BREASTFEEDING TIPS AND RESOURCES: GETTING FAMILIES OFF TO THE RIGHT START AND KEEPING THEM ON COURSE

> *To breastfeed, mothers need support, knowledge and skills. In many families they have lost the natural generational and cultural support and mentors, because their female relations did not breastfeed their babies.*
>
> *—Abraham Hamaoui, MD*

WHAT SHOULD WE BE PROMOTING?

The American Academy of Family Physicians (AAFP), The American Academy of Pediatrics (AAP), The Academy of Breastfeeding Medicine (ABM), The World Health Organization (WHO), and The Centers for Disease Control and Prevention (CDC) all agree: Babies should be exclusively breastfed for six months. At six months, complementary foods should be added. Children should continue breastmilk as their only liquid until 1 year of age. At 1 year, other milks and water can be introduced. Mothers should be encouraged to continue to breastfeed until at least age 2 or as long as mother and child both desire.

Breastfeeding is the norm for both mothers and babies. Although much focus is given on the benefits for babies, including lower risk of multiple infectious diseases, lower risk of several autoimmune diseases, decreased risk of childhood leukemia, decreased risk of obesity, and improved IQ, attention should also be given to the health benefits for mothers.[1,2] In addition to improved postpartum weight loss, women who breastfeed have a lower risk of heart disease, diabetes, hypertension, breast cancer, endometrial cancer, and ovarian cancer.[2,3]

INFORMED CHOICE

Providers must empower families to make informed decisions about infant feeding by discussing the benefits of exclusive breastfeeding, the health risks of infant formula, and the recommended infant feeding guidelines put forth by the WHO, AAP, and AAFP.[4]

WHAT OBSTACLES DO MOTHERS ENCOUNTER WHEN ATTEMPTING TO BREASTFEED?

In the Surgeon General's Call to Action, published January 2011, several important obstacles were identified.[5] They included the following:

- Lack of experience or understanding among family members of how best to support mothers and babies
- Not enough opportunities to communicate with other breastfeeding mothers

- Lack of up-to-date instruction and information from health care professionals
- Hospital practices that make it hard to get started with successful breastfeeding
- Lack of accommodation to breastfeed or express milk at the workplace

PREVENTION, PREVENTION, PREVENTION

Prevention is the most effective way to deal with the majority of problems that present in lactation, including low milk supply (real or perceived), sore nipples, jaundice, bottle preference, poor weight gain, and mastitis. Education for the family prenatally is key to the prevention of problems.[6-9] Involving the father or partner is especially beneficial.[10] Once breastfeeding problems have occurred, trying to work backward to resolve them and rehabilitate the breastfeeding relationship is challenging. Providers should be able to understand and explain to families how normal breastfeeding is established and what to expect the first few days of feeding a newborn.

PRENATAL EDUCATION

Encourage all pregnant women to take a class in breastfeeding. Many hospitals and local health departments offer classes for free. Consider also recommending the book "The Womanly Art of Breastfeeding" by La Leche League. Before the birth, every family should understand:

- How to establish a milk supply
- What baby's second night may be like, and that cluster-feeding is normal
- The importance of recognizing infant feeding cues and feeding on cue
- The importance of avoiding bottles and pacifiers for the first four weeks[2,11]
- Social expectations—How do they plan to breastfeed baby when out and about? What would help them to feel comfortable?
- Where to get help with breastfeeding. What are the local resources?
- How to transition back to work

GUIDANCE TO GIVE EXPECTANT MOTHERS PRENATALLY

ACCEPTING HELP

Bringing home a new baby is a big time of adjustment for the whole family. Breastfeeding is a learned process, which takes time. The mother should understand that her main job during the postpartum time period is to feed herself and her baby. She should mentally be prepared to accept help from her partner, parents, grandparents, in-laws, and anyone she is comfortable with. Household tasks, such as cooking, dishes, and laundry, should not be the responsibility of the mother during the first two weeks she and her baby are home. She should allow herself to accept help from others, and not be afraid to ask for help. Others should do a household chore BEFORE they get to hold the baby. The baby's main place during the postpartum time is with the mother.

NIPPLE SORENESS

It is common to have some nipple soreness when the baby latches on during the first few days after birth. Nipple soreness can indicate problems such as improper latch, infection or tongue tie, and should be evaluated by a lactation professional. Sore nipples should clear up by two weeks postpartum, as the nipples get used to their new job of breastfeeding, and mothers and babies perfect their latch. Mothers can try repositioning the baby to relieve areas of soreness and make sure they are positioning baby for a nice wide latch. Lanolin or other topical ointments compounded for use in breastfeeding can be applied to the nipples to provide some relief.

FEEDING THE BABY

The mother should have a good breastfeeding session, ideally, during the first hour after birth. Uninterrupted skin-to-skin contact between mother and baby during this time will facilitate that to occur. She should then latch baby onto the breast every one to three hours until her milk comes in, with a goal of 10-12 nursing sessions in 24 hours. This early nipple stimulation is important for building a good milk supply. Once her milk is in, she should watch the baby, not the clock, and should feed the baby whenever the child gives a sign for hunger. These signs are called "cues." Every baby is different and has a unique set of cues. Cues can include head bobbing, sucking on hands or other body parts, drooling, turning their head toward the breast, or opening the mouth wide. Crying is a late cue of hunger. If the baby is crying for food, the parents have already missed early cues of hunger.

WHEN TO FEED

Watch the baby for cues of hunger and not the clock. A baby should be fed whenever he or she gives hunger cues. A mother may also want to wake a sleeping baby to feed if her breasts are feeling very full.

Mother should offer the baby both breasts at each feeding. She should nurse her baby until the child seems satisfied at the first breast (at least 10-15 minutes for most babies), then offer the second breast. At the next feeding, she should reverse the order by offering the last-used breast first. Around the second night of life, baby may be very fussy, and may cluster-feed all night long. It is important that parents understand that this is normal behavior for newborns. In fact, it is this very behavior that brings the milk in. Babies may continue to have periods of cluster feeding during the first two weeks of life, and during growth spurts. Newborns should not be encouraged to sleep through the night. Although it's exhausting for moms in the early months, babies need to eat during the night.

BREAST FULLNESS VS. BREAST ENGORGEMENT

Fullness in the breasts is a good sign that the early milk, called colostrum, is now transitioning to mature milk. This transition usually occurs 2-4 days after the birth. When full, the breasts should still be soft enough for the baby to latch on easily. Breastfeeding frequently, whenever the baby gives cues, will help build up a good milk supply and will

relieve the feeling of fullness in the breasts. Nursing frequently will also decrease the risk of developing breast engorgement or mastitis.

Breast engorgement is when the breasts become swollen and painful as the milk comes in. This typically occurs in both breasts at the same time. It may be difficult for the baby to latch on, due to the nipples being swollen and firm. Expressing milk with a breast pump or by hand will help to soften the nipples so that the baby can latch on more easily—this is often the first breastfeeding challenge mothers can take pride in solving themselves. Taking a warm bath/warm compresses can also help the milk to leak out, softening the breasts. Ibuprofen can help to relieve swelling. Most importantly, the baby should be nursed frequently to relieve the pressure.

If the breasts are engorged and firm, expressing milk with a breast pump or by hand will help to soften the nipples so that the baby can latch on more easily.

NUTRITION AND BREASTFEEDING

Breastfeeding requires an extra 450-500 calories a day.[2] Mothers should eat whenever they feel hungry. All foods are fine with breastfeeding, but it is important to eat a well-balanced diet. Mothers may continue their prenatal vitamin, and if they were prescribed a vitamin or iron pill for a specific reason, they should continue to take it. Mothers should be sure to drink plenty of fluids, as it will help them maintain a good milk supply. Many mothers find it helpful to always keep a water bottle with them. Practitioners should make sure that both mom and baby are getting enough vitamin D. Many mothers may also want to supplement with omega-3 and/or iron, depending on the composition of their diet.

PACIFIERS, BOTTLES AND FORMULA

In order for babies to develop good breastfeeding habits, it is recommended that mothers avoid the use of pacifiers until four weeks of age.[12] If the mother needs to give her baby breastmilk in a bottle, it is recommended that she wait until the baby is 4 weeks old. [2,11] Breastpumps are available through VHA (usually via prosthetics request); most insurance plans; and the Women, Infant, and Children (WIC) program. Some hospitals may rent or lend hospital-grade pumps as well. Mothers may wish to start pumping once a day between feedings to store milk in the freezer for their return to work and to allow the baby to practice with breastmilk in a bottle prior to that transition.

Giving the baby infant formula before six months of age will change how the baby's digestive tract works by altering what bacteria populate the digestive tract and by decreasing the development of tight junctions between the cells lining the digestive tracts.[13-16] These changes increase the baby's risk for certain conditions such as type I diabetes and inflammatory bowel disease.[17,18] Formula should not be given unless medically indicated.

Giving formula to the baby will also reduce mother's milk supply. If a mother feels that her baby may need infant formula, she should talk with a lactation professional or her practitioner about this first. Normal healthy babies may loose up to 10% of their birth

weight in the first few days of life. Although a weight loss of 8-10% of birth weight may be within normal limits, if all else is going well and the physical examination is normal, it is an indication for careful assessment and possible breastfeeding assistance. Babies whose mothers received IV fluids and/or Pitocin in labor may loose more than 10% of their birth weight due to diuresis after birth.[19,20] The proper support of breastfeeding is typically the first step if there are concerns over baby's weight gain. Inappropriate supplementation with formula in the first few days of life can interfere with the establishment of a proper milk supply, and can lead to long-term problems with supply.

HOSPITALS AROUND THE COUNTRY ARE GOING BABY-FRIENDLY

Historically hospitals have been huge barriers to breastfeeding success for women. A lot of research has been done in this area over the years and many hospitals around the country have adopted policies that support breastfeeding, removing some of the barriers.[21] The Breastfeeding Friendly Hospital Initiative is a global program sponsored by UNICEF and the World Health Organization (WHO). It has been shown to improve both short-term and long-term breastfeeding outcomes.[22] It outlines the Ten Steps to Successful Breastfeeding that all hospitals should follow. Hospitals that successfully implement these steps can receive the Baby-Friendly Hospital award. To date, more than 20,000 maternity facilities in 150 countries around the world have earned the baby-friendly designation.

The 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.
5. Show mothers how to breastfeed and how to maintain lactation, even if they are separated from their infants.
6. Give infants no food or drink other than breast-milk, unless medically indicated.
7. Practice rooming in—allow mothers and infants to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no pacifiers or artificial nipples to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or birth center.

The ten steps are endorsed and promoted by the major maternal and child health authorities in the United States, including the following:

- American Academy of Family Physicians
- American Academy of Pediatrics
- U.S. Preventive Services Task Force
- U.S. Surgeon General

Learn more about the Ten Steps to Successful Breastfeeding and how your facility can become baby-friendly.

If your facility does not provide onsite birthing services, these steps and messages can still be provided to pregnant and postpartum women at any health care encounter. Consider also fostering a breastfeeding-friendly environment at your facility by encouraging things such as a lactation room (for patients and employees) and formation of breastfeeding support groups.

AVOID UNNECESSARY SUPPLEMENTATION

Supplemental feeding should not be given to breastfed infants unless there is a medical indication for such feedings.[23-27] When an infant takes a supplement, instead of nursing, it can prevent the establishment of maternal milk supply and have adverse effects on breastfeeding (e.g., delayed lactogenesis, maternal engorgement). Supplements also may alter infant bowel flora, sensitize the infant to allergens, and can sometimes interfere with maternal–infant bonding and infant weight gain.

The human microbiome development around birth and its impact on a child's future health is an exploding area of research. Breastfed and formula-fed infants have strikingly different gut microbiomes. Breastfed babies have a lower gut pH of approximately 5.1-5.4 throughout the first six weeks that is dominated by bifidobacteria with reduced pathogenic microbes such as E. coli, bacteroides, clostridia, and streptococci.[13] Babies fed formula have a high gut pH of approximately 5.9-7.3 with a variety of putrefactive bacterial species.[13] Once dietary supplementation begins, the bacterial profile of breastfed infants resembles that of formula-fed infants in which bifidobacteria are no longer dominant, and the development of obligate anaerobic bacterial populations occurs.[13]

Breast feeding results in a healthier microbiome that may influence future health when compared to formula feeding in infants.

Relatively small amounts of formula supplementation of breastfed infants (one supplement per 24 hours) will result in shifts from a breastfed to a formula-fed gut flora pattern.[28] With the introduction of supplementary formula, the gut flora in a breastfed baby becomes almost indistinguishable from normal adult flora within 24 hours.[15] If breast milk were again given exclusively, it would take two to four weeks for the intestinal environment to return again to a state favoring the gram-positive flora.[15,16] Early shifts in infant gut pH and bacterial population may be linked to an increased risk for type I diabetes, an increased risk of cow's milk allergy and an increased risk of inflammatory bowel disease.[17,18,29-31] More research is needed in this area.

STAGES OF LACTOGENESIS

Lactogenesis (milk production) occurs in three phases:

- **Stage I** occurs about 12 weeks before delivery.
- **Stage II** begins with the sudden withdrawal of pregnancy hormones at the delivery of the placenta. After stage II, continued milk production is dictated by the infant.

- **Stage III**, formally called galactopoiesis, is the establishment of a mature milk supply.

MEDICAL INDICATIONS FOR SUPPLEMENTATION[32]

POTENTIAL INFANT INDICATIONS

- Asymptomatic hypoglycemia that is unresponsive to appropriate frequent breastfeeding
- Clinical and lab evidence of dehydration
- High sodium, poor feeding or lethargy that is not improved after proper management of breastfeeding
- Delayed lactogenesis II (onset of copious milk greater than 72 hours postpartum) with excessive weight loss
- Insufficient intake despite an adequate milk supply
- Neonatal jaundice associated with starvation, where breastmilk intake is poor despite appropriate intervention (please refer to the Academy of Breastfeeding Medicine's "Jaundice in the Breastfed Infant" protocol for details on managing jaundice and protecting breastfeeding)

POTENTIAL MATERNAL INDICATIONS

- Delayed lactogenesis II (day 3–5 or later, not easily correctable)
- Retained placenta
- Sheehan's syndrome
- Primary glandular insufficiency (occurs in < 5% of women)
- Poor breast growth during pregnancy
- Minimal indications of lactogenesis
- Some breast pathologies or prior breast surgeries
- Intolerable pain during feedings, unrelieved by interventions

PennState Health Children's Hospital provides a Newborn Weight Tool in which weight loss nomograms for healthy newborns by hour of age can be found.

ROUTES FOR SUPPLEMENTATION

There are many available alternatives to using a bottle when supplementation is necessary. Milk flows freely and quickly from bottles, making them a very easy feeding method for most babies.[27] Because of their ease, babies may develop what is known as "bottle preference." This occurs when a baby, who has been fed via a bottle, then begins to refuse to go to breast. Such babies may cry at the breast, turn their heads, and push away. This is a very frustrating and emotionally painful scenario for mothers, who may be working hard to make breastfeeding work. It is also a difficult situation to correct, although it can usually be done with patience and time. If a newborn needs a supplement, it is important to realize that alternatives to using a bottle do exist and to become familiar with how to implement at least one of these methods:

- Syringe feeding
- Cup or spoon feeding
- Finger feeding
- Supplemental syringe at the breast
- Supplemental tube at the breast

PREFERRED SUPPLEMENTATION IN ORDER OF PREFERENCE

1. Mother's own milk
2. Donor human breastmilk
3. Protein hydrolysate formulas
4. Cow's milk formula
5. Soy formula

Donor human milk is available through many local milk-sharing organizations, as well as through the Human Milk Banking Association of North America. To learn more about donor human milk, or to find a milk bank near you, visit the website for Human Milk Banking Association of North America.

HOW MUCH MILK SHOULD A NEWBORN TAKE?[23]

- 1st 24 hours of life 2–10 mL/feed
- 24–48 hours of life 5–15 mL/feed
- 48–72 hours of life 15–30 mL/feed
- 72–96 hours of life 30–60 mL/feed

Over-feeding of newborns is a common problem. When a baby feeds on demand at the breast, he or she will typically pull away or stop sucking when full. When an infant is being fed by bottle, large volumes may flow quickly, leading to over-distention of the stomach. A newborn's stomach is initially the size of a grape, and a 3-day-old's stomach is the size of a cherry tomato. By ten days of age, the stomach is the size of a lime. Over-distention of an infant's stomach can cause pain, fussing, crying, and back-arching.[33] These behaviors are often mistaken for hunger signs, leading to more over-feeding and can potentially erode a mother's confidence. Understanding the normal volumes for supplementation can decrease over-feeding.

HOSPITAL FOLLOW-UP

The American Academy of Pediatrics policy statement, published in 2012, states that mothers and babies should have appropriate follow-up within 48 hours of hospital discharge.[2] In countries such as the United States, where discharge is common before or by three days of age, appointments should be made prior to discharge for an office or home visit, within three to five days of age.[2,34]

Many mothers leave the hospital before their milk comes in. During the first one to two days home from the hospital, babies who are having feeding issues may loose excessive

amounts of weight, become dehydrated or experience dehydration-induced exacerbation of their physiologic jaundice. A policy of close follow-up ensures infant safety. Close follow-up also aids maternal confidence and allows the opportunity to help mothers with issues such as sore nipples and engorgement. Babies should continue to be followed closely in the outpatient setting until they are gaining weight and any jaundice is on the decline.

TONGUE TIE

About 4-11% of infants are born with tongue tie (ankyloglossia).[35] It can interfere with feeding. Symptoms can include inability to latch onto the breast properly, inability to stay on breast once latched, poor weight gain in the infant, and nipple soreness in the mother. Studies have shown a resolution in these issues with frenotomy. Some pediatricians, dentists, ear, nose and throat specialists, and family physicians are skilled in evaluating and treating tongue tie, but most areas around the country have limited local resources. Local Board-Certified Lactation Counsultants often know who in the area has this skill set.

Refer to Tongue Tie, a website that links a variety of good references with images.

HELP MOTHERS PREPARE FOR THE RETURN TO WORK

Encourage mothers to take a long maternity leave whenever possible—12 weeks is ideal. Help mothers plan and prepare for the return to work so that lactation can be maintained. For example, many women may not be aware that there is a federal law on pumping breaks. It is part of the Affordabe Care Act, and mandates that most employers provide a pumping space and pumping breaks.

Encourage mothers to strategize with their employer prenatally. Some employers may not be educated on the needs of the lactating mother. Providers may consider composing a letter or handout for employers of lactating women, explaining their needs. For a good example of a letter to an employer, go to the U.S. Department of Labor website. When employers support breastfeeding, breastfeeding outcomes are better.[36]

UNDERSTAND THE BASICS OF WORKING AND PUMPING

All providers who care for women should have a basic understanding of how working mothers maintain a milk supply. A baby empties the breast better than a pump, hence most women will maintain a supply better the more they can nurse directly, and the less they have to rely on pumping. The amount a mother can pump is not a reflection of how much a baby takes when drinking from the breast directly.

When mom and baby are separate, baby should only take what mom can pump during the time they are apart. Supply must equal demand. One ounce per hour is a rough estimate of needs.[37] Most moms will pump two to three times in an 8-hour work day. The baby will make up for whatever milk they still need when mom and baby are together overnight. Moms can typically stop pumping when baby is one year old. After the first birthday, a

baby can take water or cow's milk when mom is at work, and can continue to nurse when they are together.

WORLD HEALTH ORGANIZATION GROWTH CHARTS

All practitioners caring for mother-baby dyads should be following a baby's growth on the World Health Organization growth charts through age 2. The CDC charts for this age group have been recalled.

PHARMACEUTICALS AND LACTATION

There are a few medications that are contraindicated in lactating mothers. If the mother is abusing drugs, it is recommended that she not breastfeed.[38] Nicotine, methadone, and small amounts of alcohol are considered relatively safe and permissible.[38] Tobacco smokers and women who are maintained on methadone by a licensed provider may breastfeed.[38,39] Cancer chemotherapy agents are often not compatible with breastfeeding. Sedating medications with a long half- life may also be problematic as babies may become too sedated to feed well.

Standard contrast agents used for MRIs and CTs are considered safe in lactating women, however some radioactive isotopes used in imaging studies are not compatible. To learn more visit the Infant Risk Center website.

These medications, while considered safe for the infant, can reduce milk supply:[40]

- Dopaminergic drugs
- Hormones, especially estrogen
- Decongestants
- Anticholinergics and antihistamines
- Diuretics
- Antipsychotics
- Certain herbals

Progesterone-only contraception is unlikely to affect milk supply, if started once a supply is fully established. Women should be advised that a decrease in supply may occur and if it does, they can consider an alternate form of contraception. The practice of giving a dose of depo-medrol prior to hospital discharge after birth is not recommended in lactating women, as it may interfere with the normal drop in progesterone that stimulates lactogenesis II. For more information, refer to the Academy of Breastfeeding Medicine's free protocol on the use of contraception in lactating women.[41]

RESOURCES ON MEDICATIONS AND LACTATION

- Lactmed
- Infant Risk Center, (806) 352-2519, Monday-Friday, 8am-5pm CST
- *Medications and Mothers Milk: A Manual of Lactational Pharmacology* by Thomas Hale
- REPROTOX: Reproductive Toxology Center
- Epocrates or Micromedex: A number of breastfeeding proponents have not found these resources to be as helpful.

OPPORTUNITIES TO IMPROVE YOUR LACTATION KNOWLEDGE

- 1-Day Crash Course: What Every Physician Needs to Know About Breastfeeding
  - Held annually at different locations around the country in conjunction with the Academy of Breastfeeding Medicine annual meeting
  - AAFP CME credits
- IABLE: Institute for the Advancement of Breastfeeding and Lactation Education
  - Online courses for healthcare providers and staff
- Breastfeeding, Family Physicians Supporting (Position Paper)
  - Copyright © 2014 American Academy of Family Physicians
- Breastfeeding and the Use of Human Milk (Policy)
  - Copyright @ 2012 American Academy of Pediatrics
- La Leche League's online resources
  - Breastfeeding Info A to Z
- Academy of Breastfeeding Medicine's evidence-based clinical protocols
  - Hypoglycemia
  - Going Home/discharge
  - Supplementation
  - Mastitis
  - Peripartum breastfeeding management
  - Co-sleeping and breastfeeding
  - Model hospital policy
  - Human milk storage
  - Galactogogues
  - And many more
- International Breastfeeding Centre
  - Free patient handouts found under the "info and videos" section, including handouts on getting a good latch and the use of herbs to increase milk supply
- Wellstart International
  - Breastfeeding resources for health professionals
- Community resources
  - Hospital Internationally Board Certified Lactation Consultants (IBCLCs)
  - Community IBCLCs
  - La Leche League
  - Public Health Departments
  - Women, Infant, Child (WIC) program

RESOURCE LINKS

- Academy of Breastfeeding Medicine's evidence-based clinical protocols: https://www.bfmed.org/protocols
- Breastfeeding and the Use of Human Milk: http://pediatrics.aappublications.org/content/early/2012/02/22/peds.2011-3552
- Breastfeeding, Family Physicians Supporting: http://www.aafp.org/online/en/home/policy/policies/b/breastfeedingpositionpaper.html
- Federal Law on Pumping Breaks: https://www.dol.gov/agencies/whd/nursing-mothers
- Human Milk Banking Association of North America: https://www.hmbana.org/
- IABLE: Institute for the Advancement of Breastfeeding and Lactation Education: https://lacted.org/
- Infant Risk Center: https://www.infantrisk.com/
- Radiocontrast Agents: http://www.infantrisk.com/content/recommendations-radiocontrast-agents
- International Breastfeeding Centre: https://ibconline.ca/
- Lactmed: https://www.ncbi.nlm.nih.gov/books/NBK501922/
- La Leche League: https://www.llli.org/breastfeeding-info/
- Newborn Weight Tool: www.newbornweight.org
- Reproductive Toxology Center: http://reprotox.org/
- Ten Steps to Successful: https://www.babyfriendlyusa.org/
- Tongue Tie: http://www.tonguetie.net/
- U.S. Department of Labor: https://www.dol.gov/whd/regs/compliance/whdfs73.htm
- What Every Physician Needs to Know About Breastfeeding: http://www.bfmed.org/
- Wellstart International: http://wellstart.org/

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"Breastfeeding Tips and Resources" was written by Jill Mallory, MD (2014, updated 2020).

This Whole Health tool was made possible through a collaborative effort between the University of Wisconsin Integrative Health Program, VA Office of Patient Centered Care and Cultural Transformation, and Pacific Institute for Research and Evaluation.

REFERENCES

1. Amitay EL, Keinan-Boker L. Breastfeeding and childhood leukemia incidence: a meta-analysis and systematic review. *JAMA Pediatr.* 2015;169(6):e151025.
2. Johnston M, Landers S, Nobel L, Szucs K, Viehmann L. Breastfeeding and the use of human milk. *Pediatrics.* 2012;129(3):e827-841.
3. Victora CG, Bahl R, Barros AJ, et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. *Lancet.* 2016;387(10017):475-490.

4. Patnode CD, Henninger ML, Senger CA, Perdue LA, Whitlock EP. Primary care interventions to support breastfeeding: updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA.* 2016;316(16):1694-1705.
5. Guarner F, Khan AG, Garisch J, et al. World Gastroenterology Organisation Global Guidelines: probiotics and prebiotics October 2011. *J Clin Gastroenterol.* 2012;46(6):468-481.
6. Balogun OO, O'Sullivan EJ, McFadden A, et al. Interventions for promoting the initiation of breastfeeding. *Cochrane Database Syst Rev.* 2016;11:Cd001688.
7. Cohen SS, Alexander DD, Krebs NF, et al. Factors associated with breastfeeding initiation and continuation: a meta-analysis. *J Pediatr.* 2018;203:190-196.e121.
8. Burgio MA, Lagana AS, Sicilia A, et al. Breastfeeding education: where are we going? A systematic review article. *Iran J Public Health.* 2016;45(8):970-977.
9. Brockway M, Benzies K, Hayden KA. Interventions to improve breastfeeding self-efficacy and resultant breastfeeding rates: a systematic review and meta-analysis. *J Hum Lact.* 2017;33(3):486-499.
10. Mahesh PKB, Gunathunga MW, Arnold SM, et al. Effectiveness of targeting fathers for breastfeeding promotion: systematic review and meta-analysis. *BMC Public Health.* 2018;18(1):1140.
11. Hernandez-Aguilar MT, Bartick M, Schreck P, Harrel C. ABM Clinical Protocol #7: Model maternity policy supportive of breastfeeding. *Breastfeed Med.* 2018;13(9):559-574.
12. Buccini GDS, Perez-Escamilla R, Paulino LM, Araujo CL, Venancio SI. Pacifier use and interruption of exclusive breastfeeding: systematic review and meta-analysis. *Matern Child Nutr.* 2017;13(3).
13. Mackie RI, Sghir A, Gaskins HR. Developmental microbial ecology of the neonatal gastrointestinal tract. *Am J Clin Nutr.* 1999;69(5):1035s-1045s.
14. Simhon A, Douglas JR, Drasar BS, Soothill JF. Effect of feeding on infants' faecal flora. *Arch Dis Child.* 1982;57(1):54-58.
15. Gerstley JR, Howell KM, Nagel BR. Some factors influencing the fecal flora of infants. *Am J Dis Child.* 1932;43(3):555-565.
16. Brown E, Bosworth A. Studies of infant feeding VI. A bacteriological study of the feces and the food of normal babies receiving breast milk. *Am J Dis Child.* 1992;23(243).
17. Karjalainen J, Martin JM, Knip M, et al. A bovine albumin peptide as a possible trigger of insulin-dependent diabetes mellitus. *N Engl J Med.* 1992;327(5):302-307.
18. Koletzko S, Griffiths A, Corey M, Smith C, Sherman P. Infant feeding practices and ulcerative colitis in childhood. *BMJ.* 1991;302(6792):1580-1581.
19. Noel-Weiss J, Woodend AK, Peterson WE, Gibb W, Groll DL. An observational study of associations among maternal fluids during parturition, neonatal output, and breastfed newborn weight loss. *Int Breastfeed J.* 2011;6:9.
20. Chantry CJ, Nommsen-Rivers LA, Peerson JM, Cohen RJ, Dewey KG. Excess weight loss in first-born breastfed newborns relates to maternal intrapartum fluid balance. *Pediatrics.* 2011;127(1):e171-179.
21. Organization WH. *Evidence for the ten steps to successful breastfeeding.* Geneva: World Health Organization; 1998.

22. Perez-Escamilla R, Martinez JL, Segura-Perez S. Impact of the baby-friendly hospital initiative on breastfeeding and child health outcomes: a systematic review. *Matern Child Nutr.* 2016;12(3):402-417.
23. Riordan J. *Breastfeeding and Human Lactation.* 4th ed2005.
24. Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. *Pediatrics.* 2004;114(1):297-316.
25. Blomquist HK, Jonsbo F, Serenius F, Persson LA. Supplementary feeding in the maternity ward shortens the duration of breast feeding. *Acta Paediatr.* 1994;83(11):1122-1126.
26. Howard CR, Howard FM, Lanphear B, et al. Randomized clinical trial of pacifier use and bottle-feeding or cupfeeding and their effect on breastfeeding. *Pediatrics.* 2003;111(3):511-518.
27. Kellams A, Harrel C, Omage S, Gregory C, Rosen-Carole C. ABM Clinical Protocol #3: Supplementary Feedings in the Healthy Term Breastfed Neonate, Revised 2017. *Breastfeed Med.* 2017;12:188-198.
28. Bullen CL, Tearle PV, Stewart MG. The effect of "humanised" milks and supplemented breast feeding on the faecal flora of infants. *J Med Microbiol.* 1977;10(4):403-413.
29. Mayer EJ, Hamman RF, Gay EC, Lezotte DC, Savitz DA, Klingensmith GJ. Reduced risk of IDDM among breast-fed children. The Colorado IDDM Registry. *Diabetes.* 1988;37(12):1625-1632.
30. Host A, Husby S, Osterballe O. A prospective study of cow's milk allergy in exclusively breast-fed infants. Incidence, pathogenetic role of early inadvertent exposure to cow's milk formula, and characterization of bovine milk protein in human milk. *Acta Paediatr Scand.* 1988;77(5):663-670.
31. Host A. Importance of the first meal on the development of cow's milk allergy and intolerance. *Allergy Proc.* 1991;12(4):227-232.
32. ABM clinical protocol #3: hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate, revised 2009. *Breastfeed Med.* 2009;4(3):175-182.
33. Bergman NJ. Neonatal stomach volume and physiology suggest feeding at 1-h intervals. *Acta Paediatr.* 2013;102(8):773-777.
34. Flaherman VJ, Maisels MJ. ABM Clinical Protocol #22: Guidelines for management of jaundice in the breastfeeding infant 35 weeks or more of gestation-revised 2017. *Breastfeed Med.* 2017;12(5):250-257.
35. O'Shea JE, Foster JP, O'Donnell CP, et al. Frenotomy for tongue-tie in newborn infants. *Cochrane Database Syst Rev.* 2017;3:Cd011065.
36. Dinour LM, Szaro JM. Employer-based programs to support breastfeeding among working mothers: a systematic review. *Breastfeed Med.* 2017;12:131-141.
37. Dewey KG, Heinig MJ, Nommsen LA, Lonnerdal B. Maternal versus infant factors related to breast milk intake and residual milk volume: the DARLING study. *Pediatrics.* 1991;87(6):829-837.
38. Reece-Stremtan S, Marinelli KA. ABM clinical protocol #21: guidelines for breastfeeding and substance use or substance use disorder, revised 2015. *Breastfeed Med.* 2015;10(3):135-141.

39. Jansson LM. ABM clinical protocol #21: Guidelines for breastfeeding and the drug-dependent woman. *Breastfeed Med.* 2009;4(4):225-228.
40. Anderson PO. Drugs that suppress lactation, part 2. *Breastfeed Med.* 2017;12:199-201.
41. Berens P, Labbok M. ABM clinical protocol #13: contraception during breastfeeding, revised 2015. *Breastfeed Med.* 2015;10(1):3-12.