feedings or wait until the breast is full to breastfeed

### **Refer When**

- Comfort measures do not resolve the soreness

- Mother reports severely damaged nipples or pain with breastfeeding
- Mother reports a severe burning, stinging sensation (could signify *Candida albicans*) or says baby has white patches inside mouth
- Mother reports her nipples are blanched after feeding
- Mother is running a fever
- Mother's nipples look infected

**Read more about mastitis.**

*Mastitis is marked by influenza-like symptoms (fever, chills, headache), firm, painful red area(s) on the breast, and poor emptying). Treatment includes application of heat, rest, emptying the breast, and antibiotics. Risk factors for developing mastitis include inadequate emptying of the breast, cracked nipples, and fatigue. It is not dangerous to the baby, so recommendations are to continue breastfeeding during treatment.*

**Symptoms:**

- *Mother has fever*
- *An area on the breast is red and painful*
- *Mother has flu-like symptoms (achy feeling)*
- *Milk production has declined*
- *Baby may not be interested in nursing on that side*
- *Mother has a previous plugged duct that never fully resolved*

**Prevention**

- *Ensure a good latch*
- *Breastfeed at least 8 times every 24 hours, and every time the baby shows signs of hunger*
- *Let the baby release the breast to end the feed*
- *Avoid long intervals between feeds*
- *Follow basic engorgement prevention recommendations*
- *If plugged duct arises, treat aggressively*
- *Avoid tight clothing or other things that can press against sensitive milk ducts (ex: shoulder strap in the car, purse or diaper bag strap, too tight bra, or pulling bra over the breast to breastfeed)*
- *Ask for help from family and friends for non-infant-care chores*
- *Rest and drink plenty of fluids and avoid overdoing it*

**Simple Comfort Measures**

**Before the Feed:**

- *Apply warm (not hot.) compresses over the affected area*

**During the Feed:**

- *Breastfeed on both breasts, beginning with the affected breast*

- *Begin feeding on the side with the plugged duct*
- *Gently massage the lumpy area while baby is feeding*

**After the Feed:**

- *Remove milk by hand or with a quality breast pump if breast is still uncomfortably full*
- *REST*
- *Drink plenty of fluids*
- *Be vigilant about hand washing*

**Other Things to Keep in Mind:**

- *Baby can continue to breastfeed*
- *Do not stop breastfeeding. Breasts need to be well drained*
- *Put the baby to breast whenever he shows signs of hunger*
- *Always contact the doctor if mother is running a fever or has flu-like symptoms; encourage her to consult her physician if symptoms do not improve after beginning an antibiotic regimen*

**Refer When**

- *Mother reports fever and/or flu-like symptoms, or a reddened area on her breast*

**Plugged Duct**

**Symptoms:**

- Localized pain
- Lump that is tender
- Mother's temperature usually below 101.3°F

**Prevention:**

- Ensure a good latch
- Breastfeed at least 8 times every 24 hours, and every time the baby shows signs of hunger
- Let the baby release the breast to end the feed
- Breastfeed in varied positions
- Avoid long intervals between feeds
- Follow basic engorgement prevention recommendations
- Avoid tight clothing or other things that can press against sensitive milk ducts (ex: shoulder strap in the car, purse or diaper bag strap, too tight bra, or pulling bra over the breast to breastfeed)
- Ask for help from family and friends for non-infant-care chores
- Rest and drink plenty of fluids

**Simple Comfort Measures**

**Before the Feed:**

- Apply warm (not hot) compresses over the blocked area
- Massage the breast toward the nipple, paying attention to gently massaging the lumpy area

**During the Feed:**

- Position baby with chin pointed toward the affected area
- Ensure a good latch
- Begin feeding on the breast with the plugged duct
- Gently massage the lumpy area during the feeding

**After the Feed:**

- Express milk by hand or with a quality breast pump to keep the affected breast from becoming too full

**Other Things to Keep in Mind:**

- Do not avoid breastfeeding
- Allow the baby to feed whenever he shows signs of hunger
- Get plenty of rest
- Contact the doctor if you begin running a fever
- Get help from the WIC Breastfeeding Promotion Coordinator who can observe a feed and ensure the baby is latched well and is transferring milk

**Refer When**

- The plugged duct is not relieved
- Mother reports fever or flu-like symptoms

**Jaundice**

Jaundice is caused by high bilirubin levels, and is characterized by a yellow tinge to an infant’s skin and eyeballs. In most infants, jaundice appears to be benign, but in some forms, kernicterus, or “acute bilirubin toxicity” occurs. Infants with acute bilirubin toxicity are lethargic, hypotonic, and suck poorly. An intermediate phase may be indicated by stupor, irritability, hypertonia, and a high-pitch cry. During the advanced phase, central nervous system damage can occur, including coma, seizures, and death.

“Breastmilk jaundice” was previously thought to be rare, but it is now understood that the majority of breastfed infants have elevated bilirubin levels around the third week of life. (Neifert, 1998) No intervention is required, and the AAP recommends that breastfeeding continue if this is the cause of jaundice. (AAP, 2004)

In contrast, “breastfeeding jaundice” is caused by inadequate feeding, and is marked by excessive weight loss, infrequent stooling, and delayed onset of yellow “milk” stools. It has been suggested that this is more accurately called “lack-of-breastmilk jaundice.” Treatment usually focuses on ensuring adequate intake, enhancing breastfeeding techniques and routines, and maximizing milk supply. (Neifert 1998)

Other causes of jaundice include: Low birth weight, preterm birth, cephalohematoma (large bruising) from delivery, biliary atresia, ABO incompatibility, Rh incompatibility, galactosemia, glucose-6-phosphate dehydrogenase deficiency, infections and sepsis, and congenital infections (e.g., CMV, toxoplasmosis), and congenital hypothyroidism. (Medline Plus)

**Physical Symptoms:**

- Yellow tinged skin and whites of eyes
- Sleepiness

**Symptoms of serious jaundice known as Kernicterus**

*Infants with suspected Kernicterus need to be sent to the medical provider immediately.*

- Lethargy
- Poor suck
- Irritability
- High pitched cry

**Prevention:**

- Breastfeed within the first hour after birth
- Place baby skin-to-skin after birth until the first feeding is accomplished
- Keep baby skin-to-skin for easy access to breasts
- Breastfeed often, every 1 ½ to 3 hours, or when baby shows early signs of hunger or at least 8 times in 24 hours
- Avoid using a pacifier in the first month
- Ensure a good latch; ask an IBCLC to observe latch in the hospital before discharge
- Avoid long intervals between feeds
- Let baby nurse as long as he desires
- Feed breastmilk only, no formula or water

**Refer *immediately* when:**

- Symptoms of serious jaundice or Kernicterus are present (see above)

**Difficulty Latching on**

Difficulty latching on can be caused by a number of problems including infant state, positioning, infant's oral anatomy, and maternal breast anatomy. Poor latch can also cause many of the issues described above.

Addressing problems with an effective latch-on includes evaluation of the problem and identification of a strategy to address the problem:

- Wait for (and enhance) optimal infant state
- Correct positioning
- Express drops of milk before offering the breast
- Tickle the infant's upper lip with nipple until he/she opens mouth
- Encourage non-nutritive sucking for 5 minutes before latch-on

In severe cases, referral to a lactation specialist may be required.

**Positioning** (e.g., use of pillows, stools, and chairs) should be adapted for each mother and infant, to allow the infant's mouth to approach the nipple in correct alignment

**Signs of positioning problems include** (Neifert 1998):

- Infant falling off the breast repeatedly
- A rapid, light, fluttering suck (instead of deeply and regularly)
- Inward tugging of the infant's cheeks
- Clicking or smacking noises

**Some common positioning problems include:**

- Infant not turned to face the mother
- Mother not supporting the breast
- Having the mother's fingers too close to the nipple
- Allowing the infant to grasp only the nipple and no surrounding areola

For more information about positioning, see these resources:

- [ibreastfeeding.com](http://www.ibreastfeeding.com) <http://www.ibreastfeeding.com> – a website that includes continuing education opportunities, information about breastfeeding, and resources, including downloadable materials for families and information about medications and lactation
- [breastfeeding.com](http://www.breastfeeding.com) <http://www.breastfeeding.com> - intended for mothers, this website includes information, graphics, and video about positioning, latch-on, and other practical issues related to breastfeeding

## ***Referral Flags and Resources***

Consultation and collaboration will depend on what breastfeeding issues are present and how severe the issues are. Team members may include the following:

- Dietitian – to evaluate nutritional status of mother and infant and to provide guidance about lactation (depending on dietitian’s level of expertise)
- Lactation consultant – to provide specialized information and intervention about issues related to lactation; lactation consultants may be found in hospitals, obstetrics offices, and some WIC offices. Some lactation specialists are nurses, dietitians, therapists, or other health care providers. More about the credentialing requirements for lactation consultants is online: <http://www.iblce.org/old/role.htm>.
- Nurse – to evaluate and provide care for the mother and infant and to provide guidance about lactation (depending on level of expertise)
- Physician – to evaluate medical issues in the mother and infant and provide guidance about lactation; also to treat infections (e.g., mastitis, candidiasis, herpes)
- Peer counselor – to promote breastfeeding among pregnant clients, to provide ongoing support and encouragement, and to help with normal breastfeeding issues. Peer counselors are trained to refer the mother to a lactation consultant or her physician for potentially serious problems.
- Physical and occupational therapists, speech therapists with training and experience with breastfeeding and young infants may also serve as lactation consultants

If any of the following are identified, a referral to a lactation specialist should be made for follow-up after delivery:

- Palpable lumps or cysts
- History of breast augmentation or reduction
- Significant breast size discrepancies
- No change in breast size during pregnancy
- Inverted nipples

## **Case Example: Laura and Audrey**

Audrey is a 3-week old infant who is exclusively breastfed; Laura is her mother. Laura is concerned that Audrey is not getting enough milk. Breastfeeding has never been comfortable for Laura, and she is considering supplementing with formula, just to reassure herself that Audrey will get the nutrients she needs to grow. The dietitian notices that Laura seems uncomfortable holding Audrey while nursing and that Audrey seems to get tired before she is really full.

### **Is a referral indicated? If so, who could provide consultation?**

Consultation with a lactation consultant may be indicated. A lactation consultant might be found in the community (WIC, LLL member, MSS) or hospital. A lactation consultant could help Laura and Audrey with any positioning problems as well as identify any other problems they might be having with breastfeeding.

The MSS dietitian could provide education to Laura about the signs of adequate intake (e.g., number of wet/poopy diapers, weight gain). Open-ended question about Laura's comfort level and about why she is uncomfortable with breastfeeding could also provide valuable information.

Once client concerns/problems are identified and addressed, follow up weight check could help to reassure Laura that Audrey is growing well.

## **Case Example: Cecile**

Cecile is a 22-year old who has a 4-week old infant, Caleb. Cecile has been breastfeeding Caleb, but explains that she needs WIC formula checks, since she will be returning to work in 2 weeks.

### **What are some general strategies that the dietitian could use to facilitate a discussion about Cecile's decision to continue breastfeeding?**

The dietitian could ask open-ended questions:

- Can you tell me more about your plans for returning to work?
- What other reasons do you have for wanting to stop breastfeeding?

The dietitian should affirm the mother's feelings:

- It sounds like you have given this some thought.
- Returning to work when you have a newborn is really hard.

The dietitian should provide information related to Cecile's specific concerns and provide contact information for resources:

If Cecile would like some strategies for breastfeeding while working, the dietitian could provide some strategies specific to pumping, breastmilk storage, and the worksite.

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## Resources

### Community Resources

Local resources can include private non-profit agencies and area hospitals; contact the postpartum unit or public health department.

Hospitals:

- Seattle Children's Hospital and Regional Medical Center Resource Line (206) 987-2500
- Providence Everett Medical Center Lactation Services (425-261-3744)
- Evergreen Hospital Breastfeeding Hotline (425-899-3494)
- University of Washington Medical Center Breastfeeding Hotline (206-598-4628)

Other agencies:

- Within Reach <http://www.withinreachwa.org>
- La Leche League of Washington  
<http://www.lalecheleague.org/Web/Washington.html>
- Seattle King County Breastfeeding Coalition (206-789-0883)
- Public Health Seattle King County, Resources for Breastfeeding Support  
<http://www.metrokc.gov/health/breastfeeding/resources.htm>
- Great Starts (formerly Childbirth Education Association) provides prenatal classes, telephone counseling, and home visits <http://www.greatstarts.org/breastfeeding.htm>

### **Information for Mothers**

Breastfeeding - Best for Baby. Best for Mom. A website maintained by the National Women's Health Information Center, US Department of Health and Human Services, Office on Women's Health. <http://www.womenshealth.gov/breastfeeding/>

Torgus J, Gotsch G, eds. 2004. *The Womanly Art of Breastfeeding*, 7th ed. Schaumburg, IL: La Leche League International. Available for order from:  
<http://www.lalecheleague.org>

Working & Breastfeeding... "It's Worth It!" contains information about the importance and benefits of breastfeeding, for both mothers and employers. From the Breastfeeding Coalition of Washington and WithinReach, available for order or online:  
<http://www.breastfeedingwa.org/working> This material is available in both English and Spanish.

### **Information for Professionals**

Medical Provider Training:

- WIC - <http://www.doh.wa.gov/cfh/wic/trng-materials.htm>
- Evergreen Perinatal Education -  
<http://evergreenperinataleducation.com/programs/lactation/>

Medical Provider Breastfeeding Information  
Washington State Department of Health WIC Nutrition Program:  
<http://www.doh.wa.gov/cfh/WIC/provider-bf.htm>

Guidelines and Books:

Lawrence RA. 2005. *Breastfeeding: A Guide for the Medical Profession*, 6th ed. St. Louis, MO: Mosby-Year Book.

Briggs GG, Freeman RK, Yaffe SJ. 2008. *Drugs in Pregnancy and Lactation*, 8th ed. Baltimore, MD: Lippincott Williams and Wilkins.

Hale TW. 2010. *Medications and Mothers' Milk*, 14th ed. Hale Publishing, LP.

Riordan JM, KG. 2004. *Breastfeeding and Human Lactation*, 3rd ed. Boston, MA: Jones and Bartlett Publishers.

Medline Plus: Breastfeeding <http://www.nlm.nih.gov/medlineplus/breastfeeding.html>  
Website includes links to resources about breastfeeding

Academy of Breastfeeding Medicine <http://www.bfmed.org> Website includes guidelines for the care of breastfeeding mothers and infants; many of these guidelines are available in several languages. Topics include mastitis, including co-sleeping, hospital policies, milk storage, and galactogogues.

Shealy KR et al. CDC Guide to Breastfeeding Interventions. Atlanta: US DHHS, CDC, 2005." Online: [http://www.cdc.gov/breastfeeding/pdf/breastfeeding\\_interventions.pdf](http://www.cdc.gov/breastfeeding/pdf/breastfeeding_interventions.pdf) (links to a pdf)

ibreastfeeding.com <http://www.ibreastfeeding.com> – a website that includes continuing education opportunities, information about breastfeeding, and resources, including downloadable materials for families and information about medications and lactation

breastfeeding.com <http://www.breastfeeding.com> - intended for mothers, this website includes information, graphics, and video about positioning, latch-on, and other practical issues related to breastfeeding

#### *Pediatrics* Journal Supplement

The October 2008 supplement to *Pediatrics* presents results on several feeding issues: breastfeeding patterns, intensity and duration; reasons for stopping breastfeeding; and transitional and complementary feeding. Abstracts are available at [http://pediatrics.aappublications.org/content/vol122/Supplement\\_2/index.dtl](http://pediatrics.aappublications.org/content/vol122/Supplement_2/index.dtl)

## Quiz

1. One of the maternal benefits to breastfeeding is that breastfeeding is associated with lower rates of:
  - a. ovarian cancer
  - b. polycystic ovary syndrome
  - c. asthma
  - d. type 1 diabetes
  
2. Which of the following is NOT a benefit of breastfeeding:
  - a. protects against infectious diseases, including otitis media
  - b. prevents some chronic diseases, including chronic lung disease
  - c. is associated with reduced rates of sudden infant death syndrome in the first year of life
  - d. is associated with increased IQ and improved school performance
  
3. The \_\_\_\_\_ transport(s) the milk toward the nipple.
  - a. areola
  - b. alveolus
  - c. acinar structures
  - d. lactiferous ducts
  
4. Full lactation begins about \_\_\_\_\_ after birth.
  - a. 24 hours
  - b. 72 hours
  - c. 1 week
  - d. 2 weeks
  
5. The adequacy of an infant's intake can be evaluated by monitoring weight and diapers. The intake of a 5-day old infant who has lost 10% of birthweight and is having 3 wet diapers and 2 stools per day is likely \_\_\_\_\_.
  - a. adequate
  - b. inadequate
  - c. excessive
  - d. there is not enough information to evaluate

6. Strategies for minimizing problems with engorgement include all of the following, EXCEPT:

- a. Feed more frequently
- b. Manually express milk before feedings to soften areola
- c. Apply cool compress to the breast before nursing or pumping
- d. All are strategies to minimize discomfort associated with engorgement

7. When a breastfeeding mother complains of nipple tenderness that lasts about 30-60 seconds at the beginning of the feeding, the dietitian should:

- a. Suggest the use of nipple shields
- b. Assure the mother that some tenderness is normal
- c. Refer the mother and infant to a lactation specialist
- d. Refer the mother and infant to a dermatologist to rule out infection

8. Breastfeeding should be discontinued if the mother is:

- a. using marijuana
- b. drinking 3 cups coffee per day
- c. drinking alcohol, but limiting it to 3 hours before breastfeeding
- d. none of the above

9. Discussing strategies for breastfeeding while working can help the mother make plans to continue breastfeeding. One suggestion is to schedule an adequate amount of time for lactation breaks. Although this will vary from woman-to-woman, estimates (when using a dual pump) are:

- a. 5-10 minutes
- b. 10-15 minutes
- c. 30-40 minutes
- d. 60 minutes

10. During the first few months, breastmilk supply is generally maintained by pumping about every \_\_\_ hours.

- a. 2
- b. 4
- c. 8
- d. 10

11. Expressed breastmilk can be stored in a freezer (0 degrees F) for up to:

- a. 48 hours
- b. 2 weeks
- c. 4 weeks
- d. 3-6 months

12. Referral to a lactation specialist should be made for follow-up after delivery if risk factors are identified. The following are all risk factors, EXCEPT:

- a. inverted nipples
- b. palpable lumps or cysts
- c. history of breast augmentation or reduction
- d. significant change in breast size during pregnancy