

Interventions to Promote Breast-feeding

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Historically, physicians have had little or no formal education regarding practical management of breast-feeding. Studies have documented a poor physician knowledge base about lactation.¹⁻³ This knowledge deficit is a significant obstacle to improving breast-feeding rates in the United States.

The most recent 1997 statement by the American Academy of Pediatrics recommends exclusive breast-feeding for infants during the first 6 months of life with continued breast-feeding as long as is mutually desired but at least through 1 year of life.⁴ Goals set by the World Health Organization Healthy People 2010 include a 75% breast-feeding initiation rate, a 50% continuation rate 6 months after birth, and a 25% continuation rate 12 months after birth.⁵ The most recent US data from the Ross Laboratory's Mothers' Survey from 1998 indicates an initiation rate of 64.3%, with only 28.6% of mothers continuing to breast-feed 6 months after giving birth and 16.3% continuing 1 year after giving birth (written communication, Breastfeeding trends through 1998, Mothers' Survey, Ross Products Division, Abbott Laboratories, Inc., June 2000). To improve breast-feeding rates, the Baby-Friendly Hospital Initiative advocates a 10-step program to foster breast-feeding in maternity facilities (Table 1).⁶

GENERAL CONCEPTS

Benefits of Breast-feeding

The benefits of breast-feeding for both mother and baby have been widely reported. In addition to improved cognitive development, reported benefits for the infant include fewer instances of otitis media, respiratory infection, diarrheal illness, necrotizing enterocolitis (in premature infants), allergy or atopic disease, childhood



lymphoma, type 1 diabetes mellitus, sudden infant death syndrome, and hospitalization (during the first year of life). Maternal benefits include a decreased likelihood of conception when the lactational amenorrhea method (LAM) of contraception is used, as well as increased caloric expenditure and decreased risk for some malignancies (possibly resulting from the relatively estrogen-deficient hormonal environment).

Contraindications to Breast-feeding

There are very few absolute contraindications to breast-feeding. In the United States, maternal infection with HIV is a major contraindication to breast-feeding. Rare infant metabolic disorders such as galactosemia also contraindicate exclusive breast-feeding. Various other circumstances can require temporary cessation of breast-feeding. For example, a mother with a medical condition might be taking a medication that is specifically contraindicated while breast-feeding; in this situation, it is generally recommended that she discard breast-milk for 5 half-lives after completion of the course of the particular drug. Most medications, however, can be taken while breast-feeding; adequate physician knowledge about contraindicated drugs is imperative so that patients receive accurate information. Excellent resources are available to aid the physician when choosing medications for lactating women, such as *A Reference Guide of Fetal and Neonatal Risk—Drugs in Pregnancy and Lactation*⁷ and *Medications and Mothers' Milk*.⁸ Unfortunately, the *Physicians' Desk Reference*⁹ contains limited information on this subject.

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Role of the Physician

Both primary care physicians and specialists come in contact with lactating women, and these encounters can profoundly influence women's attitudes about and success with breast-feeding. Pediatricians, obstetricians, and family practitioners in particular have a responsibility to advise and support women regarding lactation. Surgeons who are involved in the evaluation and management of breast abscesses or masses in women during lactation or who perform unrelated surgical procedures on lactating women should advise their patients about any consequences for breast-feeding. Similarly, internal medicine specialists often have to manage disorders in lactating women, and their choice of treatment can positively or negatively affect breast-feeding initiation and success. Emergency department physicians frequently treat lactating women who have specific acute problems either related or unrelated to breast-feeding. Dermatologists treat skin conditions in lactating women involving the breast (some of which are specifically related to lactation) or other unrelated locations. Because physicians from such diverse specialties encounter lactating women in their daily practice, better physician education about breast-feeding across specialties is essential.

To be true advocates of breast-feeding, physicians should have up-to-date information on the subject so they can accurately answer patients' questions, respond adequately to their concerns, and refer them when needed to the appropriate professional or agency. Many communities have resources for patient referral, such as certified lactation educators and La Leche League meetings.

The professional credential recognized by the International Lactation Consultant Association is "International Board-Certified Lactation Consultant." This certification requires extensive training in both breast-feeding assistance and direct patient-care situations, as well as passage of a rigorous examination. Specific requirements depend on prior educational background, and recertification is required every 5 years to maintain board certification. Not all providers acting as lactation consultants are board certified.

La Leche League, an international organization, provides mother-to-mother support along with information and education about breast-feeding. At regular meetings, women who have successfully breast-fed provide assistance and advice to less experienced women.

Common breast-feeding problems (eg, positioning problems, sore nipples, engorgement) often require substantial support, follow-up, and experience that are not available during the routinely short postpartum

Table 1. Baby-Friendly Hospital Initiative: 10 Steps to Successful Breast-feeding

1. Have a written breast-feeding policy that is routinely communicated to all health care staff
2. Train all health care staff in skills necessary to implement the breast-feeding policy
3. Inform all pregnant women about the benefits and management of breast-feeding
4. Help mothers initiate breast-feeding within 30 min after birth
5. Show mothers how to breast-feed and how to maintain lactation even when they are separated from their infants
6. Give newborns no food or drink other than breast milk, unless medically indicated
7. Allow the mother and infant to remain together 24 hours per day
8. Encourage breast-feeding on demand
9. Give no artificial teats or pacifiers to breast-feeding infants
10. Foster the establishment of breast-feeding support groups and refer mothers to them at discharge from the hospital or clinic

Adapted with permission from Protecting, promoting and supporting breast-feeding: the special role of maternity services. A joint WHO/UNICEF statement. *Int J Gynaecol Obstet* 1990;31(suppl 1):171-83.

hospital stay. Consequently, breast-feeding educators, La Leche League meetings, peer counselors, and other resources can play a valuable role in providing basic breast-feeding management after hospital discharge.

ANTEPARTUM INTERVENTIONS

By the end of their first trimester, most women have made a decision as to how they plan to feed their infants. Therefore, it is incumbent upon physicians to educate patients about the benefits of breast-feeding preconceptionally or early in gestation. Physicians in primary care and in obstetrics and gynecology can provide information on breast-feeding to women of child-bearing age during the course of regular office visits for routine examinations or for contraceptive counseling. Plans for infant feeding definitely should be discussed at preconceptional visits. Such visits also should specifically address the possible adverse effects on pregnancy and lactation of any preexisting medical condition in the woman and of any medication she is taking.

Studies have shown that many factors can influence a woman's decision about what method to use to feed her infant. Positive influences that lead to higher

Table 2. Alternative Feeding Methods for Donated/Expressed Human Milk or Infant Formula**Cup feeding**

The infant is allowed to lap supplement from a medicine cup or specially designed cup feeder

Spoon feeding

The infant is allowed to lap supplement from a spoon

Finger feeding

The infant is allowed to suck on the parent's finger, with the soft side of the finger directed toward the infant's mouth; a small tube is placed on top of the finger and attached to a syringe filled with small amounts of supplement

Supplemental nursing system

A syringe or container filled with small amounts of supplement is attached to a small tube, which is loosely taped to the breast so that the end of the tubing corresponds to the nipple; the infant is then fed at the breast (mechanism can be constructed with a syringe and tubing available in the hospital or can be purchased commercially)

breast-feeding rates include a higher educational level, a higher socioeconomic status, positive opinions about breast-feeding held by family members (particularly the spouse), informed advice during prenatal care, attendance at prenatal classes, and older maternal age.^{10,11} A physician should attempt to take advantage of these variables to promote breast-feeding. For example, an excellent time to reaffirm the benefits of breast-feeding to the patient is in the presence of the other supportive family members or friends.

During the initial prenatal visit, the physician should discuss the patient's options regarding a method of feeding the infant, with the partner present if possible. If the patient is undecided, the physician can provide information on the benefits of breast-feeding and indicate a willingness to provide further information and assistance, as needed. If the patient states that she does not wish to breast-feed, the physician should explore the reasons behind this decision and try to correct any mistaken notions that she might have.

While performing a breast examination, which should occur during the initial prenatal visit, a physician should note any anatomic variations or breast scars and counsel the patient about potential consequences for lactation or breast-feeding in a supportive way. Most women should be assured that there is no need for special breast preparations during pregnancy. In subsequent prenatal visits, the physician should

review the patient's knowledge about breast-feeding and address any concerns she might have (eg, will she produce enough milk for her infant). Whether patients express this concern or not, they should be told that most women will be able to make sufficient milk for their infants. In subsequent prenatal visits, the physician should recommend breast-feeding and birthing classes and discuss the choice of an infant-care provider, stressing the value of finding one with a supportive view of breast-feeding.

Anatomic Variations

Anatomic variations encountered during the prenatal breast examination can affect breast-feeding. Augmentation mammoplasty is a popular procedure that rarely adversely affects lactation. More specifically, having silicone implants does not preclude breast-feeding. As long as an implant was not placed using a periareolar incision, lactation most likely will not be adversely affected. When a periareolar incision is used, there is an increased probability that nerve damage or severing of ducts has occurred. Breast-feeding can still be successful when the latter situation occurs, but the infant's growth must be carefully monitored to ensure adequate nutrition. Another possible concern regarding breast-feeding in patients with implants exists when the reason that the implants were placed was an underlying absolute lack of breast tissue; these patients and their infants' growth also should be observed more closely. Physicians should ask such patients if they have noticed any breast growth during pregnancy, which would suggest the presence of breast tissue.

Reduction mammoplasty is more destructive than augmentation. Surgery frequently involves a circumferential incision around the nipple that results in damage to nerves and interruption of ducts. Although patients who have undergone this procedure can breast-feed, the growth of their infants should be followed very closely. Frequently, these women can have a rewarding breast-feeding experience by using supplementation, as needed, from a supplemental nursing system (Table 2). Donor milk from a milk bank can also be offered in these situations.

Evidence of other breast surgeries performed for nonmalignant breast disease is frequently seen during the initial prenatal visit. In general, women who have had such surgery need to be reassured and counseled in a supportive fashion. There is an increased risk for inadequate milk supply that is related to placement of the incision. Periareolar incisions are again of greatest concern,¹² and infant growth should be carefully monitored. On a similar note, physicians might encounter

Table 3. Infants Requiring Monitoring for Hypoglycemia

Infants who are:

- Small for gestational age (ie, less than the 10th percentile)
- Large for gestational age
(ie, greater than the 10th percentile)
- Of low birth weight (less than 2,500 g)
- The smaller discordant twin

Infants who have:

- A mother with diabetes
- Prior asphyxia
- Respiratory distress
- Hypothermia/cold stress
- Erythroblastosis fetalis (Rh disease)
- Polycythemia (ie, a hematocrit greater than 70%)
- Midline defects
- Microphallus
- Beckwith-Wiedemann syndrome

Adapted with permission from Academy of Breastfeeding Medicine. Guidelines for glucose monitoring and treatment of hypoglycemia in breastfed neonates (approved 11/11/99). ABM News and Views 1999;5(4):12-3.

should be available. Guidelines that can help a mother assess her milk supply are provided in Table 4.

Parents should again be told that early supplementation will decrease the infant's suckling, which in turn will decrease milk supply. Moreover, such supplementation begins a cycle that is often difficult to break. Only when medically indicated should supplements be given. Because the gastric emptying time is longer for formula than for breast milk, mothers sometimes perceive their infants' lack of hunger at the next scheduled feeding after receiving formula as indicating that the formula is more satisfying than breast milk. They also can mistakenly believe that they must not have an adequate supply of breast milk. Education can help overcome these common misconceptions. If a mother is concerned that her infant is not getting an adequate amount of breast milk, she should be encouraged to have the infant weighed, which will provide objective documentation of infant growth. The number of women who discontinue breast-feeding because of a perceived inadequate supply of milk far exceeds the number of women who truly do not make sufficient quantities of milk.

Subsequent Postpartum Period (Return to Work)

Research has shown that support received from the prenatal care provider at the 6-week postpartum visit is

Table 4. Guidelines for Assessing Adequacy of Maternal Milk Supply*

- A newborn normally should have 6 or more wet diapers daily once the mother's milk has come in
- A newborn should be weighed and medically assessed 48 to 72 hours after discharge to detect jaundice, dehydration, or a $\geq 8\%$ –10% weight loss from birth weight
- Continued weight loss beyond 5 to 6 days of life should be investigated and treated
- An infant should defecate at least daily and frequently will defecate after each feeding
- An infant should appear contented after completion of the feeding

*Milk transfer should be assessed with any sign of an inadequate milk supply. (The assistance of a lactation consultant might prove valuable in this regard.)

positively correlated with breast-feeding continuation at 4 months.²⁴ During the postpartum assessment, the physician should ask how breast-feeding is progressing and if the patient has any concerns. The benefits of breast-feeding should be reiterated. Moreover, the patient should be given information about group support services and should be told whom to contact should problems arise.

If the mother plans to return to work outside the home, the possible implications for breast-feeding should be discussed. In general, women employed in professional occupations or in part-time positions have longer durations of breast-feeding than do other employed women. If maternity leave can be extended past 6 weeks after delivery, the benefits are obvious. Often, however, women must return to full-time employment 6 weeks after giving birth (if not earlier). In these cases, the mother should return to work on a Wednesday or Thursday to allow a more gradual transition to the full workweek. In some situations, the mother will be able to visit the infant at some time during the day to provide an additional feeding. If this is not possible, the mother should begin pumping breast milk in anticipation of return to work and instruct the day-care provider on feeding the infant expressed breast milk. The mother can begin pumping prior to return to work and date and store the milk in a freezer for use after she returns to work. Having a supply of stored breast milk can reduce the stress of pumping an adequate milk supply on a daily basis. Someone other than the mother should begin feeding a bottle of expressed breast milk to the infant occasionally 1 to 2 weeks prior to the mother's return to work.

BREAST-FEEDING: EDUCATIONAL RESOURCES

Several excellent texts are available to the interested reader, including (but not limited) to *Breastfeeding and Human Lactation*; *Breastfeeding: A Guide for the Medical Professional*; and the La Leche League's *The Breastfeeding Answer Book*.^{1,2,3} The Academy of Breastfeeding Medicine is a physician organization fostering physician education and research regarding lactation. Valuable information appears on their Web site (www.bfmed.org).

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The mother should have a sanitary place available to pump breast milk. Milk can be stored in an insulated container with a chill pack, if a refrigerator is not available. Not all pumps are of similar quality and efficiency. If the mother plans to pump routinely during work breaks, a bilateral electric breast pump is most efficient. Double electric pump apparatus are associated with higher maternal prolactin levels.

Skipped pumping or an abrupt change in feeding frequency is likely to predispose the mother to milk stasis and breast infections. Patients should be instructed to call their physician if they have any signs or symptoms of these problems, including tender and persistent lumps in the breast after feeding, redness of the breast, and fever. If a breast infection does occur, prompt treatment is necessary but breast-feeding should continue. The infection is not dangerous to a full-term, healthy infant, and cessation of breast-feeding during mastitis increases the incidence of breast abscess.

Contraception

Spacing of pregnancies should be discussed at the 6-week postpartum visit. According to a recent study, optimal pregnancy spacing resulting in the lowest risk for preterm birth, low birth weight, or small-for-gestational-

age infants is 18 to 23 months between consecutive births.²⁵ Yet contraceptive options are not all equal with respect to breast-feeding success. The reported effectiveness of LAM is approximately 98% in the first 6 postpartum months.²⁶⁻²⁸ To use this method reliably, a woman should breast-feed her infant exclusively during the first 6 months after giving birth. She should not have resumed menses and should not be providing the infant with supplemental food or drink. Feeding should occur at least 8 times daily, with no more than 6 hours elapsing between feedings. If she does not meet these criteria, supplemental contraception is advisable if pregnancy is not desired.

For patients not meeting the criteria for LAM and needing additional contraception, the effect various contraceptive options can have on lactation should be considered. Barrier methods of contraception have no impact on breast-feeding; a lubricant is sometimes necessary because of vaginal atrophy, which can be associated with lactation. Using an intrauterine device is another option that has little effect on lactation. Progesterone-only methods of contraception also are compatible with breastfeeding.²⁹⁻³¹ Most reports on progesterone contraception and breast-feeding have studied patients who have begun treatment 4 to 6 weeks postpartum. Hormonally, the decline in progesterone after delivery is essential for beginning stage II of lactogenesis, which is marked by a dramatic increase in milk volume on day 2 to 3 postpartum.³² Although progesterone does not inhibit established lactation, it is advisable to begin progesterone-only contraception 4 or more weeks after delivery to avoid the potential risk of decreasing milk supply when it is initiated immediately postpartum. Other factors might dictate earlier use in some patients.

Estrogen-containing oral contraceptive pills can have an adverse effect on milk supply.³³ Because the effect is predominantly estrogen mediated, the lowest dose of estrogen possible is most prudent if an estrogen-containing pill must be used. Pills are now available containing doses as low as 20 to 30 µg of ethinyl estradiol. Again, it is best that patients begin taking these pills later during lactation (ie, at least 6 weeks postpartum) when an adequate milk supply has been well established. The patient should be instructed about potential side effects and should call her physician if any concerns about milk supply develop.

CONCLUSIONS

Physicians have many opportunities to positively influence women's attitudes about and experience with breast-feeding. Early recommendations from the

physician, especially education about the benefits of breast-feeding, can affect a patient's decision to choose this method of feeding her infant. Many of the procedures followed by hospitals during maternity care also can play a role in breast-feeding success. Most importantly, breast-feeding should be initiated within the first 30 minutes to 1 hour after birth, and breast-fed newborns should not be exposed to any other method of feeding, unless medically indicated. The infant should be fed on demand and allowed to stay with the mother. Moreover, breast-fed newborns should not be given artificial pacifiers. Women should be told where they can turn after hospital discharge for informed breast-feeding support and information. By making these ideas part of their practice, physicians and hospitals will truly promote the best interest of mothers and babies. **HP**

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