Massachusetts Breastfeeding Resource Guide

2008 Edition ©

Massachusetts Breastfeeding Coalition

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Massachusetts Breastfeeding Coalition

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Massachusetts Breastfeeding Coalition

Dear Provider:

The Massachusetts Breastfeeding Coalition has created the *Massachusetts Breastfeeding Resource Guide* to help you assist women in making an informed infant feeding choice and provide resource listings for breastfeeding support and services. The creation of this handbook is part of a statewide effort to encourage and support breastfeeding throughout the health care system and help the Commonwealth reach the national Healthy People 2010 breastfeeding goals of 75% of mothers initiating breastfeeding, 50% continuing to breastfeed at six months, and 25% continuing to breastfeed at one year.

This guide is for those who are working with pregnant and postpartum women, and infants. It is a tool to answer such questions as:

- How can I as a provider learn more about breastfeeding?
- Where can I send a woman for breastfeeding classes?
- Where can I find a breast pump for a new mother?
- How can a mother get help with a special breastfeeding problem?
- Where can I find good written materials about breastfeeding?
- What activities are being done to promote and support breastfeeding?

Although comprehensive, this handbook is not all encompassing, and we encourage you to read as many materials as you need. We have provided information to connect the reader to a broad network of breastfeeding promotion, protection, and support resources.

We encourage you to familiarize yourself with the resources in this guide and to promote and support breastfeeding by making the resources in this handbook available to your colleagues and to the women and families with whom you work.

Thank you for your efforts to promote, protect and support breastfeeding in Massachusetts.

. . . . . Statements on Breastfeeding

Massachusetts Breastfeeding Coalition

The Massachusetts Breastfeeding Coalition (MBC) recognizes that

• breastfeeding is the normal and natural way to provide optimal nutritional, immunological, and emotional nurturing for the growth and development of infants in the US.[1-2] The unique and unequaled nutrients, enzymes, growth factors, hormones, immunological, and anti-inflammatory properties of human milk help protect infants from respiratory disease, otitis media, gastroenteritis, and Sudden Infant Death Syndrome.[3-7] Beyond infancy, the properties of breastmilk contribute to protection against childhood cancers, insulin dependent diabetes, allergy, and Crohn's disease.[8-11] Breastfed infants show improved cognitive development.[12-13]

• breastfeeding contributes to women's health by offering protection for some women against breast and ovarian cancers and osteoporosis, and by increasing spacing between pregnancies.[14-17]

• breastfeeding is a basic human right. For women, breastfeeding enhances a woman's self esteem and body image. It is an empowering experience which strengthens the health and well being of the next generation of entire populations. For children, breastfeeding fulfills the right to attain the highest standard of health.[18]

• breastfeeding provides positive economic advantages to both families and societies. It ensures a safe, secure, and self-reliant food source that is ecologically sound, nutritionally efficient, and complete. The improved health status of both infants and mothers as a result of breastfeeding means substantial savings in health care costs.[19]

• breastfeeding exclusively to the age of about six months, then continuing breastfeeding and complementary foods for up to two years or beyond is the optimal method for feeding infants and young children.

• breastfeeding prevalence in the US is variable. Of great concern are the low rates of exclusive breastfeeding, and initiation rates that remain low among regional and socioeconomic groups. While approximately one half of new mothers initiate some amount of breastfeeding, less than one quarter of these mothers are still breastfeeding at six months.[20]

• in order to meet the national health goals for 2010, of 75% initiation rate, 50% continuation of breastfeeding to six months, and 25% continuation to one year[21], breastfeeding promotion, protection, and support are needed from all sectors of society, including all levels of government, health professional associations, health care institutions, health professionals, public facilities, work sites, educational institutions, women's groups, unions, parent groups, religious organizations, social agencies, and individuals.

The MBC aims to establish breastfeeding as the cultural norm for infant feeding in Massachusetts. To achieve this aim the MBC

• supports and works to implement the international infant feeding standards held within these publications

- *International Code of Marketing of Breastmilk Substitutes* (and all subsequent World Health Assembly resolutions concerning infant and young child nutrition; (endorsed by US in 1994)[22]
- *Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services*[23]

- *Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding*(signed by the US in 1990)[24]
- *Baby Friendly Hospital Initiative*[25]

• supports and works to implement national breastfeeding improvement goals as stated in the following publications

- *Surgeon General's Report 1984*[26]
- *Healthy People 2010*[21]
- *Call to Action: Better Nutrition for Mothers, Children, and Families (1991)*[27]
- *Nutrition Action Themes: Report in Response to the International Conference on Nutrition*[28]
- *HHS Blueprint for Action on Breastfeeding*[29]
- *Breastfeeding in the United States: A National Agenda*[30]

• works to implement strategies that advance public awareness and acceptance of the importance of breastfeeding, that enable women to breastfeed into the second year and beyond, and support a woman's right to breastfeeding anytime, anywhere

• advocates that all levels of government give full support to the International Code and develop appropriate social and legislative measures to implement the Code and monitor compliance; support the Baby Friendly Hospital Initiative in all health care agencies and communities; develop health care policies that endorse breastfeeding as the optimal means of feeding infants; sanction the right to breastfeed as a human right; and implement work place legislation that ensures a breastfeeding woman is enabled to breastfeed when resuming her position in the work place

• advocates that health professional associations and health care agencies develop and adopt breastfeeding policy statements and educate their membership or personnel on its implementation. Health care professionals working with pregnant women and new parents should receive accurate and continuous education about breastfeeding and support research to monitor and improve breastfeeding practices

• advocates that educational institutions ensure that curricula at all levels, preschool to post secondary, include appropriate breastfeeding information and that post secondary institutions facilitate research to improve breastfeeding practices

• advocates that non-governmental organizations and consumer groups monitor the implementation of public policy on infant feeding and identify consumer and community needs to support breastfeeding and that they play an advocacy role and develop educational tools and programs to educate the public on the importance of breastfeeding

• advocates that public institutions and the commercial sector educate employees on women's rights to breastfeed and have policies in place that ensure these rights are respected

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A statement of the Massachusetts Breastfeeding Coalition and not necessarily of its member organizations

American Academy of Pediatrics & The American College of Obstetricians and Gynecologists (AAP & ACOG)

Breast milk is the ideal food for all healthy full-term infants. Breastfeeding alone can satisfy the infant's nutritional needs for the first 6 months of life.

American Dietetic Association (ADA)

Breastfeeding is the optimal way of providing ideal food for the health, growth, and development of human infants while simultaneously benefiting the lactating mother. Exclusive breastfeeding should be the norm from birth until infants are 5 to 6 months old followed by the introduction of age-appropriate solid foods and juices while breastfeeding continues for the first year of life or beyond.

National WIC Association

Breastfeeding has been shown to have significant advantages for women and infants. As health professionals have a responsibility to provide services designed to optimize the health of their clients, WIC health professionals are committed to encouraging breastfeeding as the preferred method of infant feeding.

International Lactation Consultant Association (ILCA)

…almost all women are physically capable of nourishing their infants on breast milk alone for the first half-year… adolescents should be encouraged to breastfeed… obstetric medication and anesthesia interfere with innate feeding behavior of the infant, hence,…such medication should be used as sparingly as is compatible with maternal and infant health.

Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN)

AWHONN recognizes the many benefits of breastfeeding and advocates breastfeeding as the optimal method of infant feeding. AWHONN supports the belief that the public should be informed about the advantages of breastfeeding. Ideally this information should be shared during pregnancy and in the immediate postpartum period so that the mother can make an informed decision about infant feeding.

Innocenti Declaration

…all women should be enabled to practice exclusive breastfeeding and all infants should be fed on breast milk from birth to 4 to 6 months of age. Thereafter, children should continue to be breastfed, while receiving appropriate and adequate complementary foods, for up to two years of age or beyond.

World Health Organization

Breast milk alone is the best possible food and drink for a baby in the first six months of life. Babies should start to breastfeed as soon as possible after birth. Virtually every mother can breastfeed her baby. Frequent sucking is needed to produce enough breast milk for the baby's needs. Bottle-feeding can lead to serious illness and death. Breastfeeding should continue well into the second year of a child's life and beyond.

American Academy of Family Physicians

Breastfeeding is the physiologic norm for both mothers and their children. The AAFP recommends that all babies, with rare exceptions, be breastfed and/or receive expressed human milk exclusively for about the first six months of life. Breastfeeding should continue with the addition of complementary foods throughout the second half of the first year. Breastfeeding beyond the first year offers considerable benefits…

Breastfeeding and the Use of Human Milk

Section on Breastfeeding

Pediatrics 2005;115;496-506
DOI: 10.1542/peds.2004-2491

AMERICAN ACADEMY OF PEDIATRICS

POLICY STATEMENT

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children

Section on Breastfeeding

Breastfeeding and the Use of Human Milk

ABSTRACT. Considerable advances have occurred in recent years in the scientific knowledge of the benefits of breastfeeding, the mechanisms underlying these benefits, and in the clinical management of breastfeeding. This policy statement on breastfeeding replaces the 1997 policy statement of the American Academy of Pediatrics and reflects this newer knowledge and the supporting publications. The benefits of breastfeeding for the infant, the mother, and the community are summarized, and recommendations to guide the pediatrician and other health care professionals in assisting mothers in the initiation and maintenance of breastfeeding for healthy term infants and high-risk infants are presented. The policy statement delineates various ways in which pediatricians can promote, protect, and support breastfeeding not only in their individual practices but also in the hospital, medical school, community, and nation. *Pediatrics* 2005;115:496–506; *breast, breastfeeding, breast milk, human milk, lactation.*

ABBREVIATIONS. AAP, American Academy of Pediatrics; WIC, Supplemental Nutrition Program for Women, Infants, and Children; CMV, cytomegalovirus; G6PD, glucose-6-phosphate dehydrogenase.

INTRODUCTION

Extensive research using improved epidemiologic methods and modern laboratory techniques documents diverse and compelling advantages for infants, mothers, families, and society from breastfeeding and use of human milk for infant feeding.[1] These advantages include health, nutritional, immunologic, developmental, psychologic, social, economic, and environmental benefits. In 1997, the American Academy of Pediatrics (AAP) published the policy statement *Breastfeeding and the Use of Human Milk*.[2] Since then, significant advances in science and clinical medicine have occurred. This revision cites substantial new research on the importance of breastfeeding and sets forth principles to guide pediatricians and other health care professionals in assisting women and children in the initiation and maintenance of breastfeeding. The ways pediatricians can protect, promote, and support breastfeeding in their individual practices, hospitals, medical schools, and communities are delineated, and the central role of the pediatrician in coordinating breastfeeding management and providing a medical home for the child is emphasized.[3] These recommendations are consistent with the goals and objectives of *Healthy People 2010*,[4] the Department of Health and Human Services' *HHS Blueprint for Action on Breastfeeding*,[5] and the United States Breastfeeding Committee's *Breastfeeding in the United States: A National Agenda*.[6]

This statement provides the foundation for issues related to breastfeeding and lactation management for other AAP publications including the *New Mother's Guide to Breastfeeding*[7] and chapters dealing with breastfeeding in the AAP/American College of Obstetricians and Gynecologists *Guidelines for Perinatal Care*,[8] the *Pediatric Nutrition Handbook*,[9] the *Red Book*,[10] and the *Handbook of Pediatric Environmental Health*.[11]

doi:10.1542/peds.2004-2491

THE NEED

Child Health Benefits

Human milk is species-specific, and all substitute feeding preparations differ markedly from it, making human milk uniquely superior for infant feeding.[12] Exclusive breastfeeding is the reference or normative model against which all alternative feeding methods must be measured with regard to growth, health, development, and all other short- and long-term outcomes. In addition, human milk-fed premature infants receive significant benefits with respect to host protection and improved developmental outcomes compared with formula-fed premature infants.[13–22] From studies in preterm and term infants, the following outcomes have been documented.

Infectious Diseases

Research in developed and developing countries of the world, including middle-class populations in developed countries, provides strong evidence that human milk feeding decreases the incidence and/or severity of a wide range of infectious diseases[23] including bacterial meningitis,[24,25] bacteremia,[25,26] diarrhea,[27–33] respiratory tract infection,[22,33–40] necrotizing enterocolitis,[20,21] otitis media,[27,41–45] urinary tract infection,[46,47] and late-onset sepsis in preterm infants.[17,20] In addition, postneonatal infant mortality rates in the United States are reduced by 21% in breastfed infants.[48]

Other Health Outcomes

Some studies suggest decreased rates of sudden infant death syndrome in the first year of life[49–55] and reduction in incidence of insulin-dependent (type 1) and non–insulin-dependent (type 2) diabetes melli-

tus,[56–59] lymphoma, leukemia, and Hodgkin disease,[60–62] overweight and obesity,[19,63–70] hypercholesterolemia,[71] and asthma[36–39] in older children and adults who were breastfed, compared with individuals who were not breastfed. Additional research in this area is warranted.

Neurodevelopment

Breastfeeding has been associated with slightly enhanced performance on tests of cognitive development.[14,15,72–80] Breastfeeding during a painful procedure such as a heel-stick for newborn screening provides analgesia to infants.[81,82]

Maternal Health Benefits

Important health benefits of breastfeeding and lactation are also described for mothers.[83] The benefits include decreased postpartum bleeding and more rapid uterine involution attributable to increased concentrations of oxytocin,[84] decreased menstrual blood loss and increased child spacing attributable to lactational amenorrhea,[85] earlier return to prepregnancy weight,[86] decreased risk of breast cancer,[87–92] decreased risk of ovarian cancer,[93] and possibly decreased risk of hip fractures and osteoporosis in the postmenopausal period.[94–96]

Community Benefits

In addition to specific health advantages for infants and mothers, economic, family, and environmental benefits have been described. These benefits include the potential for decreased annual health care costs of $3.6 billion in the United States[97,98]; decreased costs for public health programs such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)[99]; decreased parental employee absenteeism and associated loss of family income; more time for attention to siblings and other family matters as a result of decreased infant illness; decreased environmental burden for disposal of formula cans and bottles; and decreased energy demands for production and transport of artificial feeding products.[100–102] These savings for the country and for families would be offset to some unknown extent by increased costs for physician and lactation consultations, increased office-visit time, and cost of breast pumps and other equipment, all of which should be covered by insurance payments to providers and families.

CONTRAINDICATIONS TO BREASTFEEDING

Although breastfeeding is optimal for infants, there are a few conditions under which breastfeeding may not be in the best interest of the infant. Breastfeeding is contraindicated in infants with classic galactosemia (galactose 1-phosphate uridyltransferase deficiency)[103]; mothers who have active untreated tuberculosis disease or are human T-cell lymphotropic virus type I– or II–positive[104,105]; mothers who are receiving diagnostic or therapeutic radioactive isotopes or have had exposure to radioactive materials (for as long as there is radioactivity in the milk)[106–108]; mothers who are receiving antimetabolites or chemotherapeutic agents or a small number of other medications until they clear the milk[109,110]; mothers who are using drugs of abuse ("street drugs"); and mothers who have herpes simplex lesions on a breast (infant may feed from other breast if clear of lesions). Appropriate information about infection-control measures should be provided to mothers with infectious diseases.[111]

In the United States, mothers who are infected with human immunodeficiency virus (HIV) have been advised not to breastfeed their infants.[112] In developing areas of the world with populations at increased risk of other infectious diseases and nutritional deficiencies resulting in increased infant death rates, the mortality risks associated with artificial feeding may outweigh the possible risks of acquiring HIV infection.[113,114] One study in Africa detailed in 2 reports[115,116] found that exclusive breastfeeding for the first 3 to 6 months after birth by HIV-infected mothers did not increase the risk of HIV transmission to the infant, whereas infants who received mixed feedings (breastfeeding with other foods or milks) had a higher rate of HIV infection compared with infants who were exclusively formula-fed. Women in the United States who are HIV-positive should not breastfeed their offspring. Additional studies are needed before considering a change from current policy recommendations.

CONDITIONS THAT ARE NOT CONTRAINDICATIONS TO BREASTFEEDING

Certain conditions have been shown to be compatible with breastfeeding. Breastfeeding is not contraindicated for infants born to mothers who are hepatitis B surface antigen–positive,[111] mothers who are infected with hepatitis C virus (persons with hepatitis C virus antibody or hepatitis C virus-RNA–positive blood),[111] mothers who are febrile (unless cause is a contraindication outlined in the previous section),[117] mothers who have been exposed to low-level environmental chemical agents,[118,119] and mothers who are seropositive carriers of cytomegalovirus (CMV) (not recent converters if the infant is term).[111] Decisions about breastfeeding of very low birth weight infants (birth weight <1500 g) by mothers known to be CMV-seropositive should be made with consideration of the potential benefits of human milk versus the risk of CMV transmission.[120,121] Freezing and pasteurization can significantly decrease the CMV viral load in milk.[122]

Tobacco smoking by mothers is not a contraindication to breastfeeding, but health care professionals should advise all tobacco-using mothers to avoid smoking within the home and to make every effort to wean themselves from tobacco as rapidly as possible.[110]

Breastfeeding mothers should avoid the use of alcoholic beverages, because alcohol is concentrated in breast milk and its use can inhibit milk production. An occasional celebratory single, small alcoholic drink is acceptable, but breastfeeding should be avoided for 2 hours after the drink.[123]

For the great majority of newborns with jaundice and hyperbilirubinemia, breastfeeding can and should be continued without interruption. In rare instances of severe hyperbilirubinemia, breastfeed-

TABLE 1. Breastfeeding Rates for Infants in the United States: Any (Exclusive)

	Actual: 2001			*Healthy People 2010* Goals[4]		
	Initiation[125]	6 mo[125]	1 y[132]	Initiation	6 mo	1 y
All women	70% (46%)	33% (17%)	18%	75%	50%	25%
Black	53% (27%)	22% (11%)	12%			
Hispanic	73% (36%)	33% (16%)	18%			
Asian	NA	NA	NA			
White	72% (53%)	34% (19%)	18%			

NA indicates that the data are not available.

ing may need to be interrupted temporarily for a brief period.[124]

THE CHALLENGE

Data indicate that the rate of initiation and duration of breastfeeding in the United States are well below the *Healthy People 2010* goals (see Table 1).[4,125] Furthermore, many of the mothers counted as breastfeeding were supplementing their infants with formula during the first 6 months of the infant's life.[5,126] Although breastfeeding initiation rates have increased steadily since 1990, exclusive breastfeeding initiation rates have shown little or no increase over that same period of time. Similarly, 6 months after birth, the proportion of infants who are exclusively breastfed has increased at a much slower rate than that of infants who receive mixed feedings.[125] The AAP Section on Breastfeeding, American College of Obstetricians and Gynecologists, American Academy of Family Physicians, Academy of Breastfeeding Medicine, World Health Organization, United Nations Children's Fund, and many other health organizations recommend exclusive breastfeeding for the first 6 months of life.‡[2,127–130] Exclusive breastfeeding is defined as an infant's consumption of human milk with no supplementation of any type (no water, no juice, no nonhuman milk, and no foods) except for vitamins, minerals, and medications.[131] Exclusive breastfeeding has been shown to provide improved protection against many diseases and to increase the likelihood of continued breastfeeding for at least the first year of life.

Obstacles to initiation and continuation of breastfeeding include insufficient prenatal education about breastfeeding[132,133]; disruptive hospital policies and practices[134]; inappropriate interruption of breastfeeding[135]; early hospital discharge in some populations[136]; lack of timely routine follow-up care and postpartum home health visits[137]; maternal employment[138,139] (especially in the absence of workplace facilities and support for breastfeeding)[140]; lack of family and broad societal support[141]; media portrayal of bottle feeding as normative[142]; commercial promotion of infant formula through distribution of hospital discharge packs, coupons for free or discounted formula, and some television and general magazine advertising[143,144]; misinformation; and lack of guidance and encouragement from health care professionals.[135,145,146]

‡ There is a difference of opinion among AAP experts on this matter. The Section on Breastfeeding acknowledges that the Committee on Nutrition supports introduction of complementary foods between 4 and 6 months of age when safe and nutritious complementary foods are available.

RECOMMENDATIONS ON BREASTFEEDING FOR HEALTHY TERM INFANTS

1. Pediatricians and other health care professionals should recommend human milk for all infants in whom breastfeeding is not specifically contraindicated and provide parents with complete, current information on the benefits and techniques of breastfeeding to ensure that their feeding decision is a fully informed one.[147–149]
   - When direct breastfeeding is not possible, expressed human milk should be provided.[150,151] If a known contraindication to breastfeeding is identified, consider whether the contraindication may be temporary, and if so, advise pumping to maintain milk production. Before advising against breastfeeding or recommending premature weaning, weigh the benefits of breastfeeding against the risks of not receiving human milk.
2. Peripartum policies and practices that optimize breastfeeding initiation and maintenance should be encouraged.
   - Education of both parents before and after delivery of the infant is an essential component of successful breastfeeding. Support and encouragement by the father can greatly assist the mother during the initiation process and during subsequent periods when problems arise. Consistent with appropriate care for the mother, minimize or modify the course of maternal medications that have the potential for altering the infant's alertness and feeding behavior.[152,153] Avoid procedures that may interfere with breastfeeding or that may traumatize the infant, including unnecessary, excessive, and overvigorous suctioning of the oral cavity, esophagus, and airways to avoid oropharyngeal mucosal injury that may lead to aversive feeding behavior.[154,155]
3. 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.[156–158]
   - The alert, healthy newborn infant is capable of latching on to a breast without specific assistance within the first hour after birth.[156] Dry the infant, assign Apgar scores, and perform the initial physical assessment while the infant

is with the mother. The mother is an optimal heat source for the infant.[159,160] Delay weighing, measuring, bathing, needle-sticks, and eye prophylaxis until after the first feeding is completed. Infants affected by maternal medications may require assistance for effective latch-on.[156] Except under unusual circumstances, the newborn infant should remain with the mother throughout the recovery period.[161]

4. Supplements (water, glucose water, formula, and other fluids) should not be given to breastfeeding newborn infants unless ordered by a physician when a medical indication exists.[148,162–165]
5. Pacifier use is best avoided during the initiation of breastfeeding and used only after breastfeeding is well established.[166–168]
   - In some infants early pacifier use may interfere with establishment of good breastfeeding practices, whereas in others it may indicate the presence of a breastfeeding problem that requires intervention.[169]
   - This recommendation does not contraindicate pacifier use for nonnutritive sucking and oral training of premature infants and other special care infants.
6. During the early weeks of breastfeeding, mothers should be encouraged to have 8 to 12 feedings at the breast every 24 hours, offering the breast whenever the infant shows early signs of hunger such as increased alertness, physical activity, mouthing, or rooting.[170]
   - Crying is a late indicator of hunger.[171] Appropriate initiation of breastfeeding is facilitated by continuous rooming-in throughout the day and night.[172] The mother should offer both breasts at each feeding for as long a period as the infant remains at the breast.[173] At each feed the first breast offered should be alternated so that both breasts receive equal stimulation and draining. In the early weeks after birth, nondemanding 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 of feeding 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.
7. Formal evaluation of breastfeeding, including observation of position, latch, and milk transfer, should be undertaken by trained caregivers at least twice daily and fully documented in the record during each day in the hospital after birth.[174,175]
   - Encouraging the mother to record the time and duration of each breastfeeding, as well as urine and stool output during the early days of breastfeeding in the hospital and the first weeks at home, helps to facilitate the evaluation process. 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.
8. 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 as recommended by the AAP.[124,176,177]
   - This visit should include infant weight; physical examination, especially for jaundice and hydration; maternal history of breast problems (painful feedings, engorgement); infant elimination patterns (expect 3–5 urines and 3–4 stools per day by 3–5 days of age; 4–6 urines and 3–6 stools per day by 5–7 days of age); and a formal, observed evaluation of breastfeeding, including position, latch, and milk transfer. Weight loss in the infant of greater than 7% from birth weight indicates possible breastfeeding problems and requires more intensive evaluation of breastfeeding and possible intervention to correct problems and improve milk production and transfer.
9. 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 to the mother during this critical period.
10. Pediatricians and parents should be aware that 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.[30,34,128,178–184] Breastfeeding should be continued for at least the first year of life and beyond for as long as mutually desired by mother and child.[185]
    - Complementary foods rich in iron should be introduced gradually beginning around 6 months of age.[186–187] Preterm and low birth weight infants and infants with hematologic disorders or infants who had inadequate iron stores at birth generally require iron supplementation before 6 months of age.[148,188–192] Iron may be administered while continuing exclusive breastfeeding.
    - Unique needs or feeding behaviors of individual infants may indicate a need for introduction of complementary foods as early as 4 months of age, whereas other infants may not be ready to accept other foods until approximately 8 months of age.[193]
    - Introduction of complementary feedings before 6 months of age generally does not increase total caloric intake or rate of growth and only substitutes foods that lack the protective components of human milk.[194]
    - 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.[195]
    - Increased duration of breastfeeding confers significant health and developmental benefits for the child and the mother, especially in delaying return of fertility (thereby promoting optimal intervals between births).[196]

- 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.[197]
- Infants weaned before 12 months of age should not receive cow's milk but should receive iron-fortified infant formula.[198]

11. All breastfed infants should receive 1.0 mg of vitamin K_1 oxide intramuscularly after the first feeding is completed and within the first 6 hours of life.[199]
    - Oral vitamin K is not recommended. It may not provide the adequate stores of vitamin K necessary to prevent hemorrhage later in infancy in breastfed infants unless repeated doses are administered during the first 4 months of life.[200]
12. All breastfed infants should receive 200 IU of oral vitamin D drops daily beginning during the first 2 months of life and continuing until the daily consumption of vitamin D-fortified formula or milk is 500 mL.[201]
    - Although human milk contains small amounts of vitamin D, it is not enough to prevent rickets. Exposure of the skin to ultraviolet B wavelengths from sunlight is the usual mechanism for production of vitamin D. However, significant risk of sunburn (short-term) and skin cancer (long-term) attributable to sunlight exposure, especially in younger children, makes it prudent to counsel against exposure to sunlight. Furthermore, sunscreen decreases vitamin D production in skin.
13. Supplementary fluoride should not be provided during the first 6 months of life.[202]
    - From 6 months to 3 years of age, the decision whether to provide fluoride supplementation should be made on the basis of the fluoride concentration in the water supply (fluoride supplementation generally is not needed unless the concentration in the drinking water is <0.3 ppm) and in other food, fluid sources, and toothpaste.
14. Mother and infant should sleep in proximity to each other to facilitate breastfeeding.[203]
15. Should hospitalization of the breastfeeding mother or infant be necessary, every effort should be made to maintain breastfeeding, preferably directly, or pumping the breasts and feeding expressed milk if necessary.

ADDITIONAL RECOMMENDATIONS FOR HIGH-RISK INFANTS

- Hospitals and physicians should recommend human milk for premature and other high-risk infants either by direct breastfeeding and/or using the mother's own expressed milk.[13] Maternal support and education on breastfeeding and milk expression should be provided from the earliest possible time. Mother-infant skin-to-skin contact and direct breastfeeding should be encouraged as early as feasible.[204,205] Fortification of expressed human milk is indicated for many very low birth weight infants.[13] Banked human milk may be a suitable feeding alternative for infants whose mothers are unable or unwilling to provide their own milk. Human milk banks in North America adhere to national guidelines for quality control of screening and testing of donors and pasteurize all milk before distribution.[206–208] Fresh human milk from unscreened donors is not recommended because of the risk of transmission of infectious agents.
- Precautions should be followed for infants with glucose-6-phosphate dehydrogenase (G6PD) deficiency. G6PD deficiency has been associated with an increased risk of hemolysis, hyperbilirubinemia, and kernicterus.[209] Mothers who breastfeed infants with known or suspected G6PD deficiency should not ingest fava beans or medications such as nitrofurantoin, primaquine phosphate, or phenazopyridine hydrochloride, which are known to induce hemolysis in deficient individuals.[210,211]

ROLE OF PEDIATRICIANS AND OTHER HEALTH CARE PROFESSIONALS IN PROTECTING, PROMOTING, AND SUPPORTING BREASTFEEDING

Many pediatricians and other health care professionals have made great efforts in recent years to support and improve breastfeeding success by following the principles and guidance provided by the AAP,[2] the American College of Obstetricians and Gynecologists,[127] the American Academy of Family Physicians,[128] and many other organizations.[5,6,8,130,133,142,162] The following guidelines summarize these concepts for providing an optimal breastfeeding environment.

General

- Promote, support, and protect breastfeeding enthusiastically. In consideration of the extensively published evidence for improved health and developmental outcomes in breastfed infants and their mothers, a strong position on behalf of breastfeeding is warranted.
- Promote breastfeeding as a cultural norm and encourage family and societal support for breastfeeding.
- Recognize the effect of cultural diversity on breastfeeding attitudes and practices and encourage variations, if appropriate, that effectively promote and support breastfeeding in different cultures.

Education

- Become knowledgeable and skilled in the physiology and the current clinical management of breastfeeding.
- Encourage development of formal training in breastfeeding and lactation in medical schools, in residency and fellowship training programs, and for practicing pediatricians.
- Use every opportunity to provide age-appropriate breastfeeding education to children and adults in the medical setting and in outreach programs for student and parent groups.

Clinical Practice

- Work collaboratively with the obstetric community to ensure that women receive accurate and

sufficient information throughout the perinatal period to make a fully informed decision about infant feeding.
- Work collaboratively with the dental community to ensure that women are encouraged to continue to breastfeed and use good oral health practices. Infants should receive an oral health-risk assessment by the pediatrician between 6 months and 1 year of age and/or referred to a dentist for evaluation and treatment if at risk of dental caries or other oral health problems.[212]
- Promote hospital policies and procedures that facilitate breastfeeding. Work actively toward eliminating hospital policies and practices that discourage breastfeeding (eg, promotion of infant formula in hospitals including infant formula discharge packs and formula discount coupons, separation of mother and infant, inappropriate infant feeding images, and lack of adequate encouragement and support of breastfeeding by all health care staff). Encourage hospitals to provide in-depth training in breastfeeding for all health care staff (including physicians) and have lactation experts available at all times.
- Provide effective breast pumps and private lactation areas for all breastfeeding mothers (patients and staff) in ambulatory and inpatient areas of the hospital.[213]
- Develop office practices that promote and support breastfeeding by using the guidelines and materials provided by the AAP Breastfeeding Promotion in Physicians' Office Practices program.[214]
- Become familiar with local breastfeeding resources (eg, WIC clinics, breastfeeding medical and nursing specialists, lactation educators and consultants, lay support groups, and breast-pump rental stations) so that patients can be referred appropriately.[215] When specialized breastfeeding services are used, the essential role of the pediatrician as the infant's primary health care professional within the framework of the medical home needs to be clarified for parents.
- Encourage adequate, routine insurance coverage for necessary breastfeeding services and supplies, including the time required by pediatricians and other licensed health care professionals to assess and manage breastfeeding and the cost for the rental of breast pumps.
- Develop and maintain effective communication and coordination with other health care professionals to ensure optimal breastfeeding education, support, and counseling. AAP and WIC breastfeeding coordinators can facilitate collaborative relationships and develop programs in the community and in professional organizations for support of breastfeeding.
- Advise mothers to continue their breast self-examinations on a monthly basis throughout lactation and to continue to have annual clinical breast examinations by their physicians.

Society
- Encourage the media to portray breastfeeding as positive and normative.
- Encourage employers to provide appropriate facilities and adequate time in the workplace for breastfeeding and/or milk expression.
- Encourage child care providers to support breastfeeding and the use of expressed human milk provided by the parent.
- Support the efforts of parents and the courts to ensure continuation of breastfeeding in separation and custody proceedings.
- Provide counsel to adoptive mothers who decide to breastfeed through induced lactation, a process requiring professional support and encouragement.
- Encourage development and approval of governmental policies and legislation that are supportive of a mother's choice to breastfeed.

Research
- Promote continued basic and clinical research in the field of breastfeeding. Encourage investigators and funding agencies to pursue studies that further delineate the scientific understandings of lactation and breastfeeding that lead to improved clinical practice in this medical field.[216]

CONCLUSIONS

Although economic, cultural, and political pressures often confound decisions about infant feeding, the AAP firmly adheres to the position that breastfeeding ensures the best possible health as well as the best developmental and psychosocial outcomes for the infant. Enthusiastic support and involvement of pediatricians in the promotion and practice of breastfeeding is essential to the achievement of optimal infant and child health, growth, and development.

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Breastfeeding (Position Paper)

AAFP Policy Statement on Breastfeeding

Breastfeeding is the physiological norm for both mothers and their children. The AAFP recommends that all babies, with rare exceptions, be breastfed and/or receive expressed human milk exclusively for about the first six months of life. Breastfeeding should continue with the addition of complementary foods throughout the second half of the first year. Breastfeeding beyond the first year offers considerable benefits to both mother and child, and should continue as long as mutually desired. Family physicians should have the knowledge to promote, protect, and support breastfeeding. (1989) (2001)

Introduction
The American Academy of Family Physicians (AAFP) has long supported breastfeeding. All family physicians, whether or not they provide maternity care, have a unique role in the promotion of breastfeeding. Family physicians understand the advantages of family-centered care and are well positioned to provide breastfeeding support in that context. Because they provide comprehensive care to the whole family, family physicians have an opportunity to provide breastfeeding education and support throughout the life cycle to all members of the family.

Family physicians may provide prenatal care and labor support, deliver the infant, help in the prompt initiation and continuation of breastfeeding, and continue caring for the baby and family. Breastfeeding education and support can be woven throughout these visits. Family physicians have the unique opportunity to emphasize breastfeeding education beginning with preconception visits and continuing throughout prenatal care, delivery, postpartum care, and during ongoing care of the family. Encouragement from a physician and other family members, especially the baby's father and maternal grandmother, are important factors in the initiation of breastfeeding.65,70,77,83 In caring for a mother's immediate and extended family, a family physician should encourage her social support system to support breastfeeding.58

History
Throughout most of history, breastfeeding was the norm, with only a small number of infants not breastfed for a variety of reasons. In the distant past, wealthy women had access to wet nurses, but with the industrial revolution this practice declined as wet nurses found higher-paying jobs. By the late 19th century, infant mortality from unsafe artificial feeding became an acknowledged public health problem. Public health nurses addressed this by promoting breastfeeding and home pasteurization of cows' milk. After the turn of the century, commercial formula companies found a market for artificial baby milks as safer alternatives to cows' milk. During this same period, infant feeding recommendations became the purview of the newly organized medical profession. Partially due to the support of physicians and a vision of "scientific" infant care, the widespread use of formula as a breastmilk substitute for healthy mothers and babies emerged in the first half of the 20th century.2,37

Throughout the middle part of the 20th century, most physicians did not advocate breastfeeding, and most women did not choose to breastfeed. Therefore, an entire generation of women-and physicians-grew up not viewing breastfeeding as the normal way to feed babies. Despite the resurgence of breastfeeding in the late 20th century in the United States, breastfeeding and formula feeding continued to be seen as virtually equivalent, representing merely a lifestyle choice parents may make without significant health sequelae.

Current attitudes concerning infant nutrition have been molded by the manufacturers of human milk substitutes who have aggressively created markets for their products. They have advertised

to physicians and directly to the public in ways that are inconsistent with the International Code of Marketing for Human Milk Substitutes (see Appendix 3).115 While much of the literature about breastfeeding distributed by formula companies is factual, omissions and images can mislead mothers, reinforce misconceptions about breastfeeding, and suggest that breastfeeding mothers also need to use formula. Physicians have been used to convey this advertising and encourage brand loyalty through "free" literature and formula samples.48 Use of commercial literature and samples has been demonstrated to decrease breastfeeding rates and increase premature weaning.112

Currently, the World Health Organization (WHO) recommends that a child breastfeed for at least two years.116 The American Academy of Pediatrics, like the AAFP, recommends that all babies, with rare exceptions, be exclusively breastfed for about six months.5 The United States Public Health Service's "Healthy People 2010" set national goals of 75% of babies breastfeeding at birth, 50% at six months, and 25% at one year.104

The United States has not yet met its breastfeeding goals. Data from1995, the most current year for which published data is available, showed that 60% of U.S. mothers initiate breastfeeding, and 22% are still doing some breastfeeding at six months. While some subpopulations come close to Healthy People 2010 initiation goals, many do not, and few mothers breastfeed exclusively.94 Unfortunately, breastfeeding rates quoted for the United States reflect data that does not distinguish between exclusive breastfeeding, breastfeeding with supplementation, and minimal breastfeeding. We have little national data on exclusive breastfeeding or breastfeeding beyond six months of age.38

Despite growing evidence of the health risks of not breastfeeding, physicians, including family physicians, do not receive adequate training about supporting breastfeeding.31,32 Although physicians make health recommendations about many aspects of infant care, many physicians still worry that advocating breastfeeding will cause parental guilt. In fact, parents may feel less guilt if they have had an opportunity to learn all the pertinent information and make a fully informed decision.61

Family physicians can make a difference in increasing breastfeeding initiation rates, and especially breastfeeding continuation rates, by advocating breastfeeding, supporting breastfeeding patients and providing appropriate, evidence-based care for breastfeeding couplets.

Health Effects

Family physicians also need to be familiar with the evidence supporting the recommendation to breastfeed. Evidence about breastfeeding's health effects is growing exponentially, and it is beyond the scope of this paper to specifically review all of the literature. Several excellent review articles outline the evidence supporting the role of breastfeeding in optimal health outcomes for mothers and children.5,62,72 Because breastfeeding is the physiologic norm, we will refer to the risks of not breastfeeding for infants, children, and mothers.

Evidence shows that breastfeeding has profound effects on the developing immune system. Babies not fed human milk have higher rates of otitis media, allergies, respiratory tract infection, necrotizing enterocolitis, urinary tract infection, and gastroenteritis in infancy. Babies who are not breastfed have a higher risk of hospitalization in the first year of life due to serious bacterial illness. They have higher rates of type 1 and type 2 diabetes, allergic disease and asthma, lymphomas, and inflammatory bowel disease later in life. They develop lower antibody titers in response to immunization.61,97,100 Studies of intelligence and development have also shown lower IQ and lower developmental scores among children who were not breastfed. 46,68

The strongest evidence indicates that these positive effects of breastfeeding are most significant with six months of exclusive breastfeeding. Most of the studies, however, show that the effects are dose-related, with improved outcomes being associated with more longer breastfeeding . Similarly, the risks increase as the period of exclusive breastfeeding decreases, with the highest risk in babies who received fed no human milk.5,97

Maternal health outcomes are also affected by breastfeeding. Mothers who do not breastfeed risk higher rates of anemia and closer child spacing. Women who have a significant lifetime history of breastfeeding have lower rates of ovarian, endometrial, and breast cancer compared with the general population. Lactation affects calcium metabolism, with increased bone density after weaning, and may decrease a woman's risk of postmenopausal osteoporosis.59

The evidence overwhelmingly supports the recommendation for breastfeeding for almost all mothers and babies. Increasingly, evidence-based practices that enhance the likelihood of successful breastfeeding have been described. Appendix 1 summarizes some of the appropriate practices. Appendix 2 lists references that may be helpful for family physicians as they support breastfeeding. The remaining portions of this paper discuss special breastfeeding issues and unique concerns of certain populations.

Special Breastfeeding Issues

Medication and Substances

Almost all prescription and over-the-counter medications taken by the mother are safe during breastfeeding. Several resources are available to help estimate the degree of drug exposure an infant will receive through breastmilk.7,47,52 Physicians must weigh the risks of replacing breastfeeding with artificial feeding against the risk of medication exposure through breastmilk. Even a temporary interruption in breastfeeding carries the risk of premature weaning, with the subsequent risks of long-term artificial feeding. Generally it is recommended that breastfeeding should be interrupted if the mother ingests drugs of abuse, anticancer drugs, and radioactive compounds.52,101 Among antidepressants, cardiovascular medications, immunosuppressants, and many other classes of medications, certain medications are preferred over others for lactating women. In a particular class of medications it is best to choose a medicine that has the least passage into breastmilk, has fewer active metabolites, and/or is used locally rather than systemically.4,47,52

Some medications and substances, such as bromocriptine, nicotine,108 moderate or large amounts of alcohol,22 and estrogen-containing oral contraceptives, are known to decrease milk supply. Infants should not be exposed to cigarette smoke. Children of mothers who smoke cigarettes have elevated cotinine levels in their urine compared with children of nonsmoking women. Nursing women who smoke pass a significant amount of cotinine through the breastmilk to the baby, such that the baby's cotinine levels are higher than those of babies exposed to passive cigarette smoke only.11,71 Women who breastfeed are advised not to smoke, but if they cannot quit, it is probably still more valuable to breastfeed, although they should be advised to not smoke in the infant's environment, to smoke as little as possible, and to smoke immediately after nursing (rather than before) in order to minimize the nicotine levels in their milk. Alcohol passes easily into breastmilk. While it is safest for nursing mothers to consume no alcohol, there is no documented risk from small amounts of alcohol. Mothers may be assured that having an occasional alcoholic drink need not preclude breastfeeding.7

Occupational Exposure and Pollutants

Women without specific occupational or other known poisonous exposures to pollutants may nevertheless be found to have a variety of polluting chemicals in their bodies.92 Some of these chemicals may be transferred to fetuses in utero, and possibly to infants postnatally through breastmilk. However, the risk of cancers and less-than-optimal neurologic development remains higher in formula-fed babies compared with breastfed babies in similar environments.30 Women

with average environmental exposure do not need to worry about having their breastmilk screened for pollutants. For women with known poisonous exposures, testing of breastmilk may be necessary. Because noncommercial fish and wildlife ingestion can be a very significant environmental source of pollutants, health professionals should remind pregnant and nursing women to follow the fish and wildlife consumption guidelines provided by their state, U.S. territory, or Native American tribe (www.epa.gov/ost/fish).27

Infectious Diseases
For most maternal infections breastfeeding helps to protect the infant against the disease or decreases the severity of the illness, because of anti-infective components of breastmilk. Only a few maternal infections preclude breastfeeding:

- In the United States women with human immunodeficiency virus (HIV) should be advised not to breastfeed because of the potential risk of transmission to the child. In countries with high infant mortality rates due to infectious illnesses or malnutrition, the benefits of breastfeeding may outweigh the risk of HIV transmission.62,78
- Women with active, untreated tuberculosis should be physically separated from their infants after birth and throughout the first two weeks of treatment. After this time, a woman may safely breastfeed even while continuing usual multidrug therapy regimens. Expressed breastmilk may be provided to the baby. The baby should also be treated for tuberculosis.61
- During active herpes simplex outbreaks, it is safe for a woman to nurse unless she has lesions on her breasts. It is recommended that she not nurse from the affected breast until lesions resolve.61
- Babies born to mothers who develop chickenpox within five days antepartum or within two days postpartum are at risk for more serious chickenpox infections. It is recommended that baby and mother be separated until the mother is no longer infectious, but expressed breastmilk may be supplied, as long as the milk does not come into contact with active lesions.61

Maternal Illness
Women with chronic noninfectious illnesses may be empowered by their ability to breastfeed. For most illnesses, medication issues need not prevent breastfeeding, as reasonable medication choices can almost always be made. Exceptions include treatment of breast or other cancers, which necessitates use of antimetabolites.62 Women with severe trauma or acute life-threatening illness may be too ill to nurse or express milk. Should maternal illness require separation, women should be assisted to maintain lactation.

Breast Surgery
Some women who have had breast augmentation may not be able to produce sufficient amounts of breastmilk. Some of these women may have had insufficient breast tissue before surgery.79,80 Breast reduction surgery also increases the risk that a woman will not be able to produce sufficient breastmilk.19,40 Breast biopsy with circumareolar incision can interfere with milk supply and transfer in that breast.19 These women should be encouraged to breastfeed, but mother and baby need to be followed closely to ensure that the infant has an adequate milk intake. Women who develop a suspicious breast mass during lactation should not wean for the purpose of mass evaluation. Mammograms and breast mass biopsy can be done without interfering with lactation.13 Family physicians should assist their patients with decisions about breast surgery. They should communicate with the surgeon to advocate for their patient's future breastfeeding needs and breastfeeding conservation surgeries whenever medically feasible.

Infant Illness
Infants with chronic diseases benefit from breastfeeding and/or breastmilk. However, infants with galactosemia are unable to breastfeed and must be on a lactose-free diet. Infants with phenylketonuria should breastfeed, but they must receive supplementation with a low-

phenylalanine formula.62 Breastfed infants with phenylketonuria have better developmental outcomes compared with those exclusively fed low-phenylalanine formulas.91

Nursing Beyond Infancy
Breastfeeding should ideally continue beyond infancy, but this is currently not the cultural norm and requires ongoing support and encouragement.85 Breastfeeding during a subsequent pregnancy is not unusual. If the pregnancy is normal and the mother is healthy, breastfeeding during pregnancy is the woman's personal decision. If the child is younger than two years of age, the child is at increased risk of illness if weaned. Breastfeeding the nursing child after delivery of the next child (tandem nursing) may help to provide a smooth transition psychologically for the older child.61

Employment and Breastfeeding
In the past 30 years, significant demographic shifts have affected child care and, more specifically, lactation. Coincident with a reduction in family size has been a progressively earlier return of mothers to the workforce, as well as an increased percentage of families headed by women and families in which both parents are employed. These demographic changes have made breastfeeding more difficult to implement. In fact, the most significant obstacle to breastfeeding duration is the mother's need to return to work.28,63 The day-care industry has concurrently grown, fueled by the early return of new parents to the workplace. Regardless of the quality of the day-care facility, studies have documented an increased rate of transmission of infectious diseases in these settings.54

Employers can benefit when they promote a positive attitude towards lactation.18 Many new mothers bring skills and experience to the workplace, and an encouraging atmosphere will promote retention of these valued employees. Women who feel their employers are positive towards their desire to continue breastfeeding are often less torn between their child and loyalty to an employer; such positive attitudes generally result in greater employee productivity. Additionally, breastfeeding mothers lose less time from the workplace because breastfed babies tend to stay healthier than their formula-fed counterparts.23 Employers may choose to capitalize on their pro-lactation policies. Such policies may generate customer approval and favorable publicity in the community.

The logistics involved in promoting ongoing lactation vary from employer to employer. Large employers with on-site day-care may simply choose to allow breaks to be taken in the day-care center where the mother may breastfeed. All employers should be encouraged to have a written policy about the promotion and protection of breastfeeding in the workplace. Ideally, employers should provide a dedicated space for women to nurse or express breastmilk (see Table 1). Some employers may choose to offer their employees the option of working part-time or telecommuting the first four to six months when lactation is most time-intensive. A positive approach by employers goes a long way towards assuaging concerns on the part of other employees. In time, federal and state tax benefits could be offered to companies that implement affirmative lactation policies for their employees.

Family physicians may encourage employers to provide the option of either a postpartum leave of at least four months' duration; or part-time employment, telecommuting, or any other available option that could permit the breastfeeding mother to spend more time with her baby. Medical students, family practice residents, and practicing family physicians should be afforded the opportunity to establish and maintain lactation.

Table 1.

A Breastfeeding-Friendly Workplace

Workplaces should provide the following:

1. A private room, or section thereof, for either expressing milk or nursing a baby
2. A comfortable chair
3. Electrical outlet and small table for breast pump
4. Access to a sink to wash hands and equipment
5. Small, secure refrigerator for milk storage
6. Protected breaks every 3 hours for pumping (may be in place of other breaks)
7. Non-harassment policy for breastfeeding mothers

Military Issues

Military mothers share many issues in common with other employed mothers, but they also face some unique challenges. Although the Pentagon has established lactation rooms and other support, there are no consistent Department of Defense Policies about breastfeeding, which can vary significantly among individual commands.

All three services provide 6 weeks of maternity convalescent leave; the active-duty service member can request additional leave, which is granted at the discretion of the supervisor. However, active-duty members also face prolonged assignments and deployments. For some Navy mothers, in particular, deployment can mean 6 months away from home on a ship beginning as early as 6 weeks' postpartum. Some field-duty sites have limited potable water supplies, electricity, and/or restroom facilities. Military mothers also face conflicting and negative attitudes about being a warrior and a mother from supervisors, co-workers, and families. The Department of Defense and the individual services are assessing current policies and considering necessary modifications to help support the active-duty breastfeeding mother.

Family physicians working with military populations should be especially aware of the unique challenges these families face. Family physicians should work to develop appropriate policies supporting breastfeeding by active duty service members and by mothers who are military dependents.

Breastfeeding the Preterm Infant

The period following the birth of a premature infant can be overwhelming for families. The advice and support of a trusted family physician can be invaluable to parents confronted with unforeseen decisions and numerous uncertainties. Some relatively mature preterm infants may be able to breastfeed right away. Family physicians can provide immediate guidance on maintaining lactation when mother-infant separation is required.

Mothers of preterm infants should be presented with information about the effects of breastmilk and breastfeeding on the premature infant. Women who are hesitant to make a long-term commitment to breastfeeding can be encouraged to nurse or express colostrum for the first week or to nurse or express breastmilk for her infant until it can be discharged from the hospital. The mother of a preterm infant faces almost all of the barriers encountered by other mothers plus those of potentially prolonged breast-pumping, limited infant contact, medical equipment and monitoring devices attached to her infant, and emotional stress. When family physicians work as part of a team of neonatologists, nurses, social workers, dietitians, and lactation consultants, they can be effective in supporting the successful initiation and continuation of breastfeeding after the birth of the preterm infant.

Preterm breastmilk differs from term breastmilk and provides both short- and long-term health advantages for preterm infants. Preterm infants who receive breastmilk have greatly reduced rates of sepsis and necrotizing enterocolitis compared with infants who receive milk substitutes.26,67 Studies of preterm infants have also demonstrated reduced rates of atopic disease in infants with a family history of atopy.66 A recent meta-analysis concluded that breastfeeding is associated with long-term cognitive advantages and that preterm infants derive more benefit than full-term infants.6 Breastmilk has also been associated with enhanced retinal development and visual acuity in preterm infants.15 However, breastmilk may need to be supplemented with a fortifier for smaller or more fragile preterm infants.98,99

Studies have shown that preterm infants show greater cardiac and respiratory stability when breastfeeding rather than bottle-feeding.16,98 Therefore, initiating breastfeeding in preterm infants does not require demonstrated ability to bottle-feed. In addition to promoting physiologic stability in premature infants, skin-to-skin contact or "kangaroo care"36,113 increases maternal milk supply and may trigger the enteromammary immune system by which a mother produces antibodies in response to antigens in the infant's environment.

There are several excellent resources on breastfeeding management for physicians caring for breastfeeding preterm infants and their families, including chapters in texts by Lawrence & Lawrence , and Riordan & Auerbach.61,90

Teens and Breastfeeding

While teenage mothers share issues with their adult peers, they also face many unique pressures. The family physician is well positioned to assist the pregnant and breastfeeding teen and her family. All adolescent mothers should be encouraged to breastfeed.3

Many adults in our society may have a negative attitude toward the pregnant teen. It is essential for her family physician to be aware of these negative attitudes, including his or her own feelings about pregnant teens. The family physician can help the pregnant teen deal with these issues and empower her to breastfeed.8 Enlisting the teen's support system is important; including the baby's father, peers, and friends may make the difference. Peer counseling by other breastfeeding teens can be very powerful. Teens are usually interested in learning about the practical issues of breastfeeding and learn quickly. However, they may often have an incorrect understanding, and dispelling myths is key.

Pregnant and breastfeeding teens often have significant concerns regarding body image. These concerns can be addressed by providing positive images of discreet breastfeeding and educating them about changes that will occur during pregnancy and breastfeeding. Often teens are disinclined to bring up such concerns, but if asked they are willing to discuss body image concerns, as well as issues such as sexuality and contraception. Because teens worry about their changing bodies, it is important to proactively share information about proper nutrition, diet, exercise, and weight loss with the teenage mother and those in her support system.41

Milk production in teens has been evaluated because of concerns about a possible decreased milk supply in adolescent mothers.64 Teens may make less milk as a result of having less breast tissue.76 Teenage mothers often feed their infants less frequently and supplement with solids earlier.50 However, most teenage mothers with proper support have ample milk supplies.

Continued support of the adolescent mother will help her maintain breastfeeding. Anticipatory guidance about her baby's growth and development, as well as ongoing parenting education, will help the teen mother and her family maintain breastfeeding as part of her lifestyle.

Adoptive Breastfeeding
Family physicians often care for adoptive parents. The physician should offer the adoptive mother the opportunity to breastfeed her child. A knowledgeable physician or lactation consultant may help the mother to develop a milk supply either before or after an adoption.20

While the adoptive mother often does not develop a full breastmilk supply, with induced lactation techniques it is often possible to provide a significant amount of breastmilk. Suckling at the breast has developmental advantages for babies. In many cases, the opportunity to emotionally bond during nursing is the primary benefit of breastfeeding for adoptive mothers and babies.107

Breastfeeding Multiples
Mothers of twins and higher order multiples should be encouraged to breastfeed. These mothers will need additional support for breastfeeding. Most mothers can fully breastfeed twins,42 however mothers of higher order multiples are more likely to need to supplement their breastmilk. Support groups can be especially helpful for mothers of multiples.61,90

Breastfeeding in Diverse Populations
Breastfeeding is important for all infants, but children exposed to overcrowding or to poverty are especially vulnerable to the risks of not being optimally breastfed. Yet racial, ethnic, and socioeconomic disparities in breastfeeding rates persist despite overall increases.44,110 Incidence and duration data, however, do not truly measure breastfeeding rates among various ethnic and cultural groups. Statistics gathered under the simplistic groupings of "African-American," "Hispanic," etc., inadequately represent the many cultures and ethnicities included in each category.

Reasons for the relatively low rates in several ethnic and socioeconomic subgroups are both cultural and economic.118 Women of lower socioeconomic status may have less education and are often employed in positions where work hours, transportation, and other constraints interfere with the maintenance of a regular schedule of breastfeeding and/or pumping. Provision of formula through WIC may make bottle-feeding an attractive alternative, despite concordant attempts to encourage breastfeeding. Family responsibilities, the cost of nursing paraphernalia, lack of a private space to nurse, and issues of partner acceptance pose additional obstacles to lactation.10,33,75 In addition, these mothers often lack personal role models as well as access to breastfeeding information and to lactation specialists. Certain populations are potentially more vulnerable to the effects of aggressive infant formula marketing practices.25

Ethnic subgroups within our society also face significant obstacles to lactation even when economics is not a factor. First-generation immigrants from countries where breastfeeding is the norm are more likely to breastfeed than are second- and later-generation women. This may be due to convenience, belief in modern food technology, and attempts to acculturate into a society where bottle-feeding is perceived to be the norm.90 Thus, breastfeeding role models are lost with successive generations. Additionally, accurate breastfeeding information is less available in languages of smaller ethnic minorities. Few lactation consultants or other health care personnel are equipped to help women who speak languages other than English or Spanish. Some ethnic and cultural groups are under-represented in the lactation consultant field. Many cultures also have unique beliefs about lactation, including rituals regarding milk production, concerns about colostrum, sexual taboos, and beliefs about wet-nursing.90 These beliefs need to be taken into account when counseling about the lactation process.

Family physicians can promote lactation among their patients of various ethnicities and socioeconomic levels in a number of ways. These include the following:

- Learning about the family structure of their patients. In some cultures, enlisting the cooperation of a pivotal family member may greatly assist in the promotion of

breastfeeding,114 whereas in others, the participation of a particular family member may be inappropriate.

- Understanding the partner's perspectives and beliefs that may affect breastfeeding success and educating where appropriate.
- Ensuring that parents from diverse cultures understand the importance of breastfeeding to their children's growth and development.
- Respecting cultural traditions and taboos associated with lactation, adapting cultural beliefs to facilitate optimal breastfeeding, while sensitively educating about traditions that may be detrimental to breastfeeding.
- Encouraging exclusive lactation in the hospital in a culturally sensitive manner.
- Providing all information and instruction, wherever possible, in the mother's native language and assessing for literacy level when appropriate.
- Understanding the specific financial, work, and time obstacles to breastfeeding, and working with families to overcome them.
- Being aware of the role of the physician's own personal cultural attitudes when interacting with patients.
- Being aware of the interaction between the larger American culture and the patient's culture.

Education of Medical Students, Residents, and Family Physicians

Medical Students

In the preclinical years, courses in anatomy, physiology, and biochemistry, among others, should include aspects pertinent to lactation. These include anatomy of a lactating breast and how this relates to baby's latch-on, physiology of milk production and the milk ejection reflex, biochemistry of human milk and the vast differences in artificial substitutes. Some topics could be covered as "clinical correlation" lectures. Aspects of lactation relevant to particular disciplines could be integrated into the existing curriculum. For example, the basics of the passage of medications into human milk could be incorporated into the pharmacology course. In the introductory clinical course, students should be taught the importance of a patient's own infant feeding history as a possible risk factor for disease, how to take a breastfeeding history when appropriate, and how to examine lactating breasts (Table 2).

In the clinical years, patient care experience in family medicine, obstetrics, and pediatrics should include instruction in normal breastfeeding, including risks to mother and baby if alternate choices are made ("informed consent" for formula use).74 Topics to be included are preparation to breastfeed during pregnancy, anticipatory guidance for the mother during the first week of lactation, normal growth of breastfed infants, and anticipatory guidance for other issues that arise regarding breastfeeding of older infants and toddlers. Management of other special considerations in breastfeeding couplets, such as breastmilk and breastfeeding jaundice, infectious disease and lactation, contraindications to breastfeeding, medications in the breastfeeding mother, nutritional support, lactation and fertility, and the allergic family should be addressed. Other issues that should be incorporated in the curriculum include assisting mothers with breastfeeding an ill or special-needs infant, reestablishing lactation, inducing lactation for an adoptive family, advocacy for employed mothers, and psychosocial support for the breastfeeding family (Table 3).

Venues for instruction include lectures, clinics, wards, special lactation clinics, and mentoring by instructors with expertise in breastfeeding medicine. Modes of instruction should include case presentations, problem-based learning modules, direct patient care, patient education

opportunities, didactics, and computerized learning modules. Family medicine interest groups could present workshops about breastfeeding to complement the medical school curriculum.

In view of the lack of adequate medical education regarding breastfeeding and human lactation31 until recently, it is crucial to provide appropriate faculty development opportunities in order to provide medical students with faculty knowledgeable in evidenced-based breastfeeding management.

Family Medicine Residency

Family medicine residency curriculum should reinforce the concept that breastfeeding is the physiologic norm for mothers and children. Risks to the child of not being breastfed should be addressed, including nutritional differences between human milk and substitutes,61 and short-term and life-long health,74 developmental,15,46,60,68,111 and social risks.1 Risks to mother of not breastfeeding, including health,14,21,24,39,57,81,93 financial, and social ones,1,54,105 should be covered. Risks to the family of not breastfeeding should also be addressed, such as financial aspects, stress of having an ill child, and long-term loss from a child with suboptimal development. The special role of the father and/or the mother's partner, relatives, and friends in supporting breastfeeding should be addressed. Additionally, risks to society as a whole should be taught, including increasing health care costs9,73,103 and ecological considerations.30,87

All aspects of normal breastfeeding (Table 3) and management of common problems (Table 4) should be covered and integrated longitudinally in the three-year residency curriculum. Individual topics may be addressed as appropriate in the following areas:

- Family practice centers (prenatal, postpartum, and well-child visits);
- Mother-baby unit of the hospital (including delivery and postpartum);
- Hospital wards (maintaining lactation in ill mothers);
- Didactics, case conferences, and journal club (all topics as appropriate).

Specific elective experiences in breastfeeding medicine should be made available for residents who want more intensive education. Residency practices should model support of their breastfeeding patients. Specific support should also be provided for medical students and residents (and other staff members) who are themselves breastfeeding.

Continuing Medical Education for Practicing Family Physicians

With breastfeeding rates rising steadily, it is incumbent upon practicing family physicians to seek continuing medical education (CME) opportunities regarding evidence-based practice for breastfeeding support and management of problems that may occur. Many conferences and seminars on breastfeeding for health professionals offer CME hours for physicians as well. The AAFP is a cooperating organization for the La Leche League International Annual Seminar for Physicians on Breastfeeding, and includes workshops on breastfeeding at many of its national conferences (Appendix 2).

Table 2.

Suggested Topics for Preclinical Years

Physiology of the breast during lactation

Composition of breastmilk

Latch and suckling dynamics

Teaching the mother-infant couple to breastfeed

Mechanisms of jaundice in breastfeeding baby

Psychosocial aspects of breastfeeding

Table 3.

Suggested Topics for Clinical Years: Normal Breastfeeding

Effects of labor and delivery interventions on initiation of breastfeeding

Facilitating and assisting mother with the first feeding in the delivery room

Neonatal breastfeeding assessment

Supporting mothers returning to school/employment

Pumps and pumping

Advocacy

Table 4.

Suggested Topics for Residency Curriculum

Normal Breastfeeding topics (as in Table 2) plus the following:

Management of common lactation problems	***Maternal***	***Infant***
	Sore nipples	Latch and suck problems
	Plugged ducts	Supplementary feeds
	Mastitis	Jaundice
	Candidal infections of breast	Inadequate weight gain
	Inadequate milk supply	Tongue-tie
		Frenotomy
	Special situations	
	Congenital anomalies that may affect breastfeeding	
	Down syndrome	
	Congenital heart defects	
	Cleft lip/palate	

Family Physicians and Breastfeeding Advocacy

Family physicians have had a long history of advocating for patients in various aspects of their health care. To reach the AAFP's breastfeeding goals, we will need to be advocates with and for our breastfeeding patients. Until breastfeeding is seen as the norm, family physicians will need to be involved in shaping policies that affect breastfeeding. Family physicians can become advocates for breastfeeding in several areas, including in physician offices, hospitals, birthing centers, and workplaces, and with insurance companies. Family physicians can help shape public health policies and encourage research. While an individual family physician is not likely to be involved in all areas of advocacy for breastfeeding, family physicians working together as a group can become effective advocates with our breastfeeding patients.

Studies have shown that the physician's recommendation to breastfeed increases breastfeeding initiation and duration rates.12,35,65 Eliminating formula company literature, advertising, and distribution of samples encourages breastfeeding as normal infant feeding.112 We need to be sure that our office policies support our breastfeeding patients and employees. There are some simple steps that all physicians can take in order to advocate breastfeeding in our offices (see Appendix 1).17,56,69,74,77

When advocating for breastfeeding issues related to insurance coverage and workplace changes, the economic benefits of breastfeeding are essential issues. Several studies have shown substantial increase in cost to families, communities, health care systems, and employers when

babies are not breastfed.9,73,89,103 Physicians must be aware of this data in order to be effective advocates in promoting change in policies regarding breastfeeding.

Family physicians have assumed many administrative roles in hospitals, managed care plans, insurance companies, and large physician organizations. In these roles, family physicians are in a position to promote breastfeeding and ensure appropriate reimbursement for lactation services provided by physicians or lactation consultants. Family physicians should advocate for improved access to lactation services by encouraging increased availability of lactation consultants.

Family physicians should support and advocate for public health policies that would increase breastfeeding rates. They should actively promote legislation that would encourage the ease, safety, and security of breastfeeding. Family physicians should advocate for and become involved with breastfeeding-related research aimed at increasing the evidence base and increasing breastfeeding rates.

Family physicians are active and influential in their communities. By projecting a positive attitude toward breastfeeding in the office and the community, they can strongly affect patients' decision to breastfeed. Family physicians provide a wealth of patient education in their offices. As a part of their health education and promotion activities in schools, family physicians should incorporate breastfeeding into their education for both boys and girls. Making breastfeeding education available to all family and community members will make breastfeeding the community norm.

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Appendix 1: Recommendations for Breastfeeding Promotion and Management

AAFP Policy Statement on Breastfeeding

Breastfeeding is the physiological norm for both mothers and their children. The AAFP recommends that all babies, with rare exceptions, be breastfed and/or receive expressed human milk exclusively for about the first six months of life. Breastfeeding should continue with the addition of complementary foods throughout the second half of the first year. Breastfeeding beyond the first year offers considerable benefits to both mother and child, and should continue as long as mutually desired. Family physicians should have the knowledge to promote, protect, and support breastfeeding.

General Recommendations For All Family Physicians

1. Breastfeeding promotion and education need to occur throughout the life cycle.
    a. Provide accurate and appropriate breastfeeding information at all preventive health visits throughout the lifespan.
    b. Provide accurate information about infant feeding during preconception and all prenatal visits.
2. Family physicians, whether or not they provide maternity care, should establish a breastfeeding-friendly office.17,20

a. Avoid the direct or implied endorsement of artificial baby milks (formula) by eliminating the distribution of samples and formula-company sponsored materials.11,12
b. Display culturally appropriate breastfeeding pictures and posters.
c. Ensure that all office staff are knowledgeable about and supportive of breastfeeding.
d. Have current breastfeeding resources available in the office.

3. Family physicians should actively promote breastfeeding in the community.
    a. Promote practices consistent with the "Ten Steps to a Baby-Friendly Hospital" (see Appendix 3).23
    b. Provide educational programs in the community about the importance and practical aspects of breastfeeding.
    c. Advocate for mother-friendly policies in the workplace.
    d. Support legislation and public policy that protects breastfeeding.

Specific Clinical Recommendations24

1. Preconceptual and Prenatal Education
    a. Address the infant feeding decision before conception or as early in pregnancy as possible; women make their decision about breastfeeding very early. Continue to bring up the issue of infant feeding throughout the prenatal period.17,20
    b. Determine the mother's intent and any concerns or misconceptions she may have. Provide appropriate education and anticipatory guidance to encourage her to consider breastfeeding and determine what support she will need to make and carry out this decision.15
    c. Elicit any factors in the family medical history that may make breastfeeding especially important (e.g., atopic diseases, diabetes, obesity, cancers), and advise the woman of these factors.3,6,7,19,24,26
    d. Elicit any risk factors for potential breastfeeding problems and any potential medical contraindications to lactation. Provide appropriate support and eduation.14,17
    e. Encourage the participation of the mother's support persons and educate them as appropriate.2,8
    f. Recognize the feelings of relatives who did not breastfeed, or weaned prematurely. Encourage them to learn what is currently known about breastfeeding for the optimal health of the mother and baby.
    g. Encourage the woman and her support persons, in a culturally sensitive manner, to attend breastfeeding classes and/or support group meetings prenatally.13
    h. Provide the woman with accurate, noncommercial breastfeeding literature and recommendations for accurate lay breastfeeding resources (e.g., books, Web sites, etc.).
    i. Educate women about the potential breastfeeding problems associated with the use of intrapartum analgesia and anesthesia. Encourage the use of a labor support person (doula).9,29
2. Intrapartum support
    a. Provide appropriate labor support intended to minimize unnecessary analgesics or anesthesia.9,29
    b. If mother and baby are stable, facilitate immediate postpartum breastfeeding. Minimize separation of mother and infant and wait until after the first

breastfeeding to perform routine newborn procedures such as weighing, ophthalmic prophylaxis, vitamin K injection, etc.21

c. Provide warming for the stable newborn via skin-to-skin contact with the mother, covering both mother and baby if necessary.

3. Early postpartum education and support24
    a. Advocate for 24-hour rooming in for mother and baby.
    b. Encourage the mother's support people to provide optimal opportunities for breastfeeding.
    c. Ensure that breastfeeding is being adequately assessed on a regular basis by qualified professionals.22
    d. Educate mothers about the importance of frequent, unrestricted breastfeeding with proper positioning and latch.
    e. Help mothers recognize the baby's early feeding cues (e.g., rooting, lip smacking, sucking on fingers or hands, rapid eye movements) and explain that crying is a late sign of hunger. Help mothers also recognize signs that the baby is satisfied at the end of a feeding (e.g., relaxed body posture, unclenching of fists).
    f. If mother and baby need to be separated, assist them to maintain breastfeeding and/or ensure that mother receives assistance with expressing milk.
    g. Provide mothers with clear verbal and written discharge breastfeeding instructions that include information on hunger and feeding indicators, stool and urine patterns, jaundice, proper latch and positioning, and techniques for expressing breastmilk.
    h. Educate mothers about the risks of unnecessary supplementation and pacifier use.5,10,16,18,22
    i. Avoid the use of discharge packs containing formula samples and formula company advertising or literature.4
    j. Ensure that the mother and baby have appropriate follow-up within 48 hours of discharge and provide mother with phone numbers for lactation support.1
    k. Identify breastfeeding problems in the hospital and assist the mother with these before discharge. Develop an appropriate follow-up plan for any identified problems or concerns.
    l. Provide the family with information about breastfeeding support groups in the community.
4. Ongoing support and management17,20
    a. Evaluate the mother and baby soon after hospital discharge to assess adequacy of milk intake and address any problems that have developed.
    b. Use breastfeeding-friendly approaches to treatments for problems.
    c. Continue to encourage breastfeeding throughout the first year of life and beyond, both at well-child visits and at other visits.
    d. Be knowledgeable about prevention and management of common breastfeeding challenges.
    e. Develop a working relationship with professionals with expertise in lactation issues, such as International Board Certified Lactation Consultants. Consult when breastfeeding concerns exceed your level of expertise.
    f. Encourage mothers who are returning to work to continue to breastfeed.
    g. Encourage mothers who do not feel they can continue to exclusively breastfeed to continue partial breastfeeding as long as possible.
    h. Support mothers who choose not to breastfeed or who wean prematurely. \

The Baby Friendly Hospital Initiative (BFHI)

The Baby Friendly Hospital Initiative (BFHI), a WHO/UNICEF global program, encourages and recognizes hospitals and birthing centers that offer an optimal level of care for lactation. The BFHI assists hospitals in giving breastfeeding mothers the information, confidence, and skills necessary to successfully initiate and continue breastfeeding their babies and awards "Baby Friendly" status to hospitals that have done so.

Hospitals can work toward improving breastfeeding practices. In turn, hospitals will receive a Certificate of Intent for their commitment to creating an environment supportive of the Ten Steps to Successful Breastfeeding. The vast majority of hospitals in the United States do not fulfill the Ten Steps to Successful Breastfeeding, but hospitals in every state are eager to work toward that end.

Receiving the Baby Friendly Award requires an on-site survey, which is conducted after the hospital or birthing center indicates its readiness for assessment. Only after the hospital or birthing center has successfully implemented all of the Ten Steps, according to the assessment process, does it receive the designation of being a Baby Friendly Hospital.

To receive information about the Baby Friendly process, contact
Baby Friendly USA at (508) 888-8044

Ten Steps to Successful Breastfeeding
Every facility or agency providing maternity services and care of newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff
2. Train all health care staff in skills necessary to implement this policy
3. Inform all pregnant women about the benefits and management of breastfeeding
4. Help mothers initiate breastfeeding within a half-hour of birth
5. Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants
6. Give newborn 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 artificial teats (nipples) or pacifiers to breastfeeding infants
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic

The International Code of Marketing of Breast Milk Substitutes

The Code refers to an international recommendation drawn up by WHO and UNICEF and adopted by the World Health Assembly in 1981. It seeks to protect and promote breastfeeding by eliminating inappropriate marketing and distribution of breast milk substitutes. It has long been recognized that commercial pressures and promotion of infant feeding products have a negative impact on the initiation and duration of breastfeeding. The Code was adopted to end marketing practices that interfere with breastfeeding. Familiarity with the Code can help health care providers avoid the unintentional discouraging of breastfeeding and can be used as a tool to help format and guide agency, organizational, and institutional breastfeeding policies. The International Code of Marketing of Breast Milk Substitutes can be summarized as follows:

Summary of the International Code of Marketing of Breastmilk Substitutes
The Code includes these ten important provisions

1. No advertising of products under the scope of the Code to the public
2. No free samples to mothers
3. No promotion of products in health care facilities, including the distribution of free or low-cost supplies
4. No company representatives to advise mothers
5. No gifts or personal samples to health workers
6. No words or pictures idealizing artificial feeding, including pictures of infants, on the labels of the products
7. Information to health workers should be scientific and factual
8. All information on artificial feeding, including the labels, should explain the benefits of breastfeeding and all costs and hazards associated with artificial feeding
9. Unsuitable products such as sweetened condensed milk should not be promoted for babies
10. All products should be of a high quality and take account of the climatic and storage conditions of the country where they are used

USDA Breastfeeding Promotion Consortium (BPC)

The BPC was established in 1990 by the USDA and DHHS. The consortium invites representatives from national organizations that work with breastfeeding families as well as many government agencies that have breastfeeding as part of their agenda. The BPC meets semi-annually in Washington, DC to fulfill its mission as, "A forum for dialogue between the breastfeeding advocacy community and federal agencies to promote, protect, and support breastfeeding."

US Breastfeeding Committee (USBC)

The USBC was formed in partial fulfillment of the operational targets set forth in the Innocenti Declaration. The USBC meets semi-annually in Washington, DC and is a collaborative partnership of governmental and non-governmental organizations that works to assure the rightful place of breastfeeding in society.

World Breastfeeding Week

World Breastfeeding Week occurs each year during the first week of August. It provides an opportunity to focus a period of time directly on the promotion and support of breastfeeding. Many organizations and institutions create displays, launch special breastfeeding programs, and reach out to the community with information on breastfeeding. World Breastfeeding Week provides a venue to help educate the public, employers, businesses, health care providers, and community leaders about breastfeeding as the normal and natural way to feed a baby. Because breastfeeding is a public health issue, the collective goal is to make breastfeeding the cultural norm. Materials are available from:

INFACT Canada
6 Trinity Square
Toronto, Ontario M5G 1B1
(416) 595-9819

International Lactation Consultant Association
1500 Sunday Dr, Suite 102
Raleigh, NC 27607-6518
(919) 787-5181

Noodle Soup of Weingart Design
4614 Prospect Ave, #328
Cleveland, OH 44103
(800) 795-9295

La Leche League International
1400 N Meacham Rd
Schaumburg, IL 60173
(847) 519-7730

Health Education Associates
327 Quaker Meeting House Rd.
East Sandwich, MA 02537
(888) 888-8077

• • • • • • • • • • • • • • • Breastfeeding Support and Services

Breastfeeding Counselors
Many women who have breastfed have realized how helpful it was to have an experienced mother provide support for common questions and concerns. These women attend training courses and learn about the experiences of many mothers, so they understand breastfeeding beyond their own personal experience. These women belong to breastfeeding support groups such as **La Leche League International** and **Nursing Mothers Council.** Breastfeeding counselors are knowledgeable about breastfeeding and the normal situations that arise during the course of breastfeeding. They are available by telephone to answer questions. When a breastfeeding counselor encounters a breastfeeding problem that is beyond her skills, she will refer to the primary health provider and a lactation consultant. Breastfeeding counselors are usually community volunteers and their help is free of charge.

Lactation Consultants
Lactation consultants are specialists who offer assistance for more complicated situations requiring hands-on help such as low milk supply, babies who will not or cannot latch to the breast, cleft lip/palate, etc. There is a fee for the service that may be covered by insurance. Some practitioners have a sliding scale of fees. Most lactation consultants have qualified as International Board Certified Lactation Consultants by passing a certifying examination given by the **International Board of Lactation Consultant Examiners**. They must recertify every five years. Lactation consultants who successfully pass the exam use the initials IBCLC after their name. Lactation consultants may be employed by hospitals, health maintenance organizations, clinics, pediatricians, family practice physicians, or may offer their services through a private practice in the community. Private practice lactation consultants often make home visits and may also rent breast pumps and supply other breastfeeding equipment. Most in Massachusetts belong to the **Massachusetts Lactation Consultant Association.**

Other Breastfeeding Credentials
Some breastfeeding specialists carry other credentials such as CLC (certified lactation counselor), CBE (certified breastfeeding educator), etc. These letters mean that the person has taken additional training in lactation management but is not nationally certified.

WIC Nutrition Staff
All **WIC** (the Special Supplemental Nutrition Program for Women, Infants, and Children) staff that provide nutrition services to infants and pregnant and postpartum women are trained in basic breastfeeding management. Many are certified as CLC or IBCLC. WIC provides breastfeeding education and counseling to all pregnant and breastfeeding participants.

Peer Counselors
Some breastfeeding counselors are hired to teach women about breastfeeding and provide prenatal and postpartum support, such as the peer counselors employed by WIC. Peer counselors generally live in the same neighborhood and are readily accessible to the new mother. They may be paired or buddied with a new mother to provide more intensive breastfeeding help. WIC provides training for their peer counselors, which builds on the peer's own breastfeeding experiences.

Postpartum Doulas
Postpartum doulas provide practical, educational, and emotional support to a mother in her home during the first few weeks following the birth. The role of the doula is to support a healthy transition from pregnancy and birth recovery to parenthood. Postpartum doulas are trained to offer guidance and education on new born care, breastfeeding; parent education and special attention for siblings and may help with cooked meals, food shopping; nursery organization and house hold assistance. You can locate doulas in Massachusetts by contacting Doulas of North America at: www.dona.org or the National Association of Postpartum Care Services at www.napcs.org.

The following listings provide you with the contact information of those providing breastfeeding support and services in Massachusetts. We recommend that you get to know those in your area who provide these services so you are confident in referring your breastfeeding mothers to them.

LA LECHE LEAGUE LEADERS

Acton
Donya Platt (978) 266-9298
Sherene Raisbeck (978) 266-9648
Elaine Shirron (978) 635-0122

Amherst
Maria Polino (413) 253-1030
Ilene Roizman (413) 256-5998

Andover
Sue Malone (978) 749-0645

Arlington
Heather Bingham (781) 648-2988
Kimberley Harding (781) 648-4454
Sara Padrusch (781) 641-5725

Barnstable
Marie Spadaro (508) 364-2862

Belchertown
Mary LaChapelle (413) 323-6106
Cecilia Mathewson (413) 253-9511
Danielle Perry (413) 323-6098

Belmont
Sally Martin (617) 489-7770

Beverly
Kathy Abbott (978) 922-4289

Billerica
Robin Kuczynski (781) 229-9080
Ellen Vig (978) 663-5361

Boston
Stephanie Avelino (617) 323-6885
Janna Frelich (617) 323-3467
Kedron Murphy (617) 282-8244
Andrea Suh (617) 553-8029

Bridgewater
Ellen Bordman (508) 807-0138
Pam Pace (508) 697-0504

Brockton
Ilene Fabisch (508) 584-3417
Carolyn Pepler (508) 584-2761

Brookline
Janice Cullivan (617) 548-3011

Burlington
Shari Marquis (781) 270-0944

Cambridge
Marie Mitchell (617) 497-0510

Carlisle
Carol Yelle (978) 369-1263

Chelmsford
Carol Eckelkamp (978) 256-0644
Susan Giroux (978) 256-0669
Yoko Taylor (978) 256-4804

Chicopee
Lezlie Densmore (413) 594-9731
Sheila Roberts (413) 594-9320

Concord
Colleen Humphreys (978) 371-7350
Elizabeth Parise (978) 318-9934

Danvers
Linda Hussey (978) 774-5196

Dedham
Sharla Lloyd Halperin (781) 320-0714

Dracut
Danielle Golio (978) 957-6418

Dudley
Kay Gadoury (508) 943-9508

East Longmeadow
Nancy King (413) 525-9316
Lavada Wright-Munoz (413) 525-3910

East Wareham
Amy Simonds (508) 295-2181

Easton
Charlene Phillips (508) 238-3708
Kristen Vu (508) 230-2191

Fall River
Polly Moss (508) 673-5975

Fitchburg
Jennifer Smith (978) 345-8717

Florence
Kirsten Lane (413) 586-0151
Rosemary Mcnauaghton (413) 537-9755

Framingham
Linda Jeffrey (508) 872-3892

Franklin
Karen Tardif (508) 528-2162

Gloucester
Katie Harrington (978) 282-7359

Great Barrington
Kim Kaufman (413) 528-2763

Hamilton
Maire Maclean (978) 468-1876

Hanover
Lisa Bumbalo (781) 829-9075
Joanne Collins (781) 924-1919

Hardwick
Catherine Carr (413) 477-0199

Haverhill
Kim Bradlee (978) 521-5270
Elizabeth Harrison (978) 521-1310
Lisa Heenehan (978) 372-5481
Monique Landry (978) 556-9944
Michelle Michitson (978) 372-9375

Hingham
Love Albrecht-Howard (781) 740-4876
Christie Breen (781) 740-7808
Kathleen Doyle (781) 749-2404

Holbrook
Patricia Ryan (781) 986-6980

Holden
Jennifer Dziejma (508) 829-8957
Kerrie Galvin (508) 829-4654

Hopkinton
Cathleen Dinsmore (508) 435-4421
Mary Kniaz (508) 625-1990

Hudson
Leslie Simpson (978) 568-8424

Hull
Amy Shaw (781) 925-1487

Kingston
Heidi Conner (781) 582-1187

Leominster
Lisa Bateman (978) 537-9070
Pamela Spurrell (978) 537-8009

Lexington
Alexis Jette Borggard (781) 652-9717
Anne Marie Lindquist (781) 863-1689
Francesca Pfrommer (781) 862-4762

Lowell
Josalyn Burgess (978) 458-1976
Sharon Logvin (978) 454-5717

Ludlow
Brenda Allair (413) 589-1320
Diana Molina (413) 583-3534

Lynnfield
Mary Mahoney (781) 334-3035
Patty Rhode (781) 334-3035

Marlborough
Tina Clawson (508) 460-1808

Marshfield
Yvonne Maalouf (781) 834-2361

Mashpee
Robin Allen (508) 539-3088

Maynard
Michelle Stolow (978) 897-8306

Medfield
Debbie LaPlante (508) 359-4553
Cindy Stewart (508) 359-2734

Medway
Diane Smith (508) 533-1670

Mendon
Deborah Fate-Mental (508) 634-8603

Merrimac
Kerry Gosselin (978) 346-7298

Methuen
Jan Chetelat (978) 682-7665

Milford
Gail Berke (508) 473-8034

Milton
Hilary Black (617) 698-6249

Nantucket
Sunny Daily (508) 325-0687

Natick
Jennifer Harnish (508) 315-3623
Lynne Harvey (508) 655-1430
Jaye Regan (508) 651-9781

Needham
Barbara Popper (781) 444-3877

Newburtport
Jennifer Durning (978) 465-0365

Newton
Wendy Falchuk (617) 244-0477
Nicole Gann (617) 244-2881
Linda Hsu (617) 527-8343
Donna Lomp (617) 558-9808
Dot Norcross (617) 244-5593

North Andover
Kim Hearst (978) 682-9717
Jane Richard (978) 794-4630

North Attleboro
Wendi Bosland (508) 695-4835

Northampton
Alexa Fletcher (413) 586-5627

Northborough
Lynn Minasian-Somers (508) 393-8642

Northfield
Deirdre Hall (413) 297-7041

Norwell
Lou Ellen MacDonald (781) 659-1345

Orleans
Carolyn Witt (508) 255-8521

Oxford
Lois Harrison (508) 987-2576

Peabody
Tammy Dupont (978) 532-5290

Pembroke
Krishyon Young (781) 294-7477

Pepperell
Eve LaRochelle Faucher (978) 842-4108

Pittsfield
Judy Dorr (413) 443-9599

Quincy
Kelli Purchase (617) 639-5953
Teresa Sheedy (617) 773-0287

Reading
Carmen Dutile-Redfearn (781) 944-0377
Alison Evangelista (781) 779-1098

Rochester
Kimberly Walsh (508) 763-0051

Rutland
Gina Green (508) 886-0205

Salem
Michele Meehan-Parr (978) 745-5956
Julie Pottier-Brown (978) 745-5586

Scituate
Tina Conlon (781) 544-6226
Heather Jarnot (781) 544-9230

Sharon
Connie Shulkin-O'Brien (781) 784-9069
Susan Wittner (781) 784-7691

Sheffield
Janet Elsbach (413) 229-2003

Shirley
Sandi Manna (978) 425-2414

Shrewsbury
Deborah Del Dotto (508) 842-5093
Suzanne Holden (413) 245-3911

Somerset
Jamelle Lyons (508) 672-9272

Southborough
Mary Ellen Gilligan (508) 624-0833

Sterling
Elizabeth Bloemer (978) 422-8241

Stoneham
Barbara Graczyk (781) 979-9322
Mandy Neff (781) 481-9232

Stow
Anne Marie Jensen (978) 897-1930
Robyn Settino (978) 897-4251

Sturbridge
Erin Abrams (508) 259-1973

Sudbury
Kimberly Ho (978) 443-2548
Anne-Marie Hultin (978) 443-0766

Templeton
April Woodart-McNiff (978) 632-1860

Topsfield
Jeanine Cunniff (978) 887-5282

Wakefield
Victoria Doran (781) 245-3270
Amanda Ledwith (781) 246-3816

Waltham
Katherine Stavisky (781) 642-7587

Warren
Jennifer Killian (413) 436-5606

Wayland
Laurie Howell (508) 653-7767

Wellesley
Morgan Henderson (781) 577-2908

Wellfleet
Gabrielle Hathaway (508) 349-3988

Wenham
Maureen Whitman (978) 468-1268

West Barnstable
Debbie Hempel (508) 375-0119

West Springfield
Wendy Charbonneau (413) 781-4708

Westborough
Susan Mocsny Baker (508) 616-0316
Kristine Nazzaro (508) 898-2305

Westford
Daryl Marks-Strouble (978) 589-0901

Weymouth
Mary Jeanne Hickey (781) 337-4992
Pat MacNeil (781) 337-0145

Wilbraham
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Williamstown
Valerie Hall (413) 458-2853

Wilmington
Keri Schouten (978) 657-4720

Winchester
Patty Goodwin (781) 729-8261

Worcester
Heather Greenslit (508) 799-2322
Carol Mathewson (508) 752-9796
Wendy Walsh-Costello (508) 793-7838

Massachusetts Lactation Consultant Association

An Affiliate of the International Lactation Consultant Association

Lactation Work Area Code:

PP - Private Practice
OP - Office Practice
PR - Pump Rental
PC - Phone Counseling
LA - Non-English Language Ability
CP - Clinic Practice
BE - Breastfeeding Education
NU - Nutrition
RE - Research
HP - Hospital Practice
PE - Professional Education
HV - Home Visiting
DO - Doula

ACTON

Bonny Nothern, MSN, RNC, IBCLC
H: 978-263-0949

ACUSHNET

Carole Dufrane, RN, BSN, IBCLC
H: 508-995-7144
W: 508-679-3131 x2975
CP,HP,BE,PE

BEVERLY

Patty Wallis, RN, IBCLC
H: 978-927-2997
W: 978-922-3000 x 2203
HP,PR,PC,CP,PE,BE

Beverly Hospital

Patricia Gandt, RN, IBCLC
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HP,OP,PP,BE,PE

Patty Wallis, RN, IBCLC
H: 978-927-2997
W: 978-922-3000 x 2203
HP,PR,PC,CP, PE,BE

BOSTON

Gina Abbascia, RN, IBCLC
W: 617-732-8045
HP,BE,PR

Kim Barbas, BSN, IBCLC,RLC
W: 617-335-0005
HP,PE,BE,PR

Susan Davies, IBCLC
W: 339-222-6074
HP,HV,CP
Spanish

Boston Medical Center

Susan Davies, IBCLC
H: 617-876-0862
W: 617-922-7876
HP, HV, CP
Spanish

Donna Champagne, RN, IBCLC
H: 617-926-8926
W: 617-414-4363
PE,BE,HP,CP

Brigham & Women's Hospital

Gina Abbascia, RN, IBCLC
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HP,BE,PR

Brigham & Women's Hospital, cont'd

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W: 617-732-8045
HP,BE,PE

Children's Hospital

Kim Barbas, BSN, IBCLC, RLC
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HP,PE,BE,PR

Karen Sussman-Karte, RN, IBCLC
W: 617-355-0005
HP,PR,CP

Mass General Hospital

Germaine Lambergs, RNC, IBCLC
W: 617-724-9310
HP,GR

Susan Worden, RN, IBCLC
H: 781-944-2824
W: 617-724-4310
HP

Tufts NE Medical Center

Lisa Enger, RN, BSN, IBCLC
H: 781-596-0005
W: 617-636-0175
HP,PR,BE,PE

BROCKTON

Ilene Fabisch, IBCLC, LLL
H: 508-584-3417
W: 508-588-8241
PP,BE,CP,PC

Brockton WIC

Ilene Fabisch, IBCLC, LLL
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W: 508-588-8241
PP,BE,CP,PC

BROOKLINE

Gail Levy, RN, IBCLC
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PP,BE,HV,OP

Elizabeth Sargent, IBCLC
W: 781-429-1434
PP,BE,PE,PR,HV,CP,PC,GS

Isis Maternity Center

Elizabeth Sargent, IBCLC
W: 781-429-1434
PP,BE,PE,PR,HV,CP,PC,GS

BURLINGTON

Lahey Clinic

Louise Horgan, RN, IBCLC
H: 781-893-5399
W: 781-273-8083
CP

CAMBRIDGE

Kate Reist, CNM, IBCLC
W: 617-665-1381
HP,PC,LA, GR
Spanish, Portuguese, Haitian Creole

Cambridge Health Alliance

Kate Reist, CNM ,IBCLC
W: 617-665-1381
HP,PC,LA
Spanish, Portuguese, Haitian Creole

Jewish Family Services – BF Support

Susan Davies, IBCLC
W: 339-222-6074
HP,HV,CP
Spanish

CHESHIRE

Rosalie Girard, IBCLC
H: 413-743-0356
W: 413-743-5338
PP,BE,PE,HP,PR

CHESTNUT HILL

Anne Merewood, RN, IBCLC
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FALL RIVER

Charleton Hospital

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W: 508-679-3131 x2975
CP,HP,BE,PE

Janine Fontaine, BSN, RN, IBCLC
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HP

FALMOUTH

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W: 508-274-0174
PC,

Falmouth Hospital

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W: 508-457-3630

FRAMINGHAM

Mary Fischer, MSN, RNP, IBCLC
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PP,BE,PC,HV

FRAMINGHAM, cont.

Maureen Dedominici, RN, BSN, IBCLC
H: 508-883-4846
W: 508-383-1430
BE.HP,PR

Metro West Medical Center

Maureen Dedominici, RN, BSN, IBCLC
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W: 508-383-1430
BE.HP,PR

GARDNER

Gail Chaffee, RN, IBCLC
W: 978-630-6990

Heywood Hospital

Gail Chaffee, RN, IBCLC
W: 978-630-6990

Visiting Lactation Consultant

Gail Chaffee, RN, IBCLC
W: 978-630-6990

GLOUCESTER

Kitty Hunt, IBCLC
H: 978-525-3065
PP

GREENFIELD

Franklin Medical Center

Eleanor Mitchell, RNC, IBCLC, CIMI
W: 413-773-2269
BE,HP,PR

HAVERHILL

Dorothy Nelson, RNC, IBCLC
H: 978-373-9710
W: 978-683-4000 x2282
HP,PE,BE,PR

HINDSDALE

Mary Helen Lennon, RNC, IBCLC
H: 413-655-2012
W: 413-447-2609
HP

HOPEDALE

Laura Fantini, RNC, IBCLC
H: 508-478-6220
W: 508-422-2990
HP,BE,PE,PC,PP, HV

LAWRENCE

Marilyn Farland, IBCLC
H: 781-861-1535
PP,HV,HP,NU Greek

Lawrence General Hospital

Dorothy Nelson, RNC, IBCLC
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W: 978-683-4000 x2282
HP,PE,BE,PR

LEXINGTON

Marilyn Farland, IBCLC
H: 781-861-1535
PP,HV,HP,NU Greek

Michele Weisberg, RN, IBCLC
H: 781-861-6653
PP,PR,HV,PC

LONGMEADOW

Pioneer Valley Pediatrics

Gayle Midura, RN, IBCLC
H: 413-732-5359
W: 413-567-1031
BE,PC,OP,GR

LYNNFIELD

Lisa Enger, RN, BSN, IBCLC
H: 781-596-0005
W: 617-636-0175
HP,PR,BE,PE

MARLBORO

Marilyn Blythe, RN, IBCLC
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W: 617-732-8045
HP,BE,PE

MARSHFIELD

Nancy Paronich, RNC,BSN,IBCLC
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W: 781-834-4600
HV,PR,PP

MASHPEE

Heather Lakatos, RN, BSN, IBCLC
H: 508-477-5120
W: 508-457-3630
PP, BE

MAYNARD

Michelle Stolow, MA., ICCE, IBCLC
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W: 978-793-1429
PP,BE,HV,PR, PC

MELROSE

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PC, Spanish

Melrose/Wakefield Hospital

Mary Foley, RN, IBCLC
H: 781-935-6342
W: 781-979-3650
HP,PR,BE,PE,CP,OP

MIDDLETON

Ruth Lackie, RN, IBCLC
H: 978-777-3102
HP,CP,BE,PE

MILFORD

Milford Regional Medical Center

Laura Fantini, RNC, IBCLC
H: 608-578-6330
W: 508-422-2900
HP,BE,PE,PC,PP,HV

MILTON

Hilary Black, RN, BSN, IBCLC
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W: 617-696-6891
hilaryblack@comcast.net

NEEDHAM

Elizabeth Sargent, IBCLC
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PP,BE,PE,PR,HV,CP,PC

NEW BEDFORD

South Coast Hospitals Group – St. Luke

Donna Manna, RNC, IBCLC
W: 508-997-6455
HP,PC, BE, GR

NEWTON

Cally Gwon, MD, IBCLC
W: 617-965-6700
PP Pediatrician

Gail Levy, RN, IBCLC
W: 781-693-5668
PP,HV,BE,OP

Hope Kellman, BSN, RN, IBCLC
H: 617-224-0306
HP

Naomi Bar-Yam, MSW, ICCE, PhD
H: 617-964-6676
BE, PE

Lactation Care. Inc.

Sandra Corsetti, IBCLC
H: 617-527-3338
W: 617-244-5593
PP,BE,PR

Mother's Milk Bank of NE

Naomi Bar-Yam, MSW, ICCE, PhD
H: 617-964-6676
BE, PE

Newton Wellesley Family Pediatrics

Cally Gwon, MD, IBCLC
W: 617-965-6700
PP Pediatrician

NEWTON CENTER

Sandra Corsetti, IBCLC
H: 617-527-3338
W: 617-244-5593
PP

NORTH ADAMS

North Adams Regional Hospital

Rosalie Girard, IBCLC
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W: 413-743-5338
PP,BE,PE,HP,PR

NORTH ANDOVER

Barbara Lenihan, RN, MS, IBCLC
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PP,OP,PC

Andover Pediatrics

Barbara Lenihan, RN, MS, IBCLC
H: 978-683-6861
PP,OP,PC

NORTH DARTMOUTH

Donna Manna, RNC, IBCLC
W: 508-997-6455
HP,PC BE,GR

Patricia Pomfret, RN, IBCLC
W: 508-997-8950
OP

Southeast Primary Care

Patricia Pomfret, RN, IBCLC
W: 508-997-8950
OP

PITTSFIELD

Mary-Jane Sackett, RN, IBCLC, CCE, CP
H: 413-499-3428
W: 413-447-2862
PP,BE,HV,PR,DO

Berkshire Medical Center

Mary Helen Lennon, RNC, IBCLC
H: 413-655-2012
W: 413-447-2609
HP

Debbie Windover, BA, CLC, CCE
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W: 413-447-2400
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Berkshire VNA

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PLYMOUTH

Nancy Paronich, RNC, BSN, IBCLC
H: 508-764-6164
W: 781-834-4600
HV,PR,PP, PC

PORTLAND, ME

Carole Tubbs, RN, IBCLC
H: 207-693-4678

READING

Susan Worden, RN, IBCLC
H: 781-944-2824
W: 617-724-4310
HP

RUTLAND

Diana Provencher, RNC, IBCLC
H: 508-886-2816
HP

SALEM

Sharon Julien, RN, IBCLC
W: 781-979-3650
HP,BE,CP,PR

SHARON

Virginia Devlin, RNC, IBCLC
H: 781-784-3516
W: 339-364-0913
HV,PP

SHELBURNE

Eleanor Mitchell, RNC, IBCLC, CIMI
W: 413-773-2269
HP,PR

SOMERSET

Janine Fontaine, BSN, RN, IBCLC
W: 508-679-7062
HP

SOUTHBORO

Germaine Lambergs, RNC, IBCLC
W: 617-724-9310
HP,GR

SPRINGFIELD

Judy Hatch, RN, MS, IBCLC
W: 413-566-3635
PP,BE,PE,HV,PR,PC,GR

SPRINGFIELD, cont.

Baystate Medical Center

Nancy Aberdale, RN, BSN, IBCLC
W: 413-794-5312
BE,PE,PC,HP,PR

STERLING

Debra Page, RN, IBCLC
W: 978-422-9070
PP,BE,HV,HP,PR. PC
www.thenewbornbaby.com

STONEHAM

Charlotte Conway, RN, BS, IBCLC
H: 781-438-2147
W: 617-667-5765
BE,HP,PE

TAUNTON

Morton Hospital

Suzette Tanguay, RN, IBCLC
H: 508-822-9892
W: 508-828-7145
HP,CP

TOPSFIELD

Patricia Gandt, RN, IBCLC
W: 978-922-2203
HP,OP,PP,BE,PE

UXBRIDGE

Tri-River Family Health Center

Margaret Stewart, IBCLC, CPNP, MA
H: 774-573-1710
W: 508-278-8389
OP,PC,BE,

WAKEFIELD

Lucia Jenkins, RN, IBCLC
H: 781-246-5059
W: 781-979-3650
HP,PP,BE,PE,CP

Melrose-Wakefield Hospital

Sharon Julien, RN, IBCLC
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HP,BE,CP,PR

WALTHAM

Louise Horgan, RN, IBCLC
H: 781-893-5399
W: 781-273-8083
CP

Jewish Family Services – Breastfeding Svs.

Gail Levy, RN, IBCLC
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PP,HV,BE,OP

WATERTOWN

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W: 617-414-4363
PE,BE,HP,CP

WESTON

Marsha Walker, RN, IBCLC
H: 781-893-3553
PE

WEYMOUTH

South Shore Hospital

Hilary Black, RN, BSN, IBCLC
W: 781-740-8602
PP,HV,HP,PR,CP

South Shore Hospital, cont.

Hope Kellman, BSN, RN, IBCLC
H: 617-224-0306
HP

WILLIAMSTOWN

Debbie Windover, BA, CLC, CCE
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W: 413-447-2400
BE,PC,NU,DO

WOBURN

Mary Foley, RN, IBCLC
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W: 781-979-3650
HP,PR,BE,PE,CP,OP

Janice Palmer, RN, BSED, IBCLC
H: 781-935-7117
W: 781-756-4788
BE, PC,PR,OPHP

Winchester Hospital

Janice Palmer, RN, BSED, IBCLC
H: 781-935-7117
W: 781-756-4788
BE, PC,PR,OPHP

WORCESTER

St. Vincent Medical Center

Diana Provencher, RNC, IBCLC
H: 508-886-2816
HP

THE BOSTON ASSOCIATION FOR CHILDBIRTH EDUCATION

NURSING MOTHERS' COUNCIL
(617) 244-5102

BACE President: Mary Zentis (508) 877-0521
Vice President for NMC: Robin Snyder-Drummond (617) 435-0693
Training Director: Sherry Spacco (781) 344-5416

*** March 2008 ***

The volunteers listed below are all trained breastfeeding counselors who are available to answer questions and offer lactation support – **FREE** of charge. **NOTE: Every effort is made to keep the list current, but if you have any trouble reaching an individual counselor, please call our office at (617) 244-5102 for a prompt referral.**

(*) = Best times to reach counselor are nights and weekends **(#)** = Electric Breastpump Rental Station
We have counselors who speak Spanish **(S),** French **(F),** Hebrew **(H),** Norwegian**(N)** and German **(G).**

ACTON
Lisa Berry Moorman (617) 519-4334

AGAWAM
Sarah Nacewicz (413) 454-5775

ARLINGTON
Wendy Mackey-Kydd (781) 648-8632

BILLERICA
Sheilajane Lewis (978) 667-5540

BOSTON
Kimberly Barbas (617) 355-2086 (work: 7-3:30)
Rachel Colchamiro (617) 624-6153
(work: M-W, Fri 7:30-5:30)
Deborah Howland (617) 524-4202 *

BOYLSTON
(F) Jeanette Mesite Frem (508) 869-2737

CAMBRIDGE
(G)(H) Patricia Loewy (617) 230-4836

DEDHAM
Joanne Scaramuzzo (781) 329-9357
Anita Poncia (781) 326-5675 *

FRAMINGHAM
Mary Zentis (508) 877-0521

GRAFTON
Jessica McCann (508) 839-6815 *

HUDSON
Elizabeth Oberacker (508) 414-8395 *

KINGSTON
Tammy Brown (781) 789-0702

LEXINGTON
Lori Andersen (781) 674-0261

MANSFIELD
Rachel Colchamiro (508) 337-6827 *

MELROSE
(S) Elaine Mazgelis (781) 662-2431 *
Robin Snyder-Drummond (617) 435-0693

NATICK
(#) Alexis Topham (508) 653-2160 PUMPS ONLY

NEEDHAM
Beth Sargent (781) 444-7478
Maria Vallace (781) 449-9968
Christine Nigrin (617) 686-1919

NEW BEDFORD
Michelle Brodeur (508) 995-5458 *

NEWTON
Linda Winslow (617) 243-6314 (work: 8-4:30)

NORTH ATTLEBORO
Sue Marceau (508) 399-8277 *

NORTH EASTON
Diane Cella (508) 238-4529

NORTHBORO
Kathleen Todd-Seymour (508) 393-4551

NORWOOD
Anita Poncia (781) 278-6402 (work:Wed. 11-7,
Mon,Tues,Thurs. 10-2)

PEMBROKE
Kim Lebowitz (781) 293-5869

PLYMOUTH
Kim Bakarian-Gaynor (508) 209-2922

PLYMPTON
Frances Lundgren (781) 585-9507

QUINCY
Ali Crehan Feeney (617) 472-2261

REVERE
Lucille Catricala (781) 321-6948

SALEM
(F) (N) Debra Dwyer (978) 944-0275

E. SANDWICH
Ericka Lavin (508) 888-0626

SEEKONK
Beverly Bovi (508) 336-7022

SOUTH DARTMOUTH
Kathy Egan (508) 636-3425

STOUGHTON
Dana Paris-Mahoney (781) 344-1482
Sherry Spacco (781) 344-5416

WALPOLE
Linda Winslow (508) 668-3482 *

WAYLAND
Susan Howe (508) 358-1632

WESTON
Carrie Dagres (781) 899-7236*

WESTWOOD
Kathleen Pellegrini (781) 326-9071

WEYMOUTH
Stacy Margetts (781) 340-1036

WORCESTER
(#) Carol Mathewson (508) 752-9796

CONNECTICUT
Martine Saint-Cyr (617) 797-6753

MAINE
Melissa Walters (207) 725-6124

RHODE ISLAND
Alicia Lambert (401) 714-0809

NEW YORK
Susan Sneeringer (518) 438-3980

(#) designates breastpump rental station. **(*)** indicates that the best times to reach a counselor are evenings and weekends. We have counselors who speak Spanish **(S),** French **(F),** Arabic **(A),** Hebrew **(H),** Norwegian **(N)** and German **(G).** The telephone counseling offered by NMC is free. Any contribution you would like to make to help support these services would be greatly appreciated. Please send your tax-deductible contribution to the address below. THANK YOU!

NMC is a non-profit organization. Sales and rentals of breastpumps help to support our free telephone counseling. Visit us at www.bace-nmc.org to learn more.

		Tax	Priority Shipping*
• **2008** Medela **PUMP-IN-STYLE ADVANCED SHOULDER BAG** electric breastpump.with Natural Expression™ 2 mode pumping.	225.00	11.25	13.00
• **2008** Medela **PUMP-IN-STYLE ADVANCED BACKPACK** (same features as above)	225.00	11.25	13.00
• Medela **SINGLE DELUXE** breastpump	50.00	2.50	6.00
• Medela **HARMONY** manual pump with Natural Expression™	25.00	1.25	5.00
• Medela Breast Shells (pair)	9.80	.49	2.00
• Medela Supplemental Nursing System (like Lact-Aid)	34.00	1.70	2.50
• Medela Lactina double pumping kit (for use with rental pumps)	40.00	2.00	5.00

ALL PUMPS ARE NEW AND FACTORY SEALED.
Please call number below to arrange to pick up your order or send a check for total including tax and shipping to :
BACE • 69 Court St., Newton, MA 02458 • 617-244-5102

PLEASE CONTACT US for additional information about:
• Referrals to lactation professionals or childbirth educators
• Becoming an NMC volunteer counselor
• Professional lactation education
• Professional education for childbirth educators

The Boston Association for Childbirth Education

BACE

Breastfeeding **A**nd **C**hildbirth **E**ducation
For families and those who support them
bace@rcn.com • 617-244-5102 • www.bace-nmc.org

MASSACHUSETTS WIC PROGRAM: BREASTFEEDING COORDINATORS

PC= Breastfeeding Peer Counselor Program

IBCLC=International Board Certified Lactation Consultant CLC=Certified Lactation Counselor

Berkshire North WIC Program *PC*
Sue Antil, CLC (413) 445-9249

Berkshire South WIC Program *PC*
Shauna Dullaghan (413) 528-0457

Blue Hill Corridor WIC Program *PC*
Kevin Kuthan, CLC (617) 822-5588

Brighton/Roslindale WIC Program
Esperanza Mendez, CLC (617) 254-0492

Brockton WIC Program *PC*
Ilene Fabisch, IBCLC (508) 588-8241

Cambridge/Somerville WIC Program *PC*
Elaine Mazgelis, IBCLC (617) 665-3750

Cape Cod WIC Program *PC*
Ellen Brumfield, CLC (508) 771-7896

Chelsea/Revere WIC Program
Corey Greene, CLC (781) 485-6040

Dorchester North WIC Program *PC*
Kerry Lynch, CLC (617) 825-8994

Dorchester South WIC Program *PC*
Susan Hardiman, CLC (617) 825-0805

East Boston WIC Program
Samun Uch, CLC (617) 568-6400

Fall River WIC Program *PC*
Nancy Matheny, IBCLC (508) 679-9349

Framingham/Waltham WIC Program *PC*
Maribel Lavandier, CLC (508) 620-1445

Franklin/Hampshire/No Quabbin WIC Program *PC*
Karena Longo, CLC (413) 773-3421

Holyoke/Chicopee WIC Program *PC*
Judy Devaux (413) 612-0214

Jamaica Plain WIC Program *PC*
Laura Sprauer, IBCLC (617) 983-6086

Lawrence WIC Program *PC*
Nancy Mooney, IBCLC (978) 681-4960

Lowell WIC Program *PC*
Emily Proctor, IBCLC (978) 454-6397

New Bedford WIC Program *PC*
Allison Florent, CLC (508) 997-1500

North Central WIC Program *PC*
Breana Buckley , CLC (978) 345-6272

North Suburban WIC Program *PC*
Paula Karim, CLC (781) 338-7578

Northern Essex WIC Program *PC*
Hope Davenport (978) 374-2189

North Shore WIC Program *PC*
Kimberly Griffin, IBCLC (781) 599-7290

Outer Cape WIC Program *PC*
Cynthia Gohring, CLC (508) 240-0853

Plymouth WIC Program *PC*
Debra Broderick (508) 747-4933

Quincy WIC Program *PC*
Kathy Sweeney, IBCLC (617) 376-4190

Roxbury WIC Program *PC*
Darlene Horton, CLC (617) 989-3055

South Boston WIC Program *PC*
Phoebe Flemming (617) 464-5850

South Central WIC Program *PC*
Amanda Wolanski, CLC (508) 765-0139

South Cove WIC Program *PC*
Peggy Leung, CLC (617) 521-6777

South End WIC Program *PC*
Diane Salazar, CLC (617) 425-2070

Springfield North WIC Program *PC*
Delmarie Rivera (413) 734-3133

Springfield South WIC Program *PC*
Jackie Jones, CLC (413) 693-1021

Taunton/Attleboro WIC Program *PC*
Priscilla Glode, CLC (508) 823-6346

Worcester WIC Program *PC*
Julie Demoracski (508) 860-7741

Massachusetts State WIC Office
Rachel Colchamiro, CLC (617) 624-6153
Julie Forgit, CLC

ADDITIONAL BREASTFEEDING SUPPORT SERVICES IN MASSACHUSETTS

In addition to the listings on the previous pages, breastfeeding care and related services are also available from the following individuals and organizations:

Nancy Aberdale, RN, MSN, IBCLC
Baystate Health
Springfield, MA
413-794-5312
Offering prenatal breastfeeding classes, post-delivery assistance, telephone support for breastfeeding mothers 7 days/week, outpatient services, a free breastfeeding support group, retail breastfeeding products for sale and a breast pump rental station.

Maureen Allen, BSN, RN, IBCLC
Groton, MA
978-512-9179
Offering home visits and professional breastfeeding education.

Kathleen M. Howard, RN, BSN, IBCLC
Medway
508-634-MILK (508-634-6455); www.bestforbaby.org
Offering private practice lactation services including home visits, prenatal breastfeeding classes and postpartum visits.

Tanya Lieberman, IBCLC
Northampton
413-587-3908; napbreastfeedingsupport@gmail.com
Offering breastfeeding support groups and individual consultations through Northampton Area Pediatrics.

Kissy Mathewson, MS, IBCLC
Belchertown, MA
413-237-8505
kissymat@charter.net
Offering home consultations.

Carla Moquin
President, Parenting in the Workplace Institute
39 Edwards Street
Framingham, MA 01701
(801) 897-8702; carla@babiesatwork.org
Provides free assistance for individuals and businesses focusing on implementation of business programs allowing employees to bring their babies with them to their jobs for approximately the first six months of life.

Mothers and Company
Jeanette Frem, MHS, CCC, BC, CP
Debbie Page, RN, IBCLC
Shrewsbury, MA
508-410-9388
www.mothersandcompany.com
Offering lactation consultation, breastfeeding warm-line, infant massage and mothers' support groups each Thursday.

Marcie Richardson, MD, FACOG, Obstetrician
Harvard Vanguard Medical Associates
Boston, MA
617-859-5250
Offering breastfeeding friendly obstetric care.

Mary-Jane Sackett, RN, BSN, IBCLC
Pittsfield
Berkshire Medical Center: 413-447-2114, ext. 6335
Berkshire Visiting Nurse Association: 413-447-2862
Labors of Love Doula Service: 413-446-3942
Offering in-hospital and in-home lactation consultation and childbirth education.

Ameda (Hollister)
2000 Hollister Dr.
Libertyville, IL 60048-3781
800 323-4060 (orders)
www.ameda.com

Birth & Life Bookstore
1826 NW 18th St.
Portland, OR 97209
800 443-9942

Childbirth Graphics
WRS Group, Ltd
P.O. Box 21207
Waco, TX 76702-1207
800 299-3366 x287
www.childbirthgraphics.com

Commonsense Breastfeeding
136 Ellis Hollow Creek Rd
Ithaca, NY 14850
607 277-0384
www.weissinger.baka.com

Geddes Productions
PO Box 41761
Los Angeles, CA 90041
323-344-8045
www.geddesproductions.com

Health Education Associates Inc.
327 Quaker Meeting House Rd.
East Sandwich, MA 02537
508 888-8044

Health Education Services
P.O. Box 7126
Albany, NY 12224
518 439-7286
www.hes.org

International Childbirth Education Association
P.O. Box 20048
Minneapolis, MN 55420
800 624-4934 (orders)
www.icea.org

Iowa Dept of Public Health
321 East 12th Street
5th Fl, Lucas Bldg
Des Moines, IA 50319
515 281-4919
www.idph.state.ia.us

Lactation Institute
3441 Clairton Pl.
Encino, CA 91436
818 995-1913
www.lactationinstitute.org

La Leche League, Intl
1400 N Meacham Rd
Schaumburg, IL 60173
847 519-9585 (orders)
www.lalecheleague.org

Lactation Associates
254 Conant Rd
Weston, MA 02493
781 893-3553

Massachusetts Dept of Public Health WIC Program
250 Washington St, 6th Floor
Boston, MA 02108
617 624-6100
www.state.ma.us/dph

Medela, Inc.
1101 Corporate Drive
McHenry, IL 60051
800 435-8316
www.medela.com

Missouri Dept of Health and Senior Services
PO Box 570
Jefferson City, MO 65102
573 751-6400
www.dhss.mo.gov

Noodle Soup of Weingart Design
4614 Prospect Ave, #328
Cleveland, OH 44103
800 795-9295
www.noodlesoup.com

Seattle-King County Dept of Public Health
999 3rd Avenue, Suite 900
Seattle, WA 98104
206 296-4786
www.metrokc.gov/health/breastfeeding

Texas Dept of Health
1100 W 49th St.
Austin, TX 78756
512 341-4444
www.dshs.state.tx.us/wichd/lactate

Discharge Instructions

Building your milk supply:

- Feed early and often, at the earliest signs of hunger.
- 8-12 feedings per 24 hours is expected, although these feedings may not follow a regular schedule.
- Avoid pacifiers or bottles, at least in the first 4-8 weeks.
- Frequent feeds, not formula: Only use formula if there's a medical reason.
- Sleep near your baby, even at home. Learn to nurse lying down.

Feed at the earliest signs of hunger:

- Hands to mouth, sucking movements.
- Soft cooing, sighing sounds, or stretching.
- Crying is a late sign of hunger: don't wait until then!

Watch the baby, not the clock.

- Alternate which breast you start with, or start with the breast that feels most full.
- Switch sides when swallowing slows or infant takes himself off.
- It's OK if baby doesn't take the second breast at every feed.
- Help baby open his mouth widely: tickle his upper lip, or use your nipple to stroke his chin.
- If the baby is sleepy: skin-to-skin contact can encourage feeding:
  - Remove baby's top and place him on your bare chest.

Look for signs of milk transfer:

- You can hear the baby swallowing or gulping.
- There are no clicking or smacking sounds.
- Baby no longer shows signs of hunger after a feed.
- Baby's body and hands are relaxed for a short time.
- You may feel milk let-down:
  - You may feel relaxed, drowsy, or thirsty, and you may have tingling in your breasts.
  - You may feel some contractions in your uterus, or your other breast may leak milk.
- You should feel strong tugging, but NOT persistent pain. Proper latch prevents pain:
  - "chin-to-breast, chest-to-chest"
  - "flip lips for a sip:" baby's lips flare outward
  - wide open mouth: baby's mouth covers most of the areola (dark area of breast)—not just the nipple.
- Baby has adequate weight gain: follow up 2 days after discharge and again at 2 weeks.

What goes in, must come out. Look for:

- 3 bowel movements every 24 hours by day 4
- Bowel movements change from dark black to green/brown to loose yellow as your milk comes in.
- 6 wet/heavy diapers a day after day 4

Over time:

- All babies have days when they nurse more frequently. This doesn't mean you aren't making enough milk.
- Responding to feeding cues helps babies to regulate milk supply.
- Breast swelling normally lessens at about 7-10 days and it is NOT a sign of decreased milk supply.
- Your milk may look thin or bluish, but it contains plenty of nutrients.

If you choose to share a bed with your baby:

- Keep the bed away from walls on both sides to avoid entrapment.
- Avoid heavy blankets, duvets, or pillows.
- Avoid soft surfaces such as waterbeds, couches, and daybeds.
- Neither parent should be under the influence of alcohol, illegal drugs, or medications that would affect the ability to wake up.
- As with sleeping separately, put the baby to sleep on his back.
- Do not allow the baby to sleep alone on an adult bed.
- Do not allow anyone except the baby's parents to share a bed with the baby.
- Because the risk of Sudden Infant Death Syndrome is higher in children of smokers, parents who smoke should not bedshare, but may sleep with the baby nearby.

If you have questions, persistent pain, or can't hear swallowing, ask for help right away!

Massachusetts Breastfeeding Coalition

254 Conant Road, Weston MA 02493
www.massbfc.org

Making Milk *is Easy!*

10 Steps to Make Plenty of Milk

1 Frequent feeds, not formula.
The more often you feed, the more milk you make. If you give formula, your baby will feel too full to nurse frequently.

2 All you need is breastmilk!
The American Academy of Pediatrics recommends that your baby have a diet of purely breastmilk for the first 6 months – no other food or drink is needed.

3 Feed early and often.
Feed at the earliest signs of hunger: if baby's awake, sucking on hands, moving his mouth or eyes, or stretching.

4 If he didn't swallow, he didn't eat.
Listening for the sound of swallowing will help you know if your baby's getting enough.

5 Say 'No' to pacifiers and bottles.
If pacifiers and bottles are used when your baby is hungry, you may not be nursing often enough to make plenty of milk.

6 Sleep near your baby and nurse lying down.
You can rest while you feed your baby!

7 Have baby's mouth open wide like a shout, with lips flipped out.
The tip of your nipple should be in the back of his throat. He should be directly facing you, chest-to-chest, chin-to-breast. Proper positioning prevents sore nipples.

8 Watch the baby, not the clock.
Feed your baby when she's hungry, and switch sides when swallowing slows down or she takes herself off the breast.

9 Go everywhere!
Plan to take your newborn everywhere with you for the first several weeks.

10 Don't wait to ask for help, if you need it.
If you wait too long to get the help you need, it may be harder to breastfeed. Stick with it – it's worth it!

Massachusetts Breastfeeding Coalition

http://www.massbfc.org | 254 Conant Road, Weston, MA 02493 | email: massbfc@massbfc.org | webmaster: martyep@massbfc.org

It's my birthday, *give me a hug!*

Skin-to-Skin Contact for You and Your Baby

Photo © 2005 Pascale Wowak

What's "Skin-to-Skin"?

Skin-to-skin means your baby is placed belly-down, directly on your chest, right after she is born. Your care provider dries her off, puts on a hat, and covers her with a warm blanket, and gets her settled on your chest. The first hours of snuggling skin-to-skin let you and your baby get to know each other. They also have important health benefits. If she needs to meet the pediatricians first, or if you deliver by c-section, you can unwrap her and cuddle shortly after birth. Newborns crave skin-to-skin contact, but it's sometimes overwhelming for new moms. It's ok to start slowly as you get to know your baby.

Breastfeeding

Snuggling gives you and your baby the best start for breastfeeding. Eight different research studies have shown that skin-to-skin babies breastfeed better. They also keep nursing an average of six weeks longer. The American Academy of Pediatrics recommends that all breastfeeding babies spend time skin-to-skin right after birth. Keeping your baby skin-to-skin in his first few weeks makes it easy to know when to feed him, especially if he is a little sleepy.

A Smooth Transition

Your chest is the best place for your baby to adjust to life in the outside world. Compared with babies who are swaddled or kept in a crib, skin-to-skin babies stay warmer and calmer, cry less, and have better blood sugars.

Bonding

Skin-to-skin cuddling may affect how you relate with your baby. Researchers have watched mothers and infants in the first few days after birth, and they noticed that skin-to-skin moms touch and cuddle their babies more. Even a year later, skin-to-skin moms snuggled more with their babies during a visit to their pediatrician.

Skin-to-Skin Beyond the Delivery Room

Keep cuddling skin-to-skin after you leave the hospital– your baby will stay warm and comfortable on your chest, and the benefits for bonding, soothing, and breastfeeding likely continue well after birth. Skin-to-skin can help keep your baby interested in nursing if he's sleepy. Dads can snuggle, too. Fathers and mothers who hold babies skin-to-skin help keep them calm and cozy.

About the research

Multiple studies over the past 30 years have shown the benefits of skin-to-skin contact. In all the studies described here, mothers were randomly assigned to hold their babies skin-to-skin or see them from a distance. For more information, see GC. Moore, E. Hepworth, J. Bergman, N. Early skin-to-skin contact for mothers and their healthy newborn infants. [Systematic Review] *Cochrane Pregnancy and Childbirth Group Cochrane Database of Systematic Reviews.* 2, 2005.

Massachusetts Breastfeeding Coalition 2008

Massachusetts Breastfeeding Coalition
254 Conant Road, Weston, MA 02493

Books for Parents

100 Questions & Answers About Breastfeeding (2008)
Karin Cadwell, Cindy Turner-Maffei &
Anna Cadwell Blair
Jones and Bartlett Publishers

Breastfeeding: A Parent's Guide (2000)
Breastfeeding Pure and Simple (2004)
Amy Spangler
PO Box 501046
Atlanta, GA 31150
770 913-9332

The Breastfeeding Book (2000)
William Sears, Martha Sears
Little, Brown & Co

Breastfeeding Made Simple (2005)
Nancy Mohrbacher, Kathleen Kendall-Tackett

Breastfeeding Pure and Simple (Revised 2000)
Gwen Gotsch
La Leche League, International

Breastfeeding Your Premature Baby (1999)
Gwen Gotsch
La Leche League International

Mothering Your Nursing Toddler (revised 2000)
Norma Jane Bumgarner
La Leche League, International

New Mother's Guide to Breastfeeding (2002)
Joan Younger Meek
American Academy of Pediatrics
Bantam Books

The Nursing Mother's Companion (revised 2005)
Kathleen Huggins
Harvard Common Press

The Nursing Mother's Guide to Weaning (1994)
Kathleen Huggins, Linda Ziedrich
Harvard Common Press

Nursing Mother, Working Mother (1997)
Gale Pryor
Harvard Common Press

Ultimate Breastfeeding Book of Answers (2000)
Jack Newman, Teresa Pitman
Crown Publishing Group

Why Should I Nurse My Baby? (2001)
Pamela Wiggins
Noodle Soup of Weingart Design

The Womanly Art of Breastfeeding (2004)
La Leche League, International

Health Education Associates
327 Quaker Meeting House Rd.
East Sandwich, MA 02537
508 888-8044
www.healthed.cc

She Needs You $29.95
Featuring Chloe Fisher/Swedish Breastfeeding Institute
English. 20 minutes
Explanation and hands-on technique of latch-on. DVD or VHS

Breast is Best $49.95
From Norway—in English. 35 minutes
Basic breastfeeding how-to video.

Breasts and Breastfeeding: Common Early Concerns $29.95
For use with health professionals.

Childbirth Graphics
PO Box 21207
Waco, TX 76702-1207
800 299-3366 x287
www.childbirthgraphics.com

14 Steps to Better Breastfeeding $99.95
English. 16 minutes

The Benefits of Breastfeeding $59.00
English or Spanish. 21 or 14 minutes

Teen Breastfeeding –2 Vol. Set $139.95
Vol.1 Why Breastfeed (20 minutes)
Vol.2 Starting Out Right (28 minutes)

Breastfeeding:
Coping with the First Week $79.95
English. 30 minutes

Geddes Productions
PO Box 41761
Los Angeles, CA 90041-0761
323-344-8045
www.geddesproductions.com

Breastfeeding Techniques That Work
$10.00 - $49.00 each
Kittie Frantz
English. 15-51 minutes

First Attachment (DVD or VHS)
First Attachment in Bed
First Attachment After Cesarean
Burping Baby
Hand Expression
Successful Working Mothers
Supplemental Nutrition System

Delivery Self Attachment
English. 6 Minutes. $15.00
Eng. & Spanish DVD $19.95
Video to assist in decisions made during labor and following delivery that affect breastfeeding.

Kangaroo Mother Care $40.00
English. 26 minutes
Features Nils Bergman, MD.

United Learning
1560 Sherman Ave, Suite 100
Evanston, IL 60201
Fax 847 328-6706
888-892-3484www.unitedlearning.com

The Case for Breastfeeding $79.00
English and Spanish. 13 minutes

The Joy of Breastfeeding $89.00
English and Spanish. 12 minutes

Breastfeeding Basics: From Birth to Year 1 $89.00
English. 13 minutes

Breastfeeding: The Best Beginnings $89.00
English. 13 minutes

Marge Ellgen/Neonatal Offices
The Children's Mercy Hospital
2401 Gillham Rd
Kansas City, MO 64198

The Special Touch Babies Need: Care of the Infant with Cleft Lip/Palate
1998 FREE

Media/Materials Clearinghouse
Johns Hopkins Center for Communication Programs
111 Market Place, Suite 310
Baltimore, MD 21202
410 659-6290

Giving You the Best That I Got, Baby
$20.00. English. 14 minutes

Learning How to Breastfeed Your Baby
$20.00. English. 14 minutes

Injoy Videos
7107 La Vista Place
Longmont, CO 80503
800 326-2082
www.injoyvideos.com

Better Breastfeeding $159.95
English or Spanish. 25 minutes

Breastfeeding and Basketball $79.95
English. 8 minutes. For dads.

Breastfeeding Basics

Volume 1 – The Breastfeeding Game
English. 22 minutes $99.95
Volume 2 – Valerie's Diary
English. 23 minutes $99.95.
Volume 3 – Straight Talk from Breastfeeding Moms
English. 21 minutes $99.95.
Volume 4 – Simple Solutions
English. 33 minutes. $99.95
Problems pumping and storing breast milk.

Vida Health Communications
6 Bigelow St
Cambridge, MA 02139
800 550-7047
www.vida-health.com

Breastfeeding: Why To $175.00
English. or Spanish 19 minutes

Breastfeeding: How To $175.00
English. or Spanish 30 minutes

Combination set "Why To, How To":
$295
English: 2 DVDs or 2 VHS
Spanish: 2 VHS

(Bulk orders significantly lower costs—affordable for parents to take home.)

The Clinical Management of Breastfeeding for Health Professionals $395.00 for complete curriculum on two videos.
102 minutes.

Course covers the fundamentals of human lactation and breastfeeding. CEUs available.

Eagle Video Productions
2201 Woodnell Dr
Raleigh, NC 27603-5240
919-779-7891
www.eaglevideo.com

The Benefits of Breastfeeding
English or Spanish. 14 or 21 minutes
DVD or VHS $59.00
Features Dr. Ruth Lawrence.

Breastfeeding and Returning to Work
English or Spanish. 12 minutes $59.00
DVD or VHS
Features Dr. Ruth Lawrence & Dr. Susan Landers. Handout included.

The Breastfeeding Center, Boston Medical Center
850 Harrison Ave, ACC-5
Boston, MA 02118
617-414-MILK (6455)

You Can Make the Difference
English. 8 minutes $30.00
Discusses kangaroo care in NICU settings.

In Your Hands: The Best Start for Your Breastfed Baby
English. 10 minutes $30.00

• • • *Newsletter for Parents*

New Beginnings
Bimonthly publication. $20.00/year
Spanish version: Nuevo Comienzo
quarterly publication - $20.00/year

La Leche League, International
1400 N Meacham Rd
Schaumburg, IL 60173-4840
847 519-9585 (orders)

• • • • • • • • • • Child Care Providers' Literature

Breastfed Babies Welcome Here
A folder that includes full-color poster and booklets:
11"x14" poster
A Mother's Guide
Guide for Child Care Providers

Free from:
United States Department of Agriculture
Food & Nutrition Service, WIC Program
Alexandria, VA 22302
3101 Park Center, Room 540
703 305-2746

• • •Non-English Educational Materials for Parents

La Leche League International
1400 N Meacham Rd
Schaumburg, IL 60173-4840
847 519-9585
www.lalecheleague.org

Childbirth Graphics
WRS Group, Ltd
PO Box 21207
Waco, TX 76702-1207
800 299-3366 x287
www.childbirthgraphics.com

Geddes Productions
PO Box 41761
Los Angeles, CA 90041
323-344-8045
www.geddesproduction.com

Health Education Associates
327 Quaker Meeting House Rd.
East Sandwich, MA 02537
508 888-8044

Health Education Services
PO Box 7126
Albany, NY 12224
518 439-7286
www.hes.org

Ameda
2000 Hollister Dr.
Libertyville, IL 60048
877 99-AMEDA
www.ameda.com

Noodle Soup
4614 Prospect Ave., #328
Cleveland, OH 44103
800 795-9295
www.noodlesoup.com

Massachusetts Department of Public Health
WIC Program 250 Washington St, 6th Floor
Boston, MA 02108
617 624-6100

Texas Department of Health
Breastfeeding Promotion Section
1100 West 49th St, Austin, TX 78756
512 341-4444
www.tdh.state.tx.us/lactate

• • • • • • • • • • • • • • •Sources for Breastfeeding Posters

Ameda
2000 Hollister Dr
Libertyville, IL 60048-3781
877-99-AMEDA

Bright Future Lactation Resource Center
6540 Cedarview Ct
Dayton, OH 45459-1214
1-888-235-7202
www.bflrc.com

Childbirth Graphics
WRS Group, Ltd
PO Box 21207
Waco, TX 76702
800 299-3366
www.childbirthgraphics.com

INFACT Canada
6 Trinity Square
Toronto, Ontario
Canada M5G 1B1
416 595-9819
http://infactcanada.ca

- **Don't Think of it as a Woman's Right to Breastfeed—Think of it as a Baby's Right to Eat**
- **Breastfeeding in Public is not a Crime (#2,#3,#4)**

La Leche League International
1400 N Meacham Rd
Schaumburg, IL 60173-4840
847 519-9585

Lamaze International
Bookstore and Media Center
2025 M Street, Suite 800
Washington, DC 20036-3309
877-952-6293
www.lamaze.org
Spiegelman poster from cover of New Yorker Magazine (construction worker breastfeeding her baby) 18x24

Medela, Inc.
1101 Corporate Drive
McHenry, IL 60050
800 435-8316
www.medela.com

Missouri WIC Program
Breastfeeding Coordinator
Department of Health
930 Wildwood
PO Box 570
Jefferson City, MO 65102-0570
573 751-6204

Noodle Soup of Weingart Design
4614 Prospect Ave #328
Cleveland, OH 44103-4314
800 795-9295

Texas Department of Health
Breastfeeding Promotion Section
1100 West 49th St
Austin, TX 78756
512-341-4444
www.dbs.dshs.state.tx.us

US Department of Agriculture
Food and Nutrition Service
3101 Park Center Dr, Rm 540
Alexandria, VA 22302
703 305-2746
Breastfed Babies Welcome Here 11x14, free

A donor human milk bank is a service established for the purpose of collecting, screening, processing, storing, and distributing donated human milk to meet the specific medical needs of individuals for whom human milk is prescribed by physicians. There are eight milk banks in the United States recognized by the Human Milk Banking Association of North America.

Donor milk has a broad range of therapeutic uses:

- *Allergies and formula intolerance* Some babies are allergic or intolerant of infant formulas. To avoid the side effects of highly processed and specialty formulas, many physicians recommend the use of donor milk for gut repair and resolution of allergic symptoms
- *Prematurity* In the absence of the infant's own mother's milk, donor milk conveys all the benefits of human milk, such as easy digestibility, immune factors, protection against necrotising enterocolitis, and the fatty acid profile most needed by preterm infants
- *Failure to thrive* Infants unable to grow on infant formula or whose mothers are unable to produce sufficient amounts of milk thrive on donated milk
- *Immunological deficiencies* Babies with congenital or acquired immune system deficiencies enjoy the benefits of secretory IgA and a host of other immune factors
- *Post-operative nutrition* Donor milk provides easy digestibility and growth factors for tissue repair
- *Therapy in infectious diseases and inborn errors of metabolism* Donor milk provides unique nutritional and immunological benefits for these special situations

Donor human milk is a safe and effective therapy. All donors must be healthy lactating women with a healthy breastfed baby and an excess of milk. All donors are screened for health behaviors and undergo a blood test for communicable diseases. As part of the screening process, the infant's pediatrician is contacted regarding the suitability of the mother as a donor. Donors are taught how to express their milk using sanitary collection methods. Donated milk is heat treated to destroy any bacteria or viruses. Frozen, heat treated milk is dispensed upon a physician's prescription. All milk is donated, not purchased. The Human Milk Banking Association of North America coordinates milk banking activities and publishes guidance for milk storage. Visit www.hmbana.org.

Milk Banks

Mothers' Milk Bank of New England
Anticipated opening in 2008
For more information, contact Naomi Bar-Yam, PhD at 617-964-6676 or mmbne@yahoo.com

Mothers' Milk Bank
Wake Medical Center
3000 New Bern Ave
Raleigh, NC 27610
919 350-8599

Mothers' Milk Bank
Presbyterian/St. Luke's Medical Center
1719 East 19th Ave
Denver, CO 80218
303 869-1888

Mothers' Milk Bank
Valley Medical Center
751 S. Bascom Ave
San Jose, CA 95128
408 998-4550

Mothers' Milk Bank at Austin
900 E 30th St, Suite 214
Austin, TX 78705
512 494-0800
Toll free: 877-813-6455

Mothers' Milk Bank of North Texas
1300 W. Lancaster Suite 108
Ft. Worth, TX 76102
Toll Free 866 810-0071

Mothers' Milk Bank
Christiana Hospital
4755 Ogletown-Stanton Rd.
Newark, DE 19718
302 733-2340

Indiana Mothers' Milk Bank, Inc.
Methodist Medical Plaza II
6820 Parkdale Place, Suite 109
Indianapolis, IN
317 329-7146

Mothers' Milk Bank of Ohio
Grant Medical Center
Victorian Village Health Center
1087 Dennison Ave.
Columbus, OH 43201
614 544-5906

• • • • • • Breast Pumps and Breastfeeding Equipment

Breast pumps are used to help mothers express their milk in a variety of situations:

- Occasional bottles
- Employment
- Prematurity
- Temporary inability to breastfeed (Down Syndrome, cleft lip/palate, neurological involvement)
- Illness of the infant or mother
- Maintain or increase the milk supply

The choice of a pump depends on its use and should be efficient, comfortable, accessible, affordable, easy to clean, and easy to use. The two issues most frequently mentioned by mothers when they are choosing or using a pump are the amount of milk that can be pumped and the time it takes to pump it. Pump selection depends on its purpose. There are manual pumps, battery operated pumps, and electric pumps.

- *Manual pumps* are frequently used for occasional milk expression. Some mothers find that hand expression works as well or better for them
- *Battery operated pumps* generate vacuum with a small battery operated motor and are also appropriate for occasional pumping or for a mother with an abundant milk supply and rapid milk ejection reflex
- *Electric pumps* come in different sizes and generally have automatic cycling. These can be rented by mothers who are employed full-time, who are pumping for preterm infants, or in special situations where the milk supply is being induced or augmented because the baby has not been established at breast. The electric pumps have double collection kits that allow both breasts to be expressed simultaneously.

Many insurance carriers reimburse for electric breast pump rental when a baby is hospitalized. A prescription for breast milk from the baby's physician may be necessary to secure the rental and extend it for use after the baby is discharged.

Pump rental stations are found throughout Massachusetts and are indicated next to the names of the lactation consultant or breastfeeding counselor. Pharmacies and medical supply companies also sell and rent breast pumps but generally provide no instruction or follow-up for mothers. Toy stores and baby shops may also sell breast pumps, however not all of these pumps are good choices new mothers. There is, in general, no BEST breast pump. Women's bodies and their individual needs vary greatly. No pump is as efficient as a vigorously nursing baby.

The companies listed below have a variety of manual, battery, and electric pumps that may be purchased or rented. All have literature and other breastfeeding supplies for hospitals and parents.

Ameda-Egnell/Hollister Inc.
2000 Hollister Dr
Libertyville, IL 60048-3781
847 680-1000
877 99 AMEDA
Fax 847 918-3994
www.ameda.com

Medela, Inc.
1101 Corporate Drive
McHenry, IL 60051-0660
815 363-1166
800 435-8316
Fax 815 363-1246
www.medela.com

For more detailed information on breast pumps and pumping see:

Frantz K: *Breastfeeding product guide.* Sunland, CA: Geddes Productions, 1999.

Hamosh M, Ellis LA, Pollock DR, et al: Breastfeeding and the working mother: effect of time and temperature of short-term storage on proteolysis, lipolysis, and bacterial growth in milk. *Pediatrics* 1996; 97:492-498

Human Milk Banking Assoc of North America. *Best Practice for Pumping, Storing and Handling of Mother's Own Milk in Hospital and at Home.* 2005.

Walker M, Auerbach KG: Ch. 12 Breast pumps and other technologies. In Riordan J, Auerbach KG: *Breastfeeding and human lactation.* 3rd ed Boston: Jones & Bartlett. pp. 323 - 365, 2005.

Pumping & Storing Your Milk

Read the instructions on the use and cleaning of the pump before expressing milk with any product

Wash your hands before you pump milk

Frequency

- For occasional pumping, pump during, after, or between feedings, whichever gives the best results. Many mothers tend to express more milk in the morning.
- For employed mothers, pumping should occur on a regular basis for at least the number of nursings that are missed
- To increase a milk supply, pump after each nursing
- For premature or ill babies, pump 8-10 times each 24 hours using a large rented electric pump
- For engorgement, pump a little before you nurse to soften the breast and pump after you nurse if you still feel full or uncomfortable

How long?

- If pumping one breast at a time: 10-15 minutes with an electric pump and 10-20 minutes with a manual or battery operated pump
- If pumping both breasts at the same time with an electric pump: 10 minutes or until the flow decreases

Techniques

- Hand express a little milk to start it flowing
- Use the lowest amount of suction on the pump as possible
- Massage your breast in sections while you pump to increase the amount of milk you get and decrease pumping time
- If pumping one breast at a time, switch sides several times while you massage the breast

Cleaning the pump

- After pumping milk, rinse with cold water all parts that come in contact with the milk. Wash the parts in hot soapy water, rinse well, and air dry. Some pump parts can be put on the top rack of a dishwasher. Check the directions that came with the pump
- Some mothers boil pump parts, especially if they are expressing milk for a premature or ill baby. To avoid melting the pump in the saucepan, either set a timer or add a couple of marbles to the water. If you hear them rattling around, the water level is getting low.

Storing your milk (full term babies)

- Room temperature (77F) – 4 hours
- Cooler with blue ice (59F) – 24 hours. Employed mothers frequently use small coolers with frozen ice packs to keep milk chilled at work.
- Refrigerator (35F) – 3-5 days
- Freezer (0F) - several weeks to months. Milk should be kept in the back of a frost-free freezer, on a shelf.
- Label each container with the date it was pumped and use the oldest first.
- You can use glass or plastic bottles or milk storage bags to store your milk. Do not fill bags or bottles to the top as milk expands when it is frozen.
- Storage amounts
  - 2-3oz for a baby up to 2 weeks
  - 3-5oz for a baby up to 2 months
  - 4-6oz for a baby 2-4 months old
  - 5-8oz for a baby 4-6 months old

Using pumped milk

- Do not thaw milk in a microwave oven
- Place in the refrigerator overnight or run under warm water to thaw
- Use thawed milk within 24 hours
- Do not refreeze thawed milk

Insurance coverage for Electric Breast Pumps for MA residents (March 2008)

Insurance	Type of Pump	Dr referral	Contact Info	Med Diagnosis	Notes
Healthy Start 1-888-488-9161	Ameda "Purely Yours"	Rx needed from OBGYN but no medical diagnosis required	Supplier: Cambridge Medical Supply (617- 876-3810) 218 O'Brien Hwy, Cambridge, MA 02141 Fax (breast pump contact) – 617-491-1511 Bosom Buddies (413-695-4128)	Not needed	- Need mom's ID#; PCP name, baby DOB, gestational age at birth, address, phone. Pump can be mailed in or picked up. - Mom can purchase pump (up to $300) and be reimbursed by sending receipt to Healthy Start Program, P.O. Box 1977, Andover, MA 01810 Healthy Start Billing Dept – 1-888-488-9161 - Request must be approved within 6 weeks of birth - Coverage is under "Durable Medical Equipment"; if $300 benefit was used for other medical supplies, the amount covered is the amount left of the $300.
Network Health 1-888-257-1985	Medela "Pump'N'Style" for members with particular medical diagnoses; otherwise, Medela Single Deluxe electric pump.	Not needed for single pumps; email or script required for double pump	Network -Health Customer Service (1-888-257-1985) for members to receive single pump Fax and phone for double pump orders go to Linda Going, RN, Clinical Leader for Health & Wellness Fax: 781-393-7433 Phone: 781-393-3670	For double pump only: - prolonged separation due to NICU admission or hospitalization - cleft palate - Down's Syndrome, neurological deficit or Prematurity - multiple briths - s/p breast reduction	Include on double pump scripts: - mom's name, DOB and Social Security number - address and phone number where pump should be sent - baby's DOB, weight and age - diagnosis/reason for request Note that pumps require a signature for delivery
Neighborhood Health Plan (NHP) 1-800-462-5449	Cambridge Med Supply: "Purely Yours" or "Pump'N'Style" Compass Health Care: "Pump'N'Style"	LC or Pediatrician fax to Cambridge Med Supply or Compass Health Care or Contact NHP for more vendors	Durable Medical Equipment dept (617-772-5530) Supplier: Cambridge Med Supply (617-876-3820) fax: (617-864-8412) Or Compass Health Care (617-566-6772) fax: (617-566-5088) or Western MA: Shoppers Medical Equipment (413-781-8725)	Not needed – prescription needed "Breast pump, use as directed"; must be requested within 3 months of birth	- Up to $300 is covered toward purchase of pump Need mom and baby's names and DOB, address, phone, SS#, NPH #. - For Cambridge Med Supply: Mom must be on NHP - Pump will be delivered to the home after baby is born or can be picked up.
Harvard Pilgrim 1-800-708-4414 1-888-888-4742	Cambridge Med Supply: "Purely Yours" or "Pump'N'Style" Compass Health Care: "Pump'N'Style" Hospital-grade rental for premature or hospitalized babies	Need medical diagnosis from pediatrician or OBGYN confirming pump necessity	Customer Service Main Line (1-888-888-4742) Supplier: Cambridge Medical Supply (617-876-3820) Compass Health Care (617-566-6772)	Needed; coverage varies based on medical diagnosis	"back to work" is not considered medical necessity
Blue Cross/Blue Shield 1-800-422-3545	Typically, Hospital-Grade (depending on BC/BS plan) or personal electric pump	Yes, from Pediatrician or OBGYN	Blue Cross/Blue Shield of MA – 1-800-486-1136 Supplier: Cambridge Medical Supply (617-876-3820) Compass Health Care (617-566-6772)	Needed; coverage varies based on medical diagnosis	"back to work" is not considered medical necessity

Insurance	Type of Pump	Dr referral	Contact Info	Med Diagnosis	Notes
BMC Healthnet 1-888-566-0010 (English) 1-888-566-0012 (Spanish)	Medela Pump'N'Style	No	Member Services Call Center 1-888-566-0010 (Eng and other languages) 1-888-566-0012 (Spanish) Breastfeeding Info Line (617-414-MILK) Supplier: Bosom Buddies (413-695-4128) Call Sherry Fader, RN for approval first (617-748-6472)	Yes – back to work, school, NICU or other separation, latch problem, special needs infant	- mom can call; she must be a member prior to infant's birth - can receive manual pump without medical diagnosis - Bosom Buddies will mail to mom or may pick up from BMC HealthNet Plan – Ambulatory Care Center (ACC) office -Call for approval first: 617-748-6472 - BMC Healthnet coverage under Commonwealth Care does require a prescription from a physician with medical necessity due to separation of mother and baby.
Tufts 1-800-462-0224	Hospital grade electric pump rental for one month	Yes	Tufts Customer Service(800-462-0224) Supplier: Cambridge Medical Supply (617- 876-3810) Denkmark's (800-669-1970) Contact Tufts for more vendors	Yes – premature, hospitalized newborn, newborn with congenital anomalies, separation due to hospitalization	- covered under DME (durable medical equipment) - co-payment may be required - a second month of pump rental may be covered in the event of continued separation due to hospitalization
Fallon 1-800-868-5200	Rental only	Yes, from Pediatrician or OBGYN confirming medical necessity	Customer Service (800-868-5200) Lakeview Medical (508-407-7700)	Yes – based on baby's diagnosis only - prematurity, separation due to hospitalization, poor weight gain	- prior authorization is required - coverage on a case by case basis

- MASS HEALTH
  People with *MassHealth* (the MA Medicaid program) insurance generally have an HMO insurance "underneath" *MassHealth*, which covers most benefits, including breast pumps. Certain immigrants may be restricted to *Healthy Start*, but usually participants are free to choose between *Neighborhood Health Plan, Network Health, Boston Healthnet*, and *Harvard Pilgrim*. Switching is easy and takes effect in 24 hours, but they should be aware that access to providers may differ. ***When the mom has limited coverage***, the baby's insurance rather than mom's can determine the benefits related to breastfeeding. In theory, MA has universal health coverage for children, although currently there may be waiting lists.

- CAMBRIDGE MEDICAL SUPPLY
  Processes many of the breast pump requests and has experience dealing with insurances. They require a fax from the provider for all pump requests.
  218 Monsignor Obrien Hwy, Cambridge, MA 02141
  Phone (617)876-3810
  Fax (617)864-8412 (general); (617)491-1511 (direct to Nancy, breast pump contact).

- If a client has an insurance not listed here, she should call the customer service phone number listed on her insurance card to check her benefits – preferably ahead of time, before the baby comes! Breast pumps are usually considered a type of Durable medical Equipment (DME), so if the customer service representative isn't familiar with the policy on pumps specifically, the client should ask how DME is covered. She should also ask if medical referral is needed (and if so, from whom), or if she should contact a medical supply store (see above).

Drug Information Sources

Drugs and Lactation Database (LactMed)
U.S. National Library of Medicine
http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT

University of Rochester
School of Medicine & Dentistry
Breastfeeding & Human Lactation Studies Center
Rochester, New York
585-275-0088

Pharmasoft Publishing
http://www.iBreastfeeding.com
Thomas Hale will answer questions posted by health care providers only to the web site

Publications

American Academy of Pediatrics Committee on Drugs. Transfer of drugs and other chemicals into human milk. Pediatrics 2001; Sep;108(3):776-89

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AMERICAN ACADEMY OF PEDIATRICS

Committee on Drugs

The Transfer of Drugs and Other Chemicals Into Human Milk

ABSTRACT. The American Academy of Pediatrics places emphasis on increasing breastfeeding in the United States. A common reason for the cessation of breastfeeding is the use of medication by the nursing mother and advice by her physician to stop nursing. Such advice may not be warranted. This statement is intended to supply the pediatrician, obstetrician, and family physician with data, if known, concerning the excretion of drugs into human milk. Most drugs likely to be prescribed to the nursing mother should have no effect on milk supply or on infant well-being. This information is important not only to protect nursing infants from untoward effects of maternal medication but also to allow effective pharmacologic treatment of breastfeeding mothers. Nicotine, psychotropic drugs, and silicone implants are 3 important topics reviewed in this statement.

INTRODUCTION

A statement on the transfer of drugs and chemicals into human milk was first published in 1983,[1] with revisions in 1989[2] and 1994.[3] Information continues to become available. The current statement is intended to revise the lists of agents transferred into human milk and describe their possible effects on the infant or on lactation, if known (Tables 1–7). If a pharmacologic or chemical agent does not appear in the tables, it does not mean that it is not transferred into human milk or that it does not have an effect on the infant; it only indicates that there were no reports found in the literature. These tables should assist the physician in counseling a nursing mother regarding breastfeeding when the mother has a condition for which a drug is medically indicated.

BREASTFEEDING AND SMOKING

In the previous edition of this statement, the Committee on Drugs placed nicotine (smoking) in Table 2, "Drugs of Abuse-Contraindicated During Breastfeeding." The reasons for placing nicotine and, thus, smoking in Table 2 were documented decrease in milk production and weight gain in the infant of the smoking mother and exposure of the infant to environmental tobacco smoke as demonstrated by the presence of nicotine and its primary metabolite, cotinine, in human milk.[4–12] There is controversy regarding the effects of nicotine on infant size at 1 year of age.[13,14] There are hundreds of compounds in tobacco smoke; however, nicotine and its metabolite acotinine are most often used as markers of tobacco exposure. Nicotine is not necessarily the only component that might cause an increase in respiratory illnesses (including otitis media) in the nursing infant attributable to both transmammary secretion of compounds and environmental exposure. Nicotine is present in milk in concentrations between 1.5 and 3.0 times the simultaneous maternal plasma concentration,[15] and elimination half-life is similar—60 to 90 minutes in milk and plasma.[7] There is no evidence to document whether this amount of nicotine presents a health risk to the nursing infant.

The Committee on Drugs wishes to support the emphasis of the American Academy of Pediatrics on increasing breastfeeding in the United States. Pregnancy and lactation are ideal occasions for physicians to urge cessation of smoking. It is recognized that there are women who are unable to stop smoking cigarettes. One study reported that, among women who continue to smoke throughout breastfeeding, the incidence of acute respiratory illness is decreased among their infants, compared with infants of smoking mothers who are bottle fed.[16] It may be that breastfeeding and smoking is less detrimental to the child than bottle feeding and smoking. The Committee on Drugs awaits more data on this issue. The Committee on Drugs therefore has not placed nicotine (and thus smoking) in any of the Tables but hopes that the interest in breastfeeding by a smoking woman will serve as a point of discussion about smoking cessation between the pediatrician and the prospective lactating woman or nursing mother. Alternate (oral, transcutaneous) sources of nicotine to assist with smoking cessation, however, have not been studied sufficiently for the Committee on Drugs to make a recommendation for or against them in breastfeeding women.

PSYCHOTROPIC DRUGS

Anti-anxiety drugs, antidepressants, and neuroleptic drugs have been placed in Table 4, "Drugs for Which the Effect on Nursing Infants is Unknown but May Be of Concern." These drugs appear in low concentrations (usually with a milk-to-plasma ratio of 0.5–1.0) in milk after maternal ingestion. Because of the long half-life of these compounds and some of their metabolites, nursing infants may have measurable amounts in their plasma and tissues, such as the brain. This is particularly important in infants during the first few months of life, with immature hepatic and renal function. Nursing mothers should be informed that if they take one of these drugs, the infant will be exposed to it. Because these drugs affect neurotransmitter function in the developing central

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

nervous system, it may not be possible to predict long-term neurodevelopmental effects.

SILICONE BREAST IMPLANTS AND BREASTFEEDING

Approximately 800 000 to 1 million women in the United States have received breast implants containing silicone (elemental silicon with chemical bonds to oxygen) in the implant envelope or in the envelope and the interior gel. Concern has been raised about the possible effects to the nursing infant if mothers with implants breastfeed. This concern was initially raised in reports that described esophageal dysfunction in 11 children whose mothers had implants.[17,18] This finding has not been confirmed by other reports. Silicone chemistry is extremely complex; the polymer involved in the covering and the interior of the breast implant consists of a polymer of alternating silicon and oxygen atoms with methyl groups attached to the oxygen groups (methyl polydimethylsiloxane).[19] The length of the polymer determines whether it is a solid, gel, or liquid. There are only a few instances of the polymer being assayed in the milk of women with implants; the concentrations are not elevated over control samples.[20] There is no evidence at the present time that this polymer is directly toxic to human tissues; however, concern also exists that toxicity may be mediated through an immunologic mechanism. This has yet to be confirmed in humans. Except for the study cited above, there have been no other reports of clinical problems in infants of mothers with silicone breast implants.[21] It is unlikely that elemental silicon causes difficulty, because silicon is present in higher concentrations in cow milk and formula than in milk of humans with implants.[22] The anticolic compound simethicone is a silicone and has a structure very similar to the methyl polydimethylsiloxane in breast implants. Simethicone has been used for decades in this country and Europe without any evidence of toxicity to infants. The Committee on Drugs does not feel that the evidence currently justifies classifying silicone implants as a contraindication to breastfeeding.

DRUG THERAPY OF THE LACTATING WOMAN

The following should be considered before prescribing drugs to lactating women:

1. Is drug therapy really necessary? If drugs are required, consultation between the pediatrician and the mother's physician can be most useful in determining what options to choose.
2. The safest drug should be chosen, for example, acetaminophen rather than aspirin for analgesia.
3. If there is a possibility that a drug may present a risk to the infant, consideration should be given to measurement of blood concentrations in the nursing infant.
4. Drug exposure to the nursing infant may be minimized by having the mother take the medication just after she has breastfed the infant or just before the infant is due to have a lengthy sleep period.

Data have been obtained from a search of the medical literature. Because methodologies used to quantitate drugs in milk continue to improve, this information will require frequent updating. Drugs cited in Tables 1 through 7 are listed in alphabetical order by generic name; brand names are available from the current *Physicians' Desk Reference*,[23] *USP DI 2001: Drug Information for the Health Care Professional, Volume I*,[24] *and USP Dictionary of USAN and International Drug Names*.[25] The reference list is not inclusive of all articles published on the topic.

Physicians who encounter adverse effects in infants who have been receiving drug-contaminated human milk are urged to document these effects in a communication to the Food and Drug Administration (http://www.fda.gov/medwatch/index.html) and to the Committee on Drugs. This communication should include the generic and brand names of the drug, the maternal dose and mode of administration, the concentration of the drug in milk and maternal and infant blood in relation to the time of ingestion, the method used for laboratory identification, the age of the infant, and the adverse effects. Such reports may substantially increase the pediatric community's fund of knowledge regarding drug transfer into human milk and the potential or actual risk to the infant.

TABLE 1. Cytotoxic Drugs That May Interfere With Cellular Metabolism of the Nursing Infant

Drug	Reason for Concern, Reported Sign or Symptom in Infant, or Effect on Lactation	Reference No.
Cyclophosphamide	Possible immune suppression; unknown effect on growth or association with carcinogenesis; neutropenia	26, 27
Cyclosporine	Possible immune suppression; unknown effect on growth or association with carcinogenesis	28, 29
Doxorubicin*	Possible immune suppression; unknown effect on growth or association with carcinogenesis	30
Methotrexate	Possible immune suppression; unknown effect on growth or association with carcinogenesis; neutropenia	31

* Drug is concentrated in human milk.

TABLE 2. Drugs of Abuse for Which Adverse Effects on the Infant During Breastfeeding Have Been Reported*

Drug	Reported Effect or Reasons for Concern	Reference No.
Amphetamine†	Irritability, poor sleeping pattern	32
Cocaine	Cocaine intoxication: irritability, vomiting, diarrhea, tremulousness, seizures	33
Heroin	Tremors, restlessness, vomiting, poor feeding	34
Marijuana	Only 1 report in literature; no effect mentioned; very long half-life for some components	35
Phencyclidine	Potent hallucinogen	36

* The Committee on Drugs strongly believes that nursing mothers should not ingest drugs of abuse, because they are hazardous to the nursing infant and to the health of the mother.
† Drug is concentrated in human milk.

TABLE 3. Radioactive Compounds That Require Temporary Cessation of Breastfeeding*

Compound	Recommended Time for Cessation of Breastfeeding	Reference No.
Copper 64 (^{64}Cu)	Radioactivity in milk present at 50 h	37
Gallium 67 (^{67}Ga)	Radioactivity in milk present for 2 wk	38
Indium 111 (^{111}In)	Very small amount present at 20 h	39
Iodine 123 (^{123}I)	Radioactivity in milk present up to 36 h	40, 41
Iodine 125 (^{125}I)	Radioactivity in milk present for 12 d	42
Iodine 131 (^{131}I)	Radioactivity in milk present 2–14 d, depending on study	43–46
Iodine^{131}	If used for treatment of thyroid cancer, high radioactivity may prolong exposure to infant	47, 48
Radioactive sodium	Radioactivity in milk present 96 h	49
Technetium 99m (^{99m}Tc), ^{99m}Tc macroaggregates, ^{99m}Tc O_4	Radioactivity in milk present 15 h to 3 d	41, 50–55

* Consult nuclear medicine physician before performing diagnostic study so that radionuclide that has the shortest excretion time in breast milk can be used. Before study, the mother should pump her breast and store enough milk in the freezer for feeding the infant; after study, the mother should pump her breast to maintain milk production but discard all milk pumped for the required time that radioactivity is present in milk. Milk samples can be screened by radiology departments for radioactivity before resumption of nursing.

TABLE 4. Drugs for Which the Effect on Nursing Infants Is Unknown but May Be of Concern*

Drug	Reported or Possible Effect	Reference No.
Anti-anxiety		
Alprazolam	None	57
Diazepam	None	58–62
Lorazepam	None	63
Midazolam	—	64
Perphenazine	None	65
Prazepam†	None	66
Quazepam	None	67
Temazepam	—	68
Antidepressants		
Amitriptyline	None	69, 70
Amoxapine	None	71
Bupropion	None	72
Clomipramine	None	73
Desipramine	None	74, 75
Dothiepin	None	76, 77
Doxepin	None	78
Fluoxetine	Colic, irritability, feeding and sleep disorders, slow weight gain	79–87
Fluvoxamine	—	88
Imipramine	None	74
Nortriptyline	None	89, 90
Paroxetine	None	91
Sertraline†	None	92, 93
Trazodone	None	94
Antipsychotic		
Chlorpromazine	Galactorrhea in mother; drowsiness and lethargy in infant; decline in developmental scores	95–98
Chlorprothixene	None	99
Clozapine†	None	100
Haloperidol	Decline in developmental scores	101–104
Mesoridazine	None	105
Trifluoperazine	None	104
OTHERS		
Amiodarone	Possible hypothyroidism	106
Chloramphenicol	Possible idiosyncratic bone marrow suppression	107, 108
Clofazimine	Potential for transfer of high percentage of maternal dose; possible increase in skin pigmentation	109
Lamotrigine	Potential therapeutic serum concentrations in infant	110
Metoclopramide†	None described; dopaminergic blocking agent	111, 112
Metronidazole	In vitro mutagen; may discontinue breastfeeding for 12–24 h to allow excretion of dose when single-dose therapy given to mother	113, 114
Tinidazole	See metronidazole	115

* Psychotropic drugs, the compounds listed under anti-anxiety, antidepressant, and antipsychotic categories, are of special concern when given to nursing mothers for long periods. Although there are very few case reports of adverse effects in breastfeeding infants, these drugs do appear in human milk and, thus, could conceivably alter short-term and long-term central nervous system function.[56] See discussion in text of psychotropic drugs.
† Drug is concentrated in human milk relative to simultaneous maternal plasma concentrations.

TABLE 5. Drugs That Have Been Associated With Significant Effects on Some Nursing Infants and Should Be Given to Nursing Mothers With Caution*

Drug	Reported Effect	Reference No.
Acebutolol	Hypotension; bradycardia; tachypnea	116
5-Aminosalicylic acid	Diarrhea (1 case)	117–119
Atenolol	Cyanosis; bradycardia	120–124
Bromocriptine	Suppresses lactation; may be hazardous to the mother	125, 126
Aspirin (salicylates)	Metabolic acidosis (1 case)	127–129
Clemastine	Drowsiness, irritability, refusal to feed, high-pitched cry, neck stiffness (1 case)	130
Ergotamine	Vomiting, diarrhea, convulsions (doses used in migraine medications)	131
Lithium	One-third to one-half therapeutic blood concentration in infants	132–134
Phenindione	Anticoagulant: increased prothrombin and partial thromboplastin time in 1 infant; not used in United States	135
Phenobarbital	Sedation; infantile spasms after weaning from milk containing phenobarbital, methemoglobinemia (1 case)	136–140
Primidone	Sedation, feeding problems	136, 137
Sulfasalazine (salicylazosulfapyridine)	Bloody diarrhea (1 case)	141

* Blood concentration in the infant may be of clinical importance.

TABLE 6. Maternal Medication Usually Compatible With Breastfeeding*

Drug	Reported Sign or Symptom in Infant or Effect on Lactation	Reference No.
Acetaminophen	None	142–144
Acetazolamide	None	145
Acitretin	—	146
Acyclovir†	None	147, 148
Alcohol (ethanol)	With large amounts, drowsiness, diaphoresis, deep sleep, weakness, decrease in linear growth, abnormal weight gain; maternal ingestion of 1 g/kg daily decreases milk ejection reflex	4, 149–152
Allopurinol	—	153
Amoxicillin	None	154
Antimony	—	155
Atropine	None	156
Azapropazone (apazone)	—	157
Aztreonam	None	158
B_1 (thiamin)	None	159
B_6 (pyridoxine)	None	160–162
B_{12}	None	163
Baclofen	None	164
Barbiturate	See Table 5	
Bendroflumethiazide	Suppresses lactation	165
Bishydroxycoumarin (dicumarol)	None	166
Bromide	Rash, weakness, absence of cry with maternal intake of 5.4 g/d	167
Butorphanol	None	168
Caffeine	Irritability, poor sleeping pattern, excreted slowly; no effect with moderate intake of caffeinated beverages (2–3 cups per day)	169–174
Captopril	None	175
Carbamazepine	None	176, 177
Carbetocin	None	178
Carbimazole	Goiter	83, 179, 180
Cascara	None	181
Cefadroxil	None	154
Cefazolin	None	182
Cefotaxime	None	183
Cefoxitin	None	183
Cefprozil	—	184
Ceftazidime	None	185
Ceftriaxone	None	186
Chloral hydrate	Sleepiness	187
Chloroform	None	188
Chloroquine	None	189–191
Chlorothiazide	None	192, 193
Chlorthalidone	Excreted slowly	194
Cimetidine†	None	195, 196
Ciprofloxacin	None	197, 198
Cisapride	None	199
Cisplatin	Not found in milk	30
Clindamycin	None	200
Clogestone	None	201
Codeine	None	144, 156, 202
Colchicine	—	203–205
Contraceptive pill with estrogen/progesterone	Rare breast enlargement; decrease in milk production and protein content (not confirmed in several studies)	206–213
Cycloserine	None	214
D (vitamin)	None; follow up infant's serum calcium level if mother receives pharmacologic doses	215–217
Danthron	Increased bowel activity	218
Dapsone	None; sulfonamide detected in infant's urine	191, 219
Dexbrompheniramine maleate with *d*-isoephedrine	Crying, poor sleeping patterns, irritability	220
Diatrizoate	None	221
Digoxin	None	222, 223
Diltiazem	None	224
Dipyrone	None	225
Disopyramide	None	226, 227
Domperidone	None	228
Dyphylline†	None	229
Enalapril	—	230
Erythromycin†	None	231
Estradiol	Withdrawal, vaginal bleeding	232
Ethambutol	None	214
Ethanol (cf. alcohol)	—	

TABLE 6. Continued

Drug	Reported Sign or Symptom in Infant or Effect on Lactation	Reference No.
Ethosuximide	None, drug appears in infant serum	176, 233
Fentanyl	—	234
Fexofenadine	None	235
Flecainide	—	236, 237
Fleroxacin	One 400-mg dose given to nursing mothers; infants not given breast milk for 48 h	238
Fluconazole	None	239
Flufenamic acid	None	240
Fluorescein	—	241
Folic acid	None	242
Gadopentetic (Gadolinium)	None	243
Gentamicin	None	244
Gold salts	None	245–249
Halothane	None	250
Hydralazine	None	251
Hydrochlorothiazide	—	192, 193
Hydroxychloroquine†	None	252, 253
Ibuprofen	None	254, 255
Indomethacin	Seizure (1 case)	256–258
Iodides	May affect thyroid activity; see iodine	259
Iodine	Goiter	259
Iodine (povidone-iodine, eg, in a vaginal douche)	Elevated iodine levels in breast milk, odor of iodine on infant's skin	259
Iohexol	None	97
Iopanoic acid	None	260
Isoniazid	None; acetyl (hepatotoxic) metabolite secreted but no hepatotoxicity reported in infants	214, 261
Interferon-α	—	262
Ivermectin	None	263, 264
K_1 (vitamin)	None	265, 266
Kanamycin	None	214
Ketoconazole	None	267
Ketorolac	—	268
Labetalol	None	269, 270
Levonorgestrel	—	271–274
Levothyroxine	None	275
Lidocaine	None	276
Loperamide	—	277
Loratadine	None	278
Magnesium sulfate	None	279
Medroxyprogesterone	None	201, 280
Mefenamic acid	None	281
Meperidine	None	61, 282
Methadone	None	283–287
Methimazole (active metabolite of carbimazole)	None	288, 289
Methohexital	None	61
Methyldopa	None	290
Methyprylon	Drowsiness	291
Metoprolol†	None	120
Metrizamide	None	292
Metrizoate	None	97
Mexiletine	None	293, 294
Minoxidil	None	295
Morphine	None; infant may have measurable blood concentration	282, 296–298
Moxalactam	None	299
Nadolol†	None	300
Nalidixic acid	Hemolysis in infant with glucose-6-phosphate dehydrogenase (G-6-PD) deficiency	301
Naproxen	—	302
Nefopam	None	303
Nifedipine	—	304
Nitrofurantoin	Hemolysis in infant with G-6-PD deficiency	305
Norethynodrel	None	306
Norsteroids	None	307
Noscapine	None	308
Ofloxacin	None	198
Oxprenolol	None	309, 310
Phenylbutazone	None	311
Phenytoin	Methemoglobinemia (1 case)	138, 176, 312
Piroxicam	None	313
Prednisolone	None	314, 315
Prednisone	None	316

TABLE 6. Continued

Drug	Reported Sign or Symptom in Infant or Effect on Lactation	Reference No.
Procainamide	None	317
Progesterone	None	318
Propoxyphene	None	319
Propranolol	None	320–322
Propylthiouracil	None	323
Pseudoephedrine†	None	324
Pyridostigmine	None	325
Pyrimethamine	None	326
Quinidine	None	191, 327
Quinine	None	296
Riboflavin	None	159
Rifampin	None	214
Scopolamine	—	156
Secobarbital	None	328
Senna	None	329
Sotalol	—	237, 330
Spironolactone	None	331
Streptomycin	None	214
Sulbactam	None	332
Sulfapyridine	Caution in infant with jaundice or G-6-PD deficiency and ill, stressed, or premature infant; appears in infant's milk	333, 334
Sulfisoxazole	Caution in infant with jaundice or G-6-PD deficiency and ill, stressed, or premature infant; appears in infant's milk	335
Sumatriptan	None	336
Suprofen	None	337
Terbutaline	None	338
Terfenadine	None	235
Tetracycline	None; negligible absorption by infant	339, 340
Theophylline	Irritability	169, 341
Thiopental	None	139, 342
Thiouracil	None mentioned; drug not used in United States	343
Ticarcillin	None	344
Timolol	None	310
Tolbutamide	Possible jaundice	345
Tolmetin	None	346
Trimethoprim/sulfamethoxazole	None	347, 348
Triprolidine	None	324
Valproic acid	None	176, 349, 350
Verapamil	None	351
Warfarin	None	352
Zolpidem	None	353

* Drugs listed have been reported in the literature as having the effects listed or no effect. The word "none" means that no observable change was seen in the nursing infant while the mother was ingesting the compound. Dashes indicate no mention of clinical effect on the infant. It is emphasized that many of the literature citations concern single case reports or small series of infants.
† Drug is concentrated in human milk.

TABLE 7. Food and Environmental Agents: Effects on Breastfeeding

Agent	Reported Sign or Symptom in Infant or Effect on Lactation	Reference No.
Aflatoxin	None	354–356
Aspartame	Caution if mother or infant has phenylketonuria	357
Bromide (photographic laboratory)	Potential absorption and bromide transfer into milk; see Table 6	358
Cadmium	None reported	359
Chlordane	None reported	360
Chocolate (theobromine)	Irritability or increased bowel activity if excess amounts (≥16 oz/d) consumed by mother	169, 361
DDT, benzene hexachlorides, dieldrin, aldrin, hepatachlorepoxide	None	362–370
Fava beans	Hemolysis in patient with G-6-PD deficiency	371
Fluorides	None	372, 373
Hexachlorobenzene	Skin rash, diarrhea, vomiting, dark urine, neurotoxicity, death	374, 375
Hexachlorophene	None; possible contamination of milk from nipple washing	376
Lead	Possible neurotoxicity	377–380
Mercury, methylmercury	May affect neurodevelopment	381–383
Methylmethacrylate	None	384
Monosodium glutamate	None	385
Polychlorinated biphenyls and polybrominated biphenyls	Lack of endurance, hypotonia, sullen, expressionless facies	386–390
Silicone	Esophageal dysmotility	17–22
Tetrachloroethylene cleaning fluid (perchloroethylene)	Obstructive jaundice, dark urine	391
Vegetarian diet	Signs of B_{12} deficiency	392

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110 Maryland Ave, NE
Washington, DC 20002
202 547-7946

Barriers and Solutions to the Global 10 Steps to Successful Breastfeeding

La Leche League, International
1400 N Meacham Rd
Schaumburg, IL 60173
847 519-9585
www.lalecheleague.org

- ***Center for Breastfeeding Information***
- ***Lactation Consultant Series***
- ***The Breastfeeding Answer Book***

Kay Hoover
613 Yale Ave
Morton, PA 19070

The Link Between Infant's Oral Thrush and Nipple/Breast Pain in Lactating Women

International Lactation Consultant Association
1500 Sunday Dr, Suite 102
Raleigh, NC 27607
919 787-5181
www.ilca.org

- ***Infant Feeding: The Physiologic Basis***
- ***Protecting, Promoting, and Supporting Breastfeeding***
- ***Summary of the Hazards of Infant Formula***
- ***A Fresh Look at the Risks of Artificial Infant Feeding***
- ***The International Code of Marketing of Breast Milk Substitutes: What it Means for Mothers and Babies Worldwide***
- ***Evidence-based Guidelines for Breastfeeding Management during the First Fourteen Days***

HRSA Information Center
1-888-ASK HRSA
www.ask.hrsa.gov

- ***The Business Case for Breastfeeding. Steps for Creating a Breastfeeding Friendly Worksite: Easy Steps to Supporting Breastfeeding Employees***
- ***Full-Sized BMI and Weight Gain Charts: Supplementary Materials for "Nutrition During Pregnancy and Lactation: An Implementation Guide"***
- ***Nutrition During Lactation-Full Report***
- ***Nutrition During Lactation-Summary, Conclusions, and Recommendations***
- ***Second Followup Report: The Surgeon General's Workshop on Breastfeeding and Human Lactation***

Human Milk Banking Association of North America;c/o Triangle Mothers' Milk Bank
WakeMed
300 New Bern Ave
Raleigh, NC 27610
919 350-8599

Recommendations for Collection, Storage and Handling of a Mother's Milk for her own Infant in the Hospital Setting

Breastfeeding: A Guide for the Medical Profession
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Maternal and Infant Assessment for Breastfeeding and Human Lactation: A Guide for the Practitioner
Cadwell, K, Turner-Maffei, C, O'Connor, B Cadwell Blair, A, Arnold, L, Blair, E. 2006 2nd edition. Jones and Bartlett.

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Massachusetts Breastfeeding Coalition
www.massbfc.org
Guidelines for early breastfeeding support, PDA breastfeeding management tools, training course

Approach to Early Breastfeeding

Download this tool to your PDA!
www.massbfc.org

A Guideline for Healthy Term Newborns, 48 hours to two weeks

Signs of Success

For Baby:

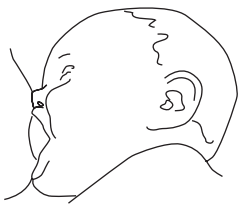
- sustained rhythmic suck-swallow pattern with occasional pauses
- audible swallowing
- correct latch and position: wide open mouth, flared-out lips, "nose-to-breast, chest-to-chest"
- at least 3 stools per day
- 8-12 feeds per 24°
- 3 wet diapers per 24° by day 3

For Mother:

- breast softens during feed
- mother feels strong tugging which is not persistently painful

- Give verbal & written guidance* to encourage sleeping near baby, and to avoid bottles & pacifiers.
- Assess parents' awareness of hunger cues & swallowing.
- Give contact info for community support services.
- Follow up 2 days after discharge & again at 2 weeks.

Proper latch on



Warning Signs

Possible inadequate milk transfer

NOTE: A single sign, by itself, does not necessarily indicate a breastfeeding problem.

For Baby:

- ▲ less than 8 feeds per 24°
- ▲ "grazes," or feeds >12 times per 24°
- ▲ no audible swallowing (or can't tell)
- ▲ feeds last >45 minutes, at least twice per day
- ▲ continued rooting after feeding
- ▲ infant irritable, restless or sleepy & refusing to feed
- ▲ less than 3 stools per day
- ▲ bilirubin>17 at 72° associated w/ poor feeding
- ▲ no weight gain by day 3 to 5
- ▲ not back to birth weight by day 14

For Mother:

- ▲ breast still heavy or full after a feed (or can't tell)
- ▲ increased or persistently sore nipples
- ▲ milk not in by day 3

- ▲ Consultation w/ certified Lactation Consultant within 24-48°.
- ▲ Evaluate latch and position.
- ▲ Check for tongue tie, inverted nipples, h/o breast surgery.
- ▲ Assess mother's awareness of hunger cues & swallowing.
- ▲ Encourage skin-to-skin contact, especially during feeds.
- ▲ Encourage sleeping near baby.
- ▲ Counsel against use of pacifiers & non-indicated supplements.
- ▲ Consider pre- & post-feed weight w/ accurate digital scale.
- ▲ Consider pumping to stimulate milk supply.
- ▲ **No supplements** at this time, except possibly mother's milk, using cup, syringe, or alternative method.
- ▲ Observe and reassess in 24°, while awaiting LC evaluation.

Red Flags

Probable inadequate milk transfer

For Baby:

- ■ dry mucous membranes
- ■ weight loss>10% associated w/poor feeding
- ■ less than 3 stools per day after day 4
- ■ meconium stools after day 4
- ■ less than 6 wet diapers per 24° after day 4
- ■ bilirubin >20 at 72° associated w/poor feeding

For Mother:

- ■ milk not in by day 5

- ■ Consultation w/ certified Lactation Consultant as soon as possible.
- ■ Arrange prompt outpatient follow-up or admission.
- ■ Evaluate latch and position.
- ■ **Supplement** with breast milk or formula by cup, syringe or alternative method.
- ■ Check for tongue tie, inverted nipples, h/o breast surgery.
- ■ Assess mother's awareness of hunger cues & swallowing.
- ■ Encourage skin-to-skin contact, especially during feeds.
- ■ Encourage sleeping near baby.
- ■ Counsel against use of pacifiers.
- ■ Consider pre- & post-feed weight w/accurate digital scale.
- ■ Double pump 8 times per day.

Coordinate with Lactation Consultant for feeding care plan and follow-up.

Follow recommendations for Signs of Success.

Massachusetts Breastfeeding Coalition
www.massbfc.org

Notes

* Avoid giving breastfeeding materials from formula companies.

* Making Milk is Easy, our one-page patient handout, is available in three languages from our homepage, www.massbfc.org.

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On line resources:

Academy of Breastfeeding Medicine: www.bfmed.org
International Lactation Consultant Association: www.ilca.org
US. Dept. of Health and Human Services: www.4woman.gov
Centers for Disease Control and Prevention: www.cdc.gov/breastfeeding
Massachusetts Breastfeeding Coalition: www.massbfc.org
La Leche League: www.lalecheleague.org

Massachusetts Breastfeeding Coalition

www.massbfc.org

Why is sleeping near the baby recommended?

There is a growing body of evidence showing the benefits of sleeping near the baby, rather than in a separate room. In the hospital, it has been shown that newborns who room-in with their mothers sleep more and cry less, and that mothers get the same amount of sleep whether they leave the baby in the nursery or keep the baby with them.

Sleeping near the baby facilitates breastfeeding at the earliest signs of hunger, thus helping build milk supply. Parents should be advised to continue this practice, even after they leave the hospital.

Bedsharing, in particular, has been shown to promote breastfeeding. There have been some concerns about bedsharing if not done safely. However, the Academy of Breastfeeding Medicine notes that there is insufficient evidence to routinely discourage co-sleeping. The ABM defines co-sleepers as those "who remain close enough for each to detect and potentially act on the sensory stimuli of the other, and this includes an infant sleeping alongside a parent on a different piece of furniture or object," as well as an infant who shares a bed with the parent.

Data about bedsharing show that such babies learn to respond to mother's movements and breathing, and that mothers learn to respond to baby's early feeding cues. Babies who bedshare have been found to spend more time nursing than babies who don't, and this helps build milk supply. In addition, nursing the baby in the sidelying position allows both parents to wake up more well-rested in the morning.

Having the baby sleep in a separate room from the mother, even with a baby monitor, does not result in these benefits. Crying is a late sign of hunger, and it is important to feed the baby well before one can hear him crying down the hall. It is also harder to feed a crying baby.

If a mother shares a bed with her infant, it is important that she know how to do this safely.

- The bed should be away from a wall on both sides to avoid entrapment.
- Heavy blankets, duvets, or pillows should be avoided.
- Soft surfaces such as waterbeds, couches, and daybeds should be avoided.
- Neither parent should be under the influence of alcohol, illegal drugs, or medications that would interfere with their ability to wake up.
- As with sleeping separately, the infant should be placed on his back.
- A baby should not sleep alone on an adult bed.
- No one except parents should share a bed with the baby.
- Because the risk of SIDS is higher in children of smokers, it is advised that parents who smoke do not bedshare, but can sleep with the baby nearby.

Why should pacifiers be discouraged?

There is growing evidence that pacifier use is associated with decreased breastfeeding duration. Pacifiers may mask the early signs of hunger, when feeding is important for establishing and building a milk supply. In addition, it is normal for a baby to rest or pause during a feeding; should feeding be terminated early in favor of a pacifier, this may have adverse effects on baby's intake and thus on mother's milk supply. The more the baby takes in, the more milk the mother will make in response.

Mothers who use pacifiers often find that they do not make enough milk. While some parents successfully use pacifiers after breastfeeding has been well established, pacifier use is inappropriate in healthy term newborns with possible breastfeeding problems (Warning Signs or Red Flags).

If a baby is awake and alert, making movements with his mouth, or sucking his fist, he is probably hungry and needs to nurse. Sucking on a pacifier requires different motor groups than sucking on a breast, so using a pacifier may make it hard for a baby to learn how to suck on the breast.

A baby who wants to nurse for comfort will likely get the satisfaction he seeks more quickly from the warmth of his mother's breast than from a pacifier. Comfort suckling may help a mother make more milk through nipple stimulation. It may be helpful to explain to the mother that the breast is not a substitute for a pacifier. In fact, elsewhere in the world, pacifiers are called "dummies" because they are substitutes for the breast. Bottle fed babies seem to have a need for pacifiers because they don't receive the comfort of the breast.

What about bottles? What is alternative feeding?

It has been reported that using bottles or artificial teats in the early weeks may make it difficult for a baby to learn to breastfeed. "Alternative feeding methods" technically refers to feeding a baby without the breast, but many breastfeeding professionals also take it to mean feeding without a bottle. For mothers who plan on going back to work, it is recommended that they introduce at about 3-4 weeks, but not before.

If a newborn is having trouble breastfeeding, feeding with a bottle may ultimately make the troubles worse. One must balance the potentially detrimental use of the bottle with the urgency of the situation. A baby who is very dehydrated or compromised may not feed effectively via alternative methods; in this situation, offering a bottle is the fastest way to rehydrate the baby, short of administering intravenous fluids.

Alternative methods include cup feeding, dropper or syringe feeding, finger feeding, or using a nursing supplementer, in which the baby drinks from a tube taped to the mother's nipple. A lactation consultant can be helpful in this situation and can teach a therapeutic use of a bottle, especially in situations where longer-term supplementation might be indicated.

NOTE: Use of formula without a medical reason may interfere with the establishment and building of the mother's milk supply. The more frequently the baby nurses, the more milk the mother will make, provided that milk transfer is effective. Using formula without a medical reason may cause a baby to be too full to nurse frequently.

continued next page

Why are length and frequency of feeds important?

A typical range of feedings is 8-12 feeds per 24 hours. More than 12 feeds daily may suggest that a baby is still hungry after a feed or that baby is not optimally positioned and latched-on to obtain maximal milk flow. Fewer feeds might indicate inadequate intake and may result in poorer milk production. The number of feedings per day is more important than the timing of feeding. Babies may cluster several feedings over a period of hours, but go for longer stretches at night without feeding, for example.

Similarly, a prolonged feeding may mean that the baby is not getting enough milk, especially if the mother cannot tell if the baby is swallowing during this feeding. Mothers should learn to differentiate nutritive suckling from comfort suckling. In nutritive suckling, there is a sustained rhythmic suck-swallow pattern with occasional pauses. In comfort suckling, the movement is lighter, and does not tend to give a strong tugging sensation. Comfort suckling may help stimulate milk production by nipple stimulation; however if milk is not removed from the breast during nutritive suckling, milk supply will diminish. One sign of suboptimal breastfeeding is a baby who is feeding continuously for long periods but without audible swallowing.

Mothers should be encouraged to "watch the baby, not the clock." This means that mothers should respond to changes in swallowing patterns—switching breasts when swallowing slows or when the baby takes himself off the breast. At one time, it was common for women to be advised to nurse "10-20 minutes on a side." However, there's no evidence to support timing feeds in this way.

It is important to feed at the earliest signs of hunger: stretching, mouth movements, chewing on hands and rooting. Mothers should be counseled not to wait until the baby is crying to feed him. Feeding early and often helps build and maintain an adequate milk supply and good weight gain.

What does tongue-tie look like?

Tongue-tie, or ankyloglossia, occurs when the lingual frenulum under the tongue is too short or displaced anteriorly. This may limit mobility of the tongue. When the baby attempts to stick out the tongue, the tongue appears heart-shaped or has a V-shaped notch at the tip. Tongue-tie occurs in about 5% of infants. Significant tongue-tie may result in breastfeeding difficulties, including inadequate milk transfer and sore nipples. If tongue-tie results in breastfeeding difficulties, it may be corrected with a simple procedure, frenotomy, or with a more elaborate procedure, frenuloplasty.

What is skin-to-skin contact?

Skin-to-skin contact means the baby's bare skin is in direct contact with the mother's bare skin. Skin-to-skin contact helps encourage breastfeeding and can be especially useful in a sleepy baby. In a cold environment, mother and baby can both be covered with a blanket, or baby can be underneath mother's clothes.

What about excessive weight loss?

Because babies are born with extra body fluid, the loss of this fluid through urination typically results in weight loss in the first days of life. However, some babies are particularly edematous at birth, and may therefore lose excessive amounts of weight through diuresis. It has been reported that some labor interventions may cause excess fluid retention in a newborn. Large or frequent meconium stools can also account for some excess weight loss. Weight loss that's more than expected may represent excessive fluid overload at birth or large meconium losses, and may not necessarily reflect inadequate milk transfer in a baby who is otherwise doing well.

What is double pumping?

Double pumping refers to pumping both breasts simultaneously, which is generally accomplished with an electric pump. Double pumping results in higher prolactin levels than pumping one breast at a time, and also may be quicker for the mother.

Massachusetts Breastfeeding Coalition

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The Best Start:

A Guideline for Healthy Term Newborns, Birth to 48 Hours

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Core Knowledge

Incorporate these basics into ROUTINE Prenatal classes and/or visits

Inform Parents About:

- the effects of labor medications on breastfeeding.
- drug-free alternatives for labor and delivery, including use of a birth doula, if available.
- effects of breastfeeding on acute and chronic diseases of women and children, so that mother can make an informed feeding choice.

Teach Skills for Breastfeeding Success:*

- Expect to feed within the first hour of life, with skin-to-skin contact.
- Offer frequent feeds, not formula: The more the baby nurses, the more milk the mother will make.
- Say 'no' to pacifiers and bottles.
- Sleep near the baby & nurse lying down.
- Feed early and often, at the first signs of hunger.
- Wide open mouth, flared-out lips.
- Watch the baby, not the clock.
- Recognize swallowing and milk transfer.
- Avoid supplementation without medical indication.
- Breastfeed exclusively for 6 months.

Promote Time for Breastfeeding and Rest:

Suggest that parents don't let visitors interrupt or delay feedings, and be prepared to ask visitors to leave. Suggest they turn ringer off the phone and rest between feedings.

Encourage Pregnant Women

to visit meetings of community breastfeeding support groups (e.g. La Leche League).

Questions about this chart?
See our FAQs at www.massbfc.org

Core Practices

For Baby:

At birth:

- ▲ Place baby skin-to-skin immediately after birth.
- ▲ Dry baby and assess Apgars with baby on mother.
- ▲ Breastfeed within the first hour of life.
- ▲ Show mother correct latch and position: wide open mouth, flared-out lips,"nose-to-breast, chest-to-chest."
- ▲ Delay vitamin K and eye prophylaxis until after first feed, up to 1 hour.
- ▲ Delay bath until after first feed.

First 48 hours:

- ▲ Check glucose only in high-risk babies.
- ▲ Perform baby's weights, vital signs, & examinations in mother's room.
- ▲ Perform all painful procedures with baby at breast *or* skin-to-skin (includes heelsticks and Vitamin K).
- ▲ Increase breastfeeding frequency & assure swallowing if hypoglycemic, hyperbilirubinemic, or weight loss >7%.
- ▲ Avoid supplements without a medical indication.
- ▲ Follow up 2 days after discharge & again at 2 weeks.

For Mother:

- ▲ Mother sleeps near baby 24 hours a day, and has maximal contact with baby, preferably skin-to-skin.
- ▲ Staff limits visitation time when it's time for feeding and teaching.
- ▲ Mother feels strong tugging which is not persistently painful.
- ▲ Parents are aware of feeding cues & swallowing.
- ▲ Parents are given written & verbal guidance* about Skills for Breastfeeding Success.
- ▲ Mother/baby demonstrate effective breastfeeding prior to discharge.
- ▲ Mother is given contact info for community support services.

Core Support

Provide extra support and/or consider referral to certified lactation consultant in the following circumstances, due to increased risk of breastfeeding problems:

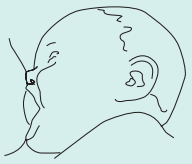
For Baby:

- ■ birth by vacuum extraction
- ■ continued rooting after feeding
- ■ weight loss > 7% associated with poor feeding
- ■ infant irritable, restless or sleepy & refusing to feed
- ■ use of non-breastmilk fluids or pacifiers
- ■ difficulty with latch
- ■ no visible or audible swallowing
- ■ no effective breastfeeding seen prior to discharge
- ■ tongue-tie or other anatomic abnormality
- ■ hyperbilirubinemia
- ■ hypoglycemia (<45 by laboratory confirmation) in at-risk or symptomatic infants

For Mother:

- ■ total labor >14 hours
- ■ caesarean birth
- ■ first-time mother
- ■ flat or inverted nipples
- ■ increased or persistently sore nipple
- ■ prior breastfeeding problems
- ■ use of chronic medications, to ensure safety in breastfeeding
- ■ prior breast surgery
- ■ type 1 diabetes
- ■ obesity
- ■ multiple birth
- ■ smoking

Proper latch on



Massachusetts Breastfeeding Coalition

Notes

* Avoid breastfeeding materials from formula companies

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On line resources:

Academy of Breastfeeding Medicine: www.bfmed.org
International Lactation Consultant Association: www.ilca.org
US. Dept. of Health and Human Services: www.4woman.gov
Centers for Disease Control and Prevention:
www.cdc.gov/breastfeeding
Massachusetts Breastfeeding Coalition: www.massbfc.org
La Leche League: www.lalecheleague.org

What effects do labor medications have on breastfeeding?

Many medications may cross the placenta during labor and result in sleepiness in the infant after birth. A sleepier infant may have trouble imprinting breastfeeding behavior. Some medications may have more effects than others. For example, epidural fentanyl crosses the placenta and has a half-life of up to 13 hours in the neonate. Meperidine (Demerol, Pethidine) has an active metabolite with a half-life that lasts days, and this drug in particular has been demonstrated to hamper breastfeeding success. Because of their propensity to cause sleepiness in infants, use of narcotics during labor may delay the time to first successful breastfeeding, thus increasing the risk of excessive weight loss in the infant and delay in lactogenesis. Research has demonstrated that various labor pain medications increase newborn crying and temperature and reduce baby's spontaneous breast-seeking and breastfeeding behaviors.

Use of a professional birth doula has been shown to reduce the amount of pain medication used by women in labor. Women labor coaches, in general, have been found to help reduce the use of pain medications during labor.

Why is breastfeeding in the first hour of life so important

In the first hour of life, the baby is most alert and able to imprint the unique suckling movements necessary for successful breastfeeding. As time passes, the baby becomes sleepier as he recovers from the birthing process. During this entire first hour of alertness, it's important to keep the baby with the mother, ideally skin-to-skin. Uncomfortable distractions and separations should be avoided until after the first feed. The Academy of Breastfeeding Medicine recommends that the infant should be dried and Apgars assessed while the baby is on the mother, and that Vitamin K and eye prophylaxis should be delayed until the first feed, up to one hour.

DiGirolamo et al. found that failure to initiate breastfeeding within the first hour of life was one of the strongest predictors of early termination of breastfeeding at 2 months.

What is skin-to-skin contact and why is it so important?

Skin-to-skin contact means the baby's bare skin is in direct contact with the mother's bare skin. Skin-to-skin contact helps encourage breastfeeding and can be especially useful in a sleepy baby. Skin-to-skin contact immediately after birth can help the baby maintain adequate body temperature, and decrease the risk of hypoglycemia associated with cold stress.

In a cool environment, mother and baby can both be covered with a blanket, or the baby can be underneath mother's clothes.

Why should supplements be avoided?

Use of formula without a medical reason may interfere with the establishment and building of the mother's milk supply. The more frequently the baby nurses, the more milk the mother will make, provided that milk transfer is effective. Using formula without a medical reason may cause a baby to be too full to nurse frequently.

According research by DiGirolamo et al., two of the strongest predictors of early termination of breastfeeding are use of supplements in the hospital and delay of the first breastfeeding beyond the first hour of life. Other predictors include: not breastfeeding on demand, not sleeping near the baby, and use of pacifiers.

Why should pacifiers be discouraged?

There is growing evidence that pacifier use is associated with decreased breastfeeding duration. Pacifiers may mask the early signs of hunger, when feeding is important for establishing and building a milk supply. In addition, it is normal for a baby to rest or pause during a feeding; should feeding be terminated early in favor of a pacifier, this may have adverse effects on baby's intake and thus on mother's milk supply. The more the baby takes in, the more milk the mother will make in response.

Mothers who use pacifiers often find that they do not make enough milk. While some parents successfully use pacifiers after breastfeeding has been well established, pacifier use is inappropriate in healthy term newborns in the first weeks of life.

If a baby is awake and alert, making movements with his mouth, or sucking his fist, he is probably hungry and needs to nurse. Sucking on a pacifier requires different motor groups than sucking on a breast, so using a pacifier may make it hard for a baby to learn how to suck on the breast.

A baby who wants to nurse for comfort will likely get the satisfaction he seeks more quickly from the warmth of his mother's breast than from a pacifier. Comfort suckling may help a mother make more milk through nipple stimulation. It may be helpful to explain to the mother that the breast is not a substitute for a pacifier. In fact, elsewhere in the world, pacifiers are called "dummies" *because they are substitutes for the breast.*

Why is sleeping near the baby recommended?

There is a growing body of evidence showing the benefits of sleeping near the baby, rather than in a separate room. In the hospital, it has been shown that newborns who room-in with their mothers sleep more and cry less, and that mothers get the same amount of sleep whether they leave the baby in the nursery or keep the baby with them.

Sleeping near the baby facilitates breastfeeding at the earliest signs of hunger, thus helping build milk supply. Parents should be advised to continue this practice, even after they leave the hospital.

Bedsharing, in particular, has been shown to promote breastfeeding. There have been some concerns about bedsharing if not done safely. However, the Academy of Breastfeeding Medicine notes that there is insufficient evidence to routinely discourage co-sleeping. The ABM defines co-sleepers as those "who remain close enough for each to detect and potentially act on the sensory stimuli of the other, and this includes an infant sleeping alongside a parent on a different piece of furniture or object," as well as an infant who shares a bed with the parent.

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Data about bedsharing show that such babies learn to respond to mother's movements and breathing, and that mothers learn to respond to baby's early feeding cues. Babies who bedshare have been found to spend more time nursing than babies who don't, and this helps build milk supply. In addition, nursing the baby in the sidelying position allows both parents to wake up more well-rested in the morning.

Having the baby sleep in a separate room from the mother, even with a baby monitor, does not result in these benefits. Crying is a late sign of hunger, and it is important to feed the baby well before one can hear him crying down the hall. It is also harder to feed a crying baby.

If a mother shares a bed with her infant, it is important that she know how to do this safely:

- The bed should be away from a wall on both sides to avoid entrapment.
- Heavy blankets, duvets, or pillows should be avoided.
- Soft surfaces such as waterbeds, couches, and daybeds should be avoided.
- Neither parent should be under the influence of alcohol, illegal drugs, or medications that would interfere with their ability to wake up.
- As with sleeping separately, the infant should be placed on his back.
- A baby should not sleep alone on an adult bed.
- No one except parents should share a bed with the baby.
- Because the risk of SIDS is higher in children of smokers, it is advised that parents who smoke do not bedshare, but can sleep with the baby nearby.

Why perform painful procedures while the baby is at breast?

Gray et al. found that babies tolerate heelsticks better if they are done while breastfeeding. Infants have less crying and grimacing, and substantially lower heart rates, compared to babies being swaddled in their bassinets during the procedure. Breastfeeding is thought to have a potent analgesic effect. Skin-to-skin contact itself can also have an analgesic effect.

How can breastfeeding be supported through hyperbilirubinemia?

Jaundice is common in newborns and is usually normal, but can sometimes be a sign of serious illness. When jaundice is present in infants under 24 hours of age, it is never normal and needs further medical assessment.

"Jaundice" is non-specific term referring to yellowing of the skin from bilirubin. Because some jaundice can be normal, the term "hyperbilirubinemia" more accurately indicates a need for medical attention. When measuring bilirubin levels, the upper limit of normal varies depending on the age of the infant.

Hyperbilirubinemia can be a sign of inadequate milk transfer. It does not usually mean that a baby needs to take formula, but should prompt an evaluation by a certified lactation consultant. Frequent nursing can help jaundice resolve more quickly, provided there is audible or visible swallowing, which indicates that the baby is actually getting milk. According to the Academy of Breastfeeding Medicine, supplements are not indicated in the infant with bilirubin levels less than 20 mg/dl after 72 hours of age when the baby is feeding well, stooling adequately and has weight loss of less than 7%. (They do not comment on younger infants). At birth to 48 hours, there is no indication to interrupt breastfeeding for diagnostic purposes in the evaluation of jaundice.

What are the risk factors for breastfeeding difficulties, and why?

In general, a more stressful labor and delivery are associated with delayed onset of lactation and/or infant suckling difficulties. Delayed onset of lactation is defined as greater than 72 hours. Dewey et al. (2003) found that Caesarean section and primiparity are the two of the most important risk factors. First time mothers have several reasons for breastfeeding difficulties: they tend to have longer labors, they are more likely to have received labor analgesia, and they also lack breastfeeding experience.

Other risk factors for both delayed onset of lactation and infant suckling difficulties include: flat or inverted nipples, maternal obesity (BMI>27), and total labor that lasted more than 14 hours. In addition, infants whose 1-minute Apgar was 7 or less also tended to have suckling difficulties. Hall et al. demonstrated that vacuum extraction is linked with feeding difficulties, as well. All these mother-infant pairs may need additional breastfeeding guidance.

Even when infants started out with excellent suckling behaviors on the first day of life, Dewey et al. found that subsequent use of pacifiers or non-breastmilk fluids in the first 48 hours was linked with subsequent development of suckling difficulties at day 3 and day 7. Numerous other studies have also linked the use of pacifiers and non-indicated supplements to early weaning.

Excess weight loss can result from either delayed onset of lactation or infant suckling difficulties or both.

Breast surgery can disrupt the anatomy of the breast and may potentially cause problems with breastfeeding. Periareolar incisions are of particular risk, as is any incision that may damage the nerve supply to the nipple, and thus affect the let-down reflex. Many women who have had breast surgery can still breastfeed, but they should be monitored closely because of the risk that they may not be able to meet their infant's full nutritional needs, and may need to supplement.

Many factors may also lower milk volume, such as cigarette smoking, trauma or surgery to the breast or chest, and inadequate feeding frequency. Smoking causes a decrease in milk volume in a dose-dependant manner. There is also some evidence that hormonal contraceptives may reduce milk volume, particularly those containing estrogen, as estrogens may suppress milk production. However, much is still not known about the effects of hormonal contraceptives on milk volume. Concern has been raised about the administration of Depo-Provera prior to the establishment of a full milk supply. [The manufacturer recommends waiting until six weeks post-partum, while noted pharmacologist Thomas Hale recommends delaying administration of all progestin agents "until three days post-partum, if not longer."] Of note, exclusive breastfeeding in the early months has been shown to reduce fertility significantly.

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What does tongue-tie look like?

Tongue-tie, or ankyloglossia, occurs when the lingual frenulum under the tongue is too short or displaced anteriorly. This may limit mobility of the tongue. When the baby attempts to stick out the tongue, the tongue appears heart-shaped or has a V-shaped notch at the tip. Tongue-tie occurs in about 5% of infants. Significant tongue-tie may result in breastfeeding difficulties, including inadequate milk transfer and sore nipples. If tongue-tie results in breastfeeding difficulties, it may be corrected with a simple procedure, frenotomy, or with a more elaborate procedure, frenuloplasty.

What is the approach for difficulty with latch?

Problems with latching onto the breast may be related to birth events, gestational age, use of artificial nipples (e.g., pacifiers or bottles), distractions during feeding time, crying, separation from mother, depressed appetite, depressed sucking ability, or attempts to feed when the infant is not demonstrating feeding cues.

Consider the following interventions to achieve a successful latch:

- Keep mother and baby together skin-to-skin, as much as possible.
- Avoid distractions during feeding time, such as visitors.
- Place the baby to breast as soon as he demonstrates feeding cues.
- Position baby for asymmetric latch so that the lower jaw has more contact with the breast than the upper jaw. Slight head flexion can maintain a patent airway. When the baby's mouth is opened like a yawn, move the mouth to the breast with the chin and lower lip making the initial contact, followed by the upper lip and tip of the nose. Some mothers and babies find that latch is easier when the mother offers the areola under the nipple as the first contact point with the baby's mouth, which helps facilitate latch on to that part of the breast. The lower lip and chin can then be planted well below the nipple, while the nose is typically at the level of the nipple. Then, the baby's mouth rolls up and on to the breast, as the mother draws the baby in. The upper lip should make contact just above the nipple.
- Assist the infant to open his mouth as wide as possible—ideally at a 150 degree angle at the corner of the mouth. If the baby will not open his mouth wide enough for painless latch-on, or if he clenches his jaw, hold the baby's jaw between your thumb and index finger and move the jaw a small amount from side to side. Check to see if lower lip is rolled under, which prevents the mouth from opening fully. If the mouth is not open to at least 130 degrees, gently pull down on the chin and evert the lower lip and encourage a more wide open mouth.
- A baby who is crying or who has an elevated tongue tip will need to be calmed first. The tongue can be stroked down and forward prior to latching.
- Place a small amount of expressed colostrum at the breast using a dropper, syringe, or tubing.This helps encourage latch. Use any of the following techniques to deliver this "colostrum incentive:"
  - Place a syringe or soft dropper in the side of the baby's mouth, which will elicit sucking and deliver a small amount of colostrum with each suck. Continue until baby demonstrates rhythmic suck and swallow at the breast.
  - Use butterfly tubing (with the needle cut off) attached to a 10cc syringe and taped to the breast in order to deliver expressed colostrum. This technique can also provide a supplement, if needed.
- Have the mother use a U-hold to provide proper jaw support if the infant is unable to retain a proper latch. The U-hold (also known as the Dancer hand position) is a C-hold which is rotated 90 degrees so that the hand is placed under the breast instead of on the side: the thumb is placed on the lateral margin of the breast and the four fingers rest on the medial aspect of the breast, or vice versa. This hand position is often useful for preterm infants, babies with a weak suck, or those with muscular or neurological problems that inhibit normal jaw movements. With the U-hold, the entire jaw and breast are supported together, using the same hand. The thumb and index finger of this hand are then in a position to be placed on the both cheeks of the infant and can be pressed gently inward to cause contact between the buccal surfaces of the mouth and the nipple. This allows all parts of the baby's mouth to be in contact with the breast.
- Assess for tongue-tie (ankyloglossia): baby's tongue has a v-shaped notch when it protrudes.
- Hand express colostrum and feed it to the baby to help ensure adequate intake. Use a spoon, cup, syringe, or dropper. This may also help calm a crying baby.
- A lactation consultant may recommend judicious use of a nipple shield in special situations.
- Encourage mother to gently massage and compress her breast when the baby pauses between sucking. This may release a burst of colostrum/milk.

Note that a successful latch does not ensure milk transfer unless the baby also demonstrates audible or visible swallowing.

Which babies should be screened for hypoglycemia?

According to the Academy of Breastfeeding Medicine, the following babies are at risk for hypoglycemia and should be screened:

- Small for gestational age (SGA) < 10th percentile for weight
- Discordant twin (smaller)
- Large for gestational age (LGA) > 90th percentile for weight
- Infants of diabetic mothers
- Low birth weight infants (< 2500 grams)
- Post-asphyxia
- Erythroblastosis fetalis
- Polycythemia (venous Hct > 70%)
- Presence of microphallus or midline defect
- Beckwith-Weidmann Syndrome
- Cold stress/hypothermia
- Other stresses, such as respiratory distress, sepsis, etc.

Screening is not recommended in other infants. Infants of diabetic mothers should be screened at approximately 30 minutes; other high risk infants can be screened at 2 hours. Screening can be done using a bedside dextrose-stick. However, a low reading must be confirmed with a laboratory test on plasma or serum.

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Massachusetts Breastfeeding Coalition uses this operational definition of hypoglycemia:

Infant parameters values	Age in hours postbirth	Threshold glucose for intervention
Asymptomatic near term (34-37 weeks)		
• *No risk factors*	1st 24 hours	<30-35 mg/dL
	after 24 hours	<40-50 mg/dL
Symptomatic infant		
• *Signs of hypoglycemia*	any age	<45 mg/dL
• *Any gestational age*		
At-risk infant		
• *(see above for criteria)*	any age	<36 mg/dL

NOTE:

- Infants with glucose levels <20-25 mg/dL require IV glucose and close monitoring.
- Asymptomatic healthy term infants with no risk factors should NOT be screened.

What is symptomatic hypoglycemia and how should it be treated?

According to the Clinical Protocol on Hypoglycemia from the Academy of Breastfeeding Medicine:

It cannot be emphasized enough that all the clinical signs of hypoglycemia are non-specific, and the physician must assess the general status of the infant by observation and physical examination to rule out disease entities and processes that may need additional laboratory evaluation and treatment. Some common signs include:

- Tremors, irritability, jitteriness, exaggerated Moro reflex
- High pitched cry
- Seizures
- Lethargy, listlessness, limpness, hypotonia
- Cyanosis, apnea, irregular rapid breathing
- Hypothermia, temperature instability, vasomotor instability
- Poor suck and refusal to feed

MANAGEMENT RECOMMENDATIONS

Healthy term neonates do not develop symptomatic hypoglycemia as a consequence of underfeeding. Underlying illness must be excluded in such infants.

Bedside screening tests must be confirmed by true laboratory glucose measurements.

Monitoring should begin within 30 minutes for infants of diabetic mothers and no later than 2 hours of age for infants in other risk categories. At-risk infants should be monitored every 2 to 4 hours prior to a feeding, until a normal blood glucose concentration is observed after serial measurements while receiving feedings.

Hypoglycemia can be minimized by early initiation of breastfeeding, within the first 30-60 minutes after delivery. Early breastfeeding is not precluded just because the infant meets the criteria for glucose monitoring.

Initiation and establishment of breastfeeding is facilitated by skin-to-skin contact of mother and infants. Such practices will maintain normal infant body temperature and reduce energy expenditure while stimulating suckling and milk production. Feedings should be frequent, at least 10 to 12 breastfeedings per 24 hours, and the infant should be put to the breast at the earliest signs of hunger (note that crying is a late sign of hunger).

In a symptomatic infant, intravenous glucose should be given. Initiate intravenous glucose using 2 cc/kg 10% glucose bolus followed by a continuous infusion of 6 to 8 mg/kg/min glucose (approximately 100 cc/kg/day). Do not rely on oral or intragastric feeding to correct hypoglycemia. Such an infant is not normal and requires a careful examination and evaluation.

Encourage frequent breastfeeding after relief of symptoms.

Adjust intravenous rate by blood glucose concentration.

Once blood glucose stabilized, resume breastfeeding and slowly reduce intravenous infusion. Check glucose concentrations before feedings until values are stabilized off intravenous fluid.

Carefully document signs, physical examination, screening values, laboratory confirmation, treatment and changes in clinical condition.

How should asymptomatic hypoglycemia be managed?

According to Clinical Protocol on Hypoglycemia from the Academy of Breastfeeding Medicine:

- Continue breastfeeding (approximately every one to two hours) or feed expressed breast milk or breast milk substitute (approximately 10-15 ml/kg). According to ABM's Protocol on Supplementation, breast milk substitutes are recommended only if the hypoglycemia is unresponsive to frequent breastfeeding.
- Recheck blood glucose concentration before subsequent feedings until value is stable.
- If neonate is unable to suck, avoid intragastric feeding and begin intravenous therapy. Such an infant is not normal and requires a careful examination and evaluation in addition to more intensive therapy.
- If enteral feeding otherwise is not tolerated, begin intravenous glucose infusion. Such an infant also is not normal and requires a careful examination and evaluation as well as more intensive treatment.
- Intravenous therapy: 2 cc/kg of 10% glucose by bolus followed by a continuous infusion of 6-8 mg/kg/min of glucose (approximately 100 cc/kg/day). Repeat serum glucose within 30 minutes, and serially thereafter until stable.
- If glucose is low despite feedings, begin intravenous 10% glucose infusion of 6-8 mg/kg/min (approximately 100 cc/kg/day).
- Adjust intravenous rate by blood glucose concentration.
- Once blood glucose is stabilized in the normal range, continue breastfeeding and slowly reduce intravenous infusion. Check glucose concentrations before feedings until values are stabilized off intravenous fluid.
- Carefully document signs, physical examination, screening values, laboratory confirmation, treatment and changes in clinical condition.

Breastfeeding Update 2: Clinical Lactation Management*

Nancy G. Powers, MD† and Wendelin Slusser, MS, MD§

IMPORTANT POINTS

1. **Physicians can help limit infants' exposure to medications in human milk without interfering with breastfeeding.**
2. **Maternal breast problems and conditions may be significantly related to feeding difficulties; to detect most of these, the pediatrician must obtain a thorough maternal history and physically inspect the breasts.**
3. **Despite the many advantages of human milk and breastfeeding for the preterm infant, required hospitalization imposes barriers to milk production and breastfeeding. These mothers require attention and support.**
4. **Early identification of the breastfed term infant who has inadequate intake will prevent morbidity while physician and mother work to preserve breastfeeding.**
5. **Very few maternal infections are a contraindication to breastfeeding.**

Clinical lactation management is the science and art of assisting women and infants with breastfeeding. Until recently, lactation and breastfeeding rarely were addressed in medical school or residency training. If breastfeeding was taught, it was by lecture, *not* by clinical example. Because the mother-infant pair is dynamically interrelated for breastfeeding, it is imperative to consider *both* individuals when attempting to assess and "manage" breastfeeding. Multidisciplinary input is desirable and often critical.

Current State of Affairs

During the past 5 years, with the resurgence of professional and lay interest in the promotion of breastfeeding, it has become increasingly common to encounter nurses who are lactation consultants. They may be working in hospitals, physician offices, or private practice. It also is becoming increasingly common for physicians to use their office nurses as "lactation educators" or "breastfeeding specialists" once these nurses have acquired sufficient knowledge, expertise, and experience. These individuals have an in-depth knowledge of early breastfeeding management and problem solving; they also are clinically competent to assist and support the mother-infant pair. Their particular areas of expertise include (but are not limited to): understanding the anatomy and physiology of lactation (Fig. 1); facilitating immediate breastfeeding postpartum; proper positioning and latch-on of the infant at the breast; preventing postpartum breastfeeding problems by frequent, effective feedings; assisting the mother in learning to recognize and respond to infant cues; and recognizing and managing common problems such as a sleepy baby, a fussy baby, latch-on difficulties, sore nipples, engorgement, and perceived low milk supply. It is imperative that these specialists have enough experience with young infants to recognize illness.

The increasing availability of lactation consultants/breastfeeding specialists does not exempt the physician from responsibility. As with other consultations that involve delegation of care, the physician continues to oversee and coordinate the management of the infant. If the physician refers patients to the lactation consultant for detailed feeding assessment and assistance and if communication is open, the lactation consultant can feel comfortable in working with the physician on more complex medically related feeding problems.

Anatomy and Physiology

Physicians must understand several essential underlying anatomic and physiologic considerations thoroughly as they assist the breastfeeding dyad (Tables 1 and 2). (See Lawrence and Riordan and Auerbach in Suggested Reading for more detailed information.)

PREPARATION FOR BREASTFEEDING

Pregnancy provides optimal preparation of the breasts for subsequent feeding. The only further preparation required is that of clinicians: obtaining a careful history, examining the breasts, and communicating any concerns to colleagues.

A complete breastfeeding history includes exploration of the feeding decision, previous breastfeeding history, previous postpartum hemorrhage (possible Sheehan syndrome), previous breast surgery (cosmetic or reconstructive surgery, biopsies), cardiac or chest wall surgery, breast trauma (eg, a burn that has caused

ABBREVIATIONS

HIV-1:	Human immunodeficiency virus Type 1
HIV-2:	Human immunodeficiency virus Type 2
HSV-1:	Herpes simplex virus Type 1
HTLV-1:	Human T-lymphotrophic virus type 1
HTLV-2:	Human T-lymphotrophic virus type 2
UNICEF:	United Nations International Emergency Children's Fund
WHO:	World Health Organization

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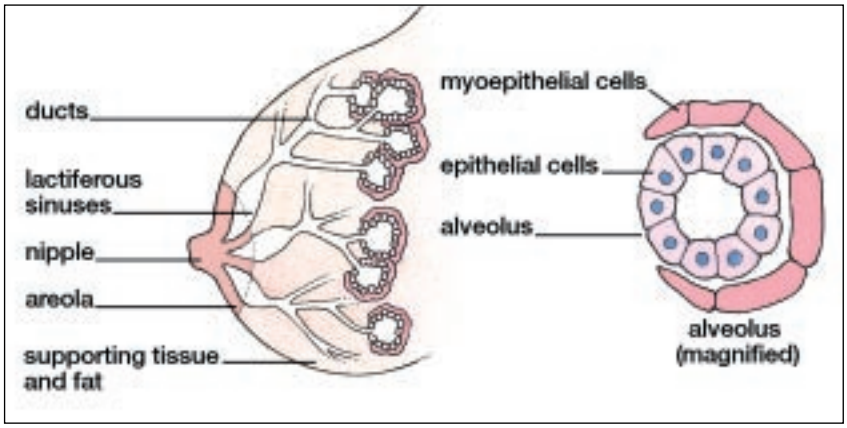

FIGURE 1. Clusters of epithelial cells form the alveolus. During lactation, these cells actively secrete milk into the lumen. When oxytocin, secreted by the posterior pituitary, reaches the mammary gland via the bloodstream, contraction of the myoepithelial cells pushes the milk down the ducts to pool in the lactiferous sinuses. Illustration by Marcia Smith.

scarring), questions regarding breast changes during pregnancy, family history of breast cancer, and any other concerns the mother may have about her breasts or about the feeding process. Table 3 lists some of the major maternal conditions affecting breastfeeding.

BREAST SURGERY

Previous breast surgery has the potential to interfere with lactation. Breast reduction, in particular, usually involves significant cutting of ducts or nerves that could impair the lactation process. Breast augmentation tends to be associated with great anxiety on the part of the pregnant and lactating woman about the possibility of causing illness in her infant. Most breastfeeding experts see no strong evidence to support ill effects in the infants of these women. If breast augmentation was performed to correct a developmental anomaly of the breasts, lactation performance may have been impaired prior to surgery (see section on Insufficient Glandular Development). In all women who have had breast surgery, breastfeeding care should be individualized and the infant followed frequently during the first few weeks for appropriate weight gain.

FLAT, RETRACTILE, OR INVERTED NIPPLES

No specific intervention is required for bilateral inverted or retractile nipples in early pregnancy. (If one nipple normally is protuberant, the infant can nurse totally from that breast if necessary.) If both nipples remain inverted near term, the woman may require extra attention to intrapartum management, should be cautioned to avoid artificial nipples and pacifiers, or may need extra skilled assistance with early feeding. Most infants can learn to nurse from inverted or retractile nipples if given the opportunity soon after delivery and if they do not receive artificial nipples the first several days. Use of a breast pump just prior to feeding may be beneficial in pulling the nipple and areola out further and helping to initiate let-down.

The prenatal use of breast shells (also called milk cups), although widespread, is controversial. Theoretically, the shell allows the nipple to protrude through the hole in the plastic and gradually stretch the fibers that are "tethering" the inverted nipple. In the only study to date, the use of breast shells prenatally was associated with less successful breastfeeding. The greatest disadvantage was that women randomly assigned to use shells decided not to initiate breastfeeding in greater numbers than those who were not assigned their use. The authors of that study suggested that prenatal use of breast shells be abandoned.

Nipple shields (an artificial nipple placed over the mother's breast/nipple during the postpartum period) have several drawbacks that may complicate the original problem. They reduce milk flow to the infant by 40%, causing a rapid decline in milk supply, and the infant tends to become "addicted" to the sensation of a rigid nipple, similar to a bottle nipple preference. The result is that the mother cannot feed without the shield, but she cannot produce sufficient milk while using the shield (unless she also pumps, which becomes complicated). Nipple shields rarely are indicated and should be prescribed only by a qualified licensed practitioner who understands and communicates the potential risks and who will follow the mother and infant closely.

INSUFFICIENT GLANDULAR DEVELOPMENT

"Insufficient glandular development" of the breast (sometimes called "primary lactation failure") is characterized by immature-appearing breast(s). Striking asymmetry is present in the unilateral form, although bilateral underdevelopment also has been documented. Some women may have had cosmetic surgery to correct the appearance of the anomaly. Other major features include little or no breast growth during pregnancy and lack of physiologic engorgement postpartum. Hormone levels, including prolactin, are normal.

In general, small breasts will produce normal amounts of milk. However, small, immature, or asymmetric breasts that do not respond to pregnancy by enlarging suggest the possibility of anomalous development. The obstetrician should inform the pediatrician of this condition and the pediatrician should incorporate questions about breast changes into the maternal history-taking. Close follow-up of the infant is mandatory, with weight checks every 2 to 3 days, because these babies can develop significant dehydration or hypoglycemia quite rapidly.

Because insufficient glandular development of the breast is a clinical diagnosis and is rare (probably less than 1 per 1,000 women of childbearing age), the breastfeeding experience should be encouraged until signs and symptoms are definite. Infants should receive early supplementation to avoid significant

TABLE 1. Lactation Physiology Glossary of Terms

These are listed in chronologic order as they occur in lactation.

- **Milk ejection reflex** = **let-down** = **oxytocin release:** The maternal neuroendocrine response to suckling or other stimuli that release oxytocin from the posterior pituitary into the circulation. The oxytocin then acts upon the mammary myoepithelial cells to contract and force milk from the alveoli into the ducts toward the lactiferous sinuses where it is readily available to the suckling infant.
- **Lactogenesis = "The milk comes in":** The onset of copious milk production in the first several days postpartum. After delivery of the placenta, systemic levels of progesterone and estrogen drop steadily, while prolactin levels remain high. This sequence of hormonal changes potentiates the target organ (mammary epithelium) to respond to prolactin.
- **Galactopoiesis:** The ongoing maintenance of milk production in sustained lactation. Galactopoiesis requires systemic hormones, but day-to-day regulation of milk volume depends on ongoing milk removal, an "autocrine" function (see below) of the mammary gland. The more the baby nurses, the more milk is produced (if the baby is successful in removing milk from the breast). Ongoing milk production also can be stimulated by hand expression or pumping, as long as milk is removed in sufficient quantities.
- **Autocrine regulation:** Self-regulation of milk production due to local factors produced in the mammary gland. A peptide "inhibitor" produced in the gland slows milk production unless it is "removed" by the frequent suckling. Conversely, if frequent feedings occur, the inhibitor is removed, and milk production is increased.
- **Foremilk:** Milk that is extracted early in a feeding. This milk is lower in fat and, therefore, lower in calories than is hindmilk. Milk fat concentration rises linearly during a feeding, so there is no specific point in time that distinguishes foremilk from hindmilk.
- **Hindmilk:** Milk that is extracted later in a feeding. This milk is higher in fat and calories than foremilk. Milk fat concentration rises linearly during a feeding, so there is no specific point in time that distinguishes foremilk from hindmilk. The longer the interval between feedings, the greater the difference will be in fat concentration between foremilk and hindmilk.
- **Unilateral involution:** One breast ceases milk production while the other continues. Because ongoing milk production is regulated locally, continued milk production is regulated independently in each breast. The side that involutes will be somewhat smaller than the side that is producing milk until complete weaning has occurred on both sides.

dehydration following overzealous attempts to stimulate the milk supply with frequent suckling. Despite frequent and effective milk removal, these breasts cannot be stimulated into full production; partial breastfeeding, using a supplementer, is an option for some women.

Intrapartum Care

Many health professionals are not aware that intrapartum attitudes, events, and procedures affect breastfeeding; these last well beyond delivery. More research accumulates each year to affirm that a more "natural" birthing process enhances the instinctual and reflexive aspects of breastfeeding.

Because maternal medication during labor affects infant neurobehavioral status, minimizing the use of medications during labor and delivery will optimize infant feeding behavior. Epidural anesthesia is associated with long labors, maternal fever, increased rates of instrumented delivery and cesarean section as well as altered infant neurobehavior. The ultimate effect of epidural anesthesia on breastfeeding remains an important area for further research.

Gastric suctioning of the newborn should be abandoned when the labor and delivery is uncomplicated. If suctioning is necessary, gentle bulb suctioning of mouth and nares usually is sufficient.

After delivery of the healthy term infant, immediate and sustained contact between mother and infant strongly correlates with longer durations of breastfeeding. The infant can be dried, assigned Apgar scores, and visually inspected as it receives skin-to-skin contact with the mother. Both mother and baby can be covered with warm blankets if the room temperature is cool. Skin-to-skin contact also accelerates infant temperature stability and normalization of blood glucose and improves acid-base status. For the healthy dyad, skin-to-skin contact should occur for at least 1 to 2 hours after delivery. Even short interruptions for bathing, eye prophylaxis, administration of vitamin K, weighing, and other procedures have been documented to reduce breastfeeding success. These first hours following birth, when mother and infant are alert, allow time for maternal-infant bonding, imprinting, oxy-tocin release, and nutritive feeding with actual intake of colostrum.

It is essential for an experienced health professional to observe and assist with at least one feeding in the hospital to document good latch-on. If the first feeding in the alert period is not optimal, the infant may be sleepy for up to 48 hours postpartum.

Optimal Breastfeeding

NOTHING BUT THE BREAST

Questions frequently arise regarding the adequacy of human milk for the newborn infant; numerous customs for supplementation have arisen throughout the world. However, it is well-documented that for healthy infants, no additional liquids, foods, or vitamins are

necessary during the first 6 months of breastfeeding (See "Breastfeeding Update 1: Immunology, Nutrition, and Advocacy" in April 1997 issue.)

Breastfed infants never need to be bottlefed; even young infants can take expressed human milk from a cup and older infants can graduate directly from breast to cup sometime after 6 months, when other liquids are started. For families who are more comfortable giving human milk in a bottle, it is reasonable to introduce a bottle at 3 to 6 weeks of age (when breastfeeding is usually well established).

HOW OFTEN AND HOW LONG?

After delivery, both mother and infant usually are alert for 1 to 2 hours and then become drowsy. In the hospital, term infants often show little interest in feeding for the next 24 to 48 hours. Infants 37 weeks of gestation or younger require close scrutiny for possible hypoglycemia, but term infants should have adequate energy stores.

Once the baby becomes more wakeful, feedings tend to be very frequent (8 to more than 12 per 24 hours) and clustered during particular portions of the day or night.

TABLE 2. Clinical Lactation Management Glossary of Terms

- **Dyad:** The mother-infant pair.
- **Latch-on** = **attachment at the breast:** The manner in which the infant's oral structures make contact with the maternal breast to suckle. Proper latch-on requires proper positioning of the infant's body, active rooting reflex with wide opening of the jaw to facilitate grasping of the areola as well as the nipple, lips relaxed and flanged out, tongue cupped around inferior aspect of nipple-areola complex, and deep rhythmic sustained bursts of sucks with audible swallows (indicates that let-down has occurred). See Figure 2.
- **"Nipple confusion":** An imprecise term describing the situation that occurs when newborns receive artificial nipples and subsequently refuse to latch-on at the human breast. Occasionally, the term is used for older breastfed infants who refuse to take a bottle.
- **Sheehan syndrome:** Loss of anterior pituitary function (and subsequent loss of prolactin, thyroid hormone, cortisol, and gonadotropins) following severe postpartum hemorrhage. The hypotension associated with the blood loss decreases perfusion to the pituitary. Lactogenesis does not occur due to absent or deficient prolactin levels. Frequently the diagnosis of this syndrome is delayed for years beyond the initiating event.
- **"Supplementer" = Infant feeding device** = **Supplemental Nutrition System (proprietary name)** = **Supplementer tube:** A device that consists of a small flexible feeding tube attached to a milk reservoir in such a way that the infant can receive supplemental human milk or formula while breastfeeding. This helps to maintain maternal milk supply and to prevent nipple confusion. See Figures 3 and 4.

It is essential at this early stage to be certain that the infant has good latch-on technique (Fig. 2), which prevents most common breastfeeding problems, such as sore nipples, unsatisfied baby, engorgement, low milk supply, and hyperbilirubinemia.

If the infant is well latched-on and feeding is painless, it should continue on the first breast until the baby is finished. When finished, the infant will detach spontaneously or will fall asleep and not feed in response to gentle stimulation.

Parents and health professionals must learn to use behavioral and physical criteria to judge appropriate intake, in place of weights, measures, and units of time. Table 4 lists the signs of good breastfeeding and warning signs that early breastfeeding is not going well.

Sleep Issues and Nighttime Parenting

Only a few newborns exhibit regularly spaced feeding times. Anticipatory guidance regarding nighttime fussiness during the first week as well as the expectation of 8 to 12 feedings per 24 hours can be invaluable during this crucial period. Many women find that sleeping with the baby eases the infant's transition to nighttime sleep. Breastfed infants need to be fed at night to maintain growth and to receive consistent responses to hunger cues. In addition, night feedings often are necessary to maintain adequate milk production (Fig. 5). Care should be taken not to frown upon mothers who continue to feed their infants at night or who sleep with them because these are normal physiologic processes for the breastfeeding mother-infant dyad (see McKenna

TABLE 3. Maternal Conditions Directly Associated With Significant Breastfeeding Problems

ACQUIRED PRIOR TO PREGNANCY/LACTATION	ACQUIRED *BECAUSE* OF BREASTFEEDING PROBLEM	ACQUIRED DURING PREGNANCY/LACTATION AND *CAUSES* BREASTFEEDING PROBLEM
• Inverted or retractile nipples	• Sore, cracked nipples	• Retained placenta
• Breast surgery	• Engorgement	• Hypothyroidism
• Primary glandular insufficiency of the breasts	• Blocked ducts	• Sheehan syndrome
• Breast trauma	• Mastitis	

in Suggested Reading). Providing strategies on how a mother can minimize awakening when feeding at night is a supportive step for breastfeeding families.

Newborns feed much better according to their own sleep/wake cycles than if parents attempt to awaken infants by the clock (when the infant may be in a deep sleep). Parents need to awaken sleepy newborns during the first few weeks of life only if the infant is feeding fewer than eight times per 24 hours and only until the baby regains its birthweight.

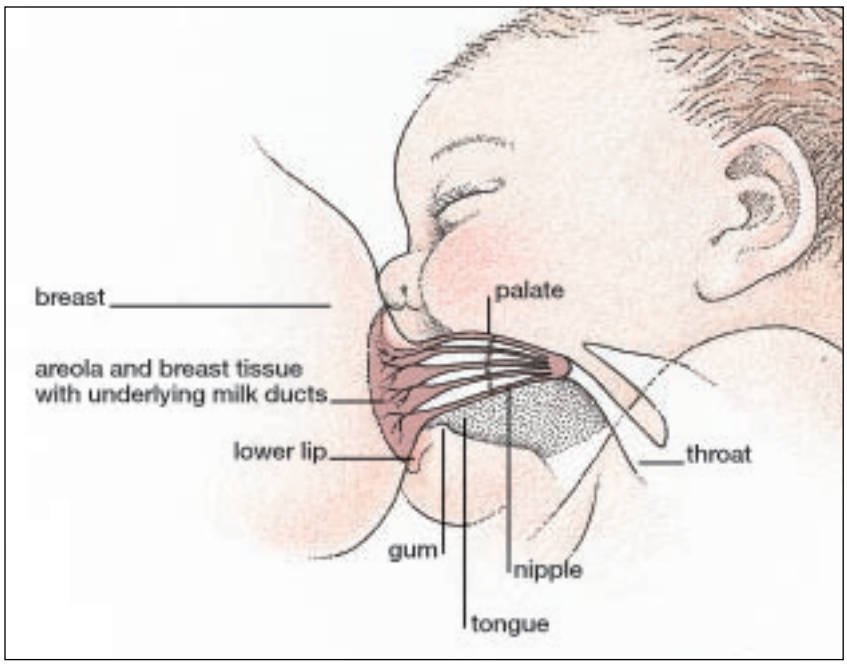

FIGURE 2. Correct attachment (latch-on) at the breast includes: 1) newborn's nose close to or touching the breast while it breathes through the nasolabial folds; 2) rooting by the infant to move in and grasp the areola well behind the nipple, forming a teat; 3) tongue moving forward beyond the lower gum, cupped and forming a trough, then removing milk from the lactiferous sinuses by peristaltic waves; 4) the jaw moving down, creating a negative pressure gradient that facilitates transfer of the milk into the oral cavity. Illustration by Marcia Smith.

Keeping Records of Feedings

Under certain circumstances (especially with patients who are experiencing problems), a breastfeeding log or diary may be useful (Fig. 6). If the parents are comfortable jotting down feeding-related events, a written record can help them keep track of important indicators during the early postpartum period. Sleep deprivation and constant care of the infant make it easy for parents to lose track of time and over- or underestimate actual numbers of feedings and diaper changes. For the infant illustrated in Figure 4, the diary makes it easy to see that the infant received 11 feedings (with a cluster between 4 PM and 8 PM) and had 3 to 5 wet diapers along with 6 stools (transitioning to yellow), all of which are within the normal ranges. The column labeled "other" could reflect expressed milk or formula given by cup or supplementer and the amount the baby received.

When to Supplement

Giving water or formula supplements will sabotage breastfeeding by decreasing the infant's interest at the breast and subsequently reducing milk removal and production. In addition, nipple confusion or "nipple addiction" to an artificial nipple is a risk in selected babies. The healthy

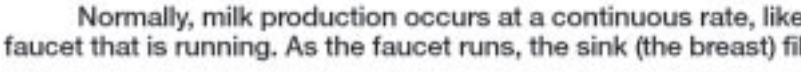

FIGURE 3. In addition to breastfeeding, a commercial "supplementer" is used to deliver supplemental nutrients to an infant delivered at 24 weeks' gestation and weighing 745 g. Postconceptual age of the infant in this photo is 36 weeks. Photo courtesy Nancy G. Powers, MD.

FIGURE 4. A home-made supplementer device uses a red nipple cut to allow passage of a #5 french feeding tube. The tube's "hub" rests in the milk. The rubber band and safety pin around the bottle allow the device to be pinned to the mother's clothing.

TABLE 4. Breastfeeding in the Newborn Period

Signs of Good Breastfeeding
• Frequent feedings of 8 to 12 times every 24 hours (the baby does not have to take both breasts at each feeding)
• The baby is allowed to feed until finished on one side (time will vary greatly with each individual mother-baby dyad)
• Intermittent episodes of rhythmic sucking with audible swallows
• At least 1 to 2 wet diapers per day for the first 2 days (may be difficult to judge with disposable diapers; use cloth diapers or use a liner such as a paper towel)
• Pink urate crystals, if present, disappear after the third day
• Starting the third day, 4 to 6 wet disposable diapers or 6 to 8 wet cloth diapers every 24 hours
• A minimum of 3 to 4 bowel movements every 24 hours
• Stools should be about 1 tablespoon or larger
• After the third day, soft and yellow stools ranging from 4 (if large) to 10 (if small)
Breastfeeding Warning Signs (requires infant evaluation)
• Fewer than 6 wet diapers per 24 hours after the third day
• Dark black, green, or brown stools after the third day
• Fewer than 3 or 4 yellow stools (from the fourth day to the fourth week)
• Fewer than 8 feedings in 24 hours (the baby does not have to take both breasts at each feeding)
• The baby seems to be nursing continuously, always hungry, and never satisfied
• The baby is exceptionally "good," rarely crying and consistently sleeping more than 4 to 6 hours
• Milk comes in, but swallowing or gulping is not audible
• Milk does not seem to have come in by the fifth day
• Sore and painful nipples throughout most feedings
• Significant engorgement (breasts are very hard and do not soften after feeding)
• Average daily weight gain of less than 15 to 30 g (once the milk comes in)
• The baby has not regained birthweight by 10 days of age

term infant needs nothing more than breastfeeding.

For healthy term infants, situations that *do not* warrant supplementation include:

- A sleepy baby who has few feedings the first 48 hours
- Bilirubin levels between 12 and 20 mg/dL after 72 hours (the infant should be feeding well, having more than four yellow bowel movements per day, and having no hemolysis or other pathology)
- Nighttime fussiness or constant feeding for several hours
- Growth spurts

There are alternative management strategies for these situations (Table 5). The American Academy of Pediatrics (AAP) "discourages the interruption of breastfeeding in healthy term newborns. . . ."

Supplementation *sometimes* is necessary for the term infant in the first weeks of life. According to the World Health Organization (WHO), only mothers and infants who are ill fall into this category (Table 6), and supplementation indicates anything other than human milk.

In the United States, where there is not a strong breastfeeding culture and limited support, indications for supplementation must be placed in the context of the infant's overall status and a thorough breastfeeding evaluation. If the infant is stable, skilled assistance with positioning, latch-on, relaxation, and milk ejection may obviate the need for supplements.

If feeding still is not effective after skilled assistance, indications for supplementation might include those listed in Table 7. It may be difficult to pump colostrum (colostrum is obtained most easily by hand expression), but once lactogenesis has occurred, the mother can express her own milk to use as a supplement. Preferably, the supplements would be given at the breast by using a "supplementer." Cup feeding also is a good option for preterm or ill infants because the cup is noninvasive and will stimulate the rooting reflex and horizontal tongue movements similar to that seen with suckling at the breast (Fig. 2).

Painful Feedings

Persistent pain during breastfeeding is not normal. During the first 2 weeks, brief discomfort can occur for a minute or so when the newborn is latching-on. If pain continues after the initial latch-on, the infant should be removed and reattached to ensure proper latch-on, let-down reflex, and swallowing. If pain arises during the course of feeding, the baby should be removed and switched to the other breast if still hungry.

Another cause of sore nipples during the first few days is infant oral-motor dysfunction (abnormal suck pattern). The pediatrician should examine the infant completely and ensure that positioning and latch-on are optimal. After feeding, the mother's nipple may appear creased, ridged, flattened, pointed, or otherwise misshapen. The diagnosis and treatment of breastfeeding problems related to oral-motor dysfunction require consultation with

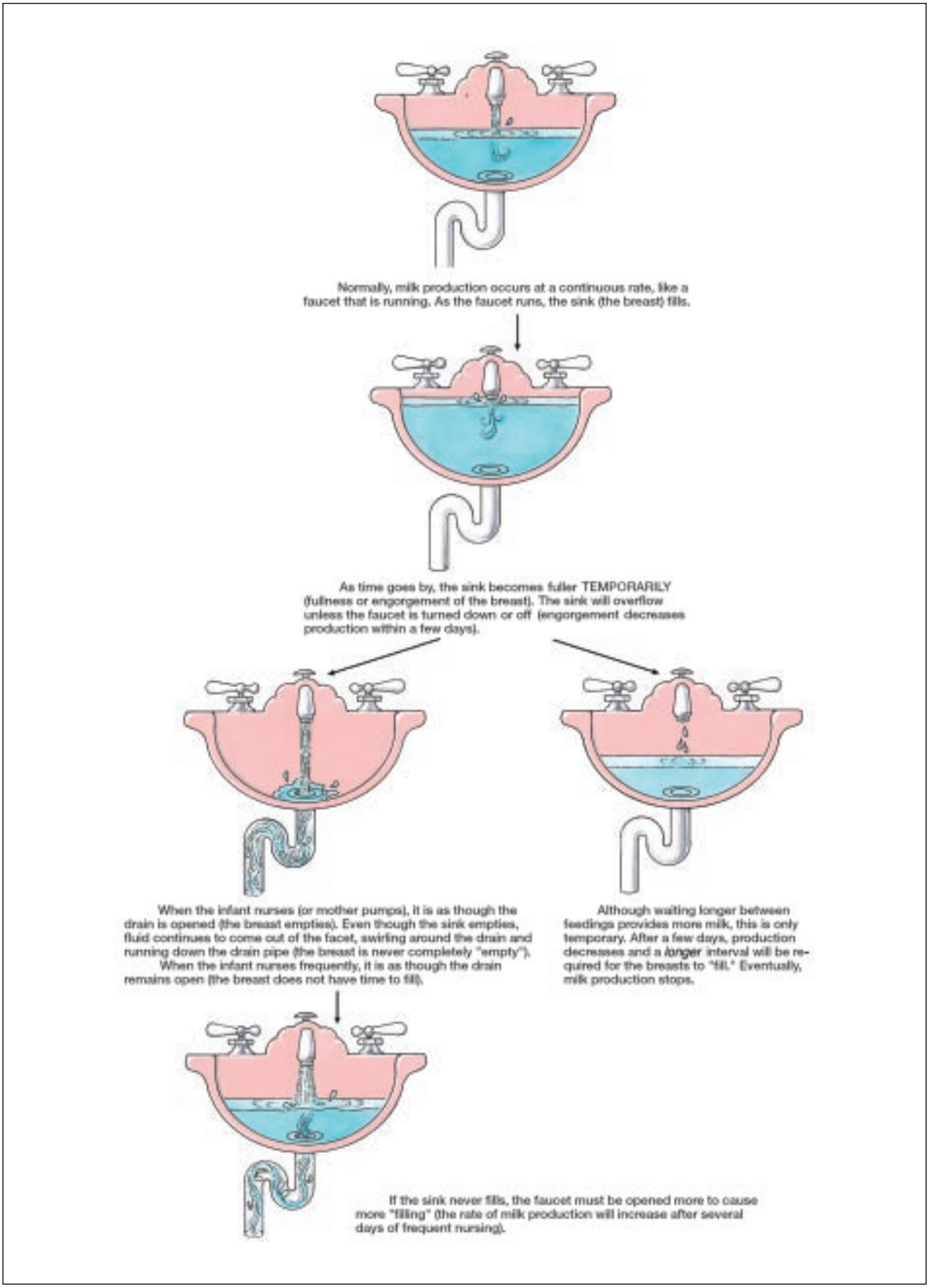

FIGURE 5. Frequent removal of milk from the breast stimulates milk production. This analogy with a sink can help parents understand the importance of frequent milk removal by feeding or pumping. Illustration by Marcia Smith.

BABY'S NAME: Marci DATE: 7/29/96 BABY'S AGE: 3 days

TIME	BREAST	(OTHER)	(AMOUNT)	WET DIAPERS	STOOLS* SIZE/COLOR	COMMENTS
06:00 AM						
07:00	√			√		ate well
08:00						
09:00	√				Med/green	
10:00						
11:00						
12:00 NOON						(mom & baby fell asleep!)
1:00 PM	√			?	Med/y-green	
2:00						
3:00						
4:00	√			√		
5:00	√				sml/yellow	
6:00	√				sml/yellow	eating constantly
7:00	√					
8:00	√					finally went to sleep
9:00						
10:00						
11:00						
12:00 MIDNIGHT				√ (soaked)	sml/yellow	
01:00 AM						
02:00	√					
03:00						
04:00	√			?	med/yellow	
05:00						

KEY TO STOOL DESCRIPTION:
Lg = 2 or more tablespoons ***Sml = 1 teaspoon*** ***Dk = very dark*** ***Br = brown***
Med = 1 tablespoon ***Spt = spot*** ***Gr = green*** ***Y = yellow***

FIGURE 6. Sample breastfeeding diary.

a knowledgeable and skilled professional (lactation consultant or specialist, often in conjunction with an infant feeding specialist).

Later in lactation, *Candida* infection of the nipple/areola complex may present as new onset of sore nipples or breast pain (the pain often is described as having a burning or stabbing quality). The clinical diagnosis is made when there is a preceding history of antibiotic usage, thrush (infant) or dermatitis (infant), or maternal candidal vaginitis in combination with maternal nipple pain and/or dermatitis. Maternal physical findings can include normal appearance, mild erythema of the nipples, erythematous scaling, or a florid erythematous rash of the nipple/areola complex. Occasionally the mother will have either satellite lesions on the breast or intertrigo. Candidal dermatitis frequently is complicated by cracking or fissuring of the nipples.

When the pediatrician diagnoses oral thrush (with or without symptoms in the nursing mother), treatment of both mother and infant is essential to prevent the "ping pong" passage of the infection. Conversely, if the mother presents with clinical findings of yeast infection of the breast or nipples, the pediatrician must treat her (or ensure treatment by her physician) as well as the infant (with or without clinical thrush). The infant is treated with oral nystatin ("painted" onto the oral surfaces) after every other feeding for 14 days. The mother should be treated with nystatin or clotrimazole cream rubbed well into the nipple/areola after each feeding for a minimum of 14 days. Other sites of candidiasis also must be treated (maternal vaginitis or infant diaper dermatitis). Meticulous attention must be given to eradicating *Candida* from any feeding equipment, breast pumps, pacifiers, toys, towels, bed linens, nightclothes, and bras. Longer treatment frequently is necessary if the condition has become well established prior to treatment. Recently some practitioners have started treating chronic yeast of the maternal breasts and nipples with oral fluconazole while the infant continues to breastfeed (personal communication).

Pacifiers

Although many newborns are sleepy, some are wakeful and seem to require substantial sucking. There are several risks to introducing paci-

TABLE 5. Alternatives to Supplementation in the Early Neonatal Period

NEWBORN BEHAVIOR/FINDING	SUGGESTIONS
Immediate breastfeeding after delivery; baby not interested	Minimal/gentle oral suctioning at delivery. Leave infant with mother, skin-to-skin for the first few hours; infant may take up to 1 hour to show interest in actual feeding. Delay procedures such as vitamin K administration and eye prophylaxis.
Infant sleepy during the first 24 to 48 hours	Keep baby skin-to-skin, in diaper only (baby probably will sleep a great deal). Watch for early feeding cues, and when present, awaken infant and put to breast. Gently stimulate infant if sleepy at breast; rub hands, feet, head. Do not force infant to breast if it is uninterested or crying. NO SUPPLEMENTS ARE NECESSARY; REASSURE THE PARENTS. Baby should start waking frequently by the third day or be awakened.
Infant fussy and acts hungry all of the time during the first few days	Evaluate latch-on and position. Facilitate milk ejection reflex: skin-to-skin contact in center of chest before putting baby to breast; warm moist compresses to breasts; relaxation techniques (deep breathing, visual imagery, shoulder massage by family member or nurse). Allow unlimited feeding on one side as long as it is not painful. Instead of pacifier, help baby find its own hand or let baby suck on parent's finger.
Baby jaundiced, bilirubin <25 mg/dL (day 3 or later), and no hemolysis	All above strategies are appropriate. See AAP Practice Parameter (Suggested Reading).
Baby awake and fussy at night	Keep lights low. Let the baby sleep with parent. Skin-to-skin contact.
Baby cries at the breast and will not latch on in the first few days	Examine baby for injury (severe bruising of head, forceps injury over mandible, fractured clavicle, oral injury from suctioning, other). Erect nipple by stimulating it; hand express some colostrum onto the nipple; compress breast to create more surface for infant to grasp. Do not push or force baby onto the breast; console. Last resort: Try using some drops of glucose water on the nipple or use a "supplementer" to get baby started.
Growth spurts: Previously satisfied (and growing) infant is hungry all of the time; mother doubts her milk is sufficient. Infant is not ill.	Feed as often as the baby requests; try to obtain extra household assistance. Do not give other liquids or foods. Condition usually lasts 2 to 7 days.

fiers to term infants during the first few weeks of life: 1) The infant may substitute nonnutritive sucking for milk intake at the breast, resulting in poor weight gain; 2) The pacifier can become a source of nipple confusion; and 3) Use of a pacifier may reinforce abnormal sucking in infants who have oral-motor dysfunction. The infant sometimes can be calmed and soothed, with close body contact, with or without suckling, a natural function of the breasts. Infants often will suck on their own fist, hand, fingers, or thumb to self-soothe.

Pacifier use has strong cultural underpinnings; it may be a marker for breastfeeding problems rather than a cause of the problems. After breastfeeding is well established, some parents may choose to use a pacifier, even though most studies examining pacifier use for term infants relate a number of potential negative consequences, including shorter duration of breastfeeding, increased incidence of otitis media, increased carriage of oral *Candida* and other pathogens, and orthodontic problems. Preterm infants benefit from nonnutritive sucking during the period of time that they are unable to take oral feedings.

Early Discharge and Breastfeeding

Over the past several years, increasing attention has focused on "failed breastfeeding" ("breastfeeding malnutrition," "breastfeeding morbidity," extreme weight loss with hypernatremic dehydration or hyperbilirubinemia). The increased frequency of this syndrome probably is multifactorial, including shortened hospital stays, economic pressures to minimize costs of extra office visits, and increased initiation of exclusive breastfeeding without the sociocultural and health-care supports that provide a safety net for the dyad. Infants between 35 and 37 weeks' gestation (who probably did not actually fulfill requirements for early discharge) appear to be at particular risk for this complication.

Studies of effects of early discharge are inconclusive. Hospital-based reports of readmission are primarily retrospective, case reports are difficult to put into perspective,

TABLE 6. Acceptable Medical Reasons for Supplementation*†

• Birthweight <1,500 g or gestation <32 weeks
• Small for gestational age with potentially severe hypoglycemia
• Severely ill mother (eg, psychosis, eclampsia, or shock)
• Inborn errors of metabolism (eg, galactosemia, phenylketonuria, maple syrup urine disease)
• Acute water loss
• Mothers taking contraindicated medication when breastfeeding (rare)

Supplementation indicates liquids or foods other than human milk. In most cases, mother's milk supply should be maintained.
†Adapted from The Global Criteria for the WHO/UNICEF Baby Friendly Hospital Initiative.

TABLE 7. Possible Indications for Early Supplementation After Complete Evaluation of Mother and Infant and Breastfeeding Observation*

Infant indications
• Hypoglycemia documented by blood glucose measurement (not Dextrostix®) after infant has had opportunity to suckle
• Significant dehydration
• Weight loss of 8% to 10% accompanied by delayed lactogenesis (day 5 or later)
• Delayed bowel movements or dark stools at day 5
• Insufficient intake despite an adequate milk supply
• Hyperbilirubinemia related to poor intake (breastfeeding evaluation and management has occurred and infant is unable to sustain feedings at the breast)
• Prematurity/low birthweight necessitates fluids/calories, and mother is not available or is unable to express sufficient quantities for the baby's immediate needs
Maternal Indications
• Delayed lactogenesis (day 5 or later) and signs of infant problems
• Delayed lactogenesis and inconsolably hungry infant
• Intolerable pain during feedings
• Unavailability of mother due to severe illness or geographic separation
• Primary glandular insufficiency (primary lactation failure), as evidenced by poor breast growth during pregnancy and minimal indications of lactogenesis
• Retained placenta causing delayed lactogenesis (lactogenesis probably will occur after placental fragments are removed).
• Sheehan syndrome (postpartum hemorrhage followed by absence of lactogenesis)

Supplementation indicates expressed human milk, fortified human milk, or formula, preferably given by "supplementer."

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cost/benefit analyses tend to favor overall cost savings above individual episodes of readmission, and every hospital has a different mechanism for follow-up after discharge. Thus, standards do not exist. Two separate sites of a large health maintenance organization (HMO) have documented independently an overall reduction in costs of hospital readmission when breastfeeding promotion, early discharge, and consistent follow-up occurred in the context of a lactation program (personal communication).

For infants discharged prior to 48 hours of age, the AAP now recommends follow-up by a health professional within 48 hours and an office visit within 7 days instead of 2 weeks. Home visits are appropriate, given proper training and supervision of the home visitors. At these first follow-up visits, close attention must be given to both maternal and infant indicators of breastfeeding progress (Table 8); appropriate advice can be given only if the feeding has been observed and assessed by a knowledgeable clinician. Subsequent follow-up within 1 to 3 days is prudent to determine if interventions have been successful.

Complications

IN THE INFANT

Even when complications arise, such as prematurity, multiple gestations, or illness of mother or baby, it often is possible to continue breastfeeding or at least to maintain lactation until the baby can suckle at the breast. The immunologic advantages and nutritional aspects of human milk for the pre-term infant were addressed in "Breast-feeding Update 1: Immunology, Nutrition, and Advocacy" in the April 1997 issue of *Pediatrics in Review.* The following section offers suggestions for clinical assistance for mothers and infants who are hospitalized.

Preterm infants of fewer than 36 weeks' gestation frequently cannot sustain feedings at the breast, either because of significant medical problems that preclude feedings or because of immaturity of suck, swallow, and breathing reflexes. Women who have high-risk preg-

TABLE 8. Indicators of Breastfeeding Progress in the First Week of Life

INFANT	MOTHER
Physical examination: Alert, hydrated with moist tongue, vigorous and coordinated suck, mild-to-moderate icterus	Physical examination of breasts: No scabbed or cracked nipples, no severe engorgement, no erythema. May be tender to palpation due to fullness
Weight: Loss less than 8% of birthweight; gain of 15 to 30 g/d (after the milk comes in)	Temperature: Normal
Feedings: Minimum of 8 per 24 hours	Feedings: Comfortable
Bowel movements: At least 3 to 4 per day; yellow "milk stools" by day 3	Milk "comes in": Within 72 hours after delivery; breasts feel full and warm; milk may leak
Urination: At least 4 to 6 times per day after day 3	
Behavior: Hungry/alert periods alternate with content/sleepy periods	Milk let-down: Evident by infant swallows, milk leaking, softening of breasts after a feed
Breastfeeding observation: Infant is awake, roots eagerly, latches on easily, and quickly settles into feeding with rhythmic sucking and audible swallows	Breastfeeding observation: Mother handles infant confidently, positions him or her well, and appears relaxed during feeding. Milk let-down and audible swallows are noted by an experienced observer

nancies may be too ill to nurse their babies after delivery. Finally, the neonatal intensive care unit can be a daunting environment that presents numerous barriers to breastfeeding. Recognition of these barriers is the first step to helping mothers overcome them (see Table 9).

The primary goal is for the mother to develop and maintain an adequate milk supply until her infant can suckle. Skin-to-skin contact with the infant should begin as soon as possible, and the mother should begin expressing milk, preferably within the first 24 hours. Optimal routines for milk expression include: eight pumpings per 24 hours (seven are acceptable, but not truly physiologic because some longer intervals will elapse); use of a double professional electric pump if the woman is not proficient at hand expression; facilitation of let-down by relaxation techniques such as deep breathing, visual imagery, or relaxation tapes; and provision of a pleasant private place for women to express their milk. Milk collection and storage techniques are important for optimal delivery of nutrients. There is no scientific justification for routine microbiologic cultures of human milk, and the financial costs are exorbitant (a recent inquiry showed a range of $35.00 to $95.00 for a single culture).

Bottle feedings are unnecessary for care of the breastfed preterm infant, as validated by WHO/UNICEF in its specific reference in the "Ten Steps to Successful Breastfeeding" (see "Breastfeeding Update 1: Immunology, Nutrition, and Advocacy" in the April 1997 issue of *Pediatrics in Review*). An indwelling nasogastric tube may be left in place while the infant learns to suckle at the breast. Another alternative is to use oral feedings of expressed human milk, given by cup, spoon, or supplementer. The staff of the intensive care unit must be trained to provide practical assistance with feedings under these special circumstances.

IN THE MOTHER

Infections

The complications that generate the most concern and controversy are those associated with infectious diseases or drug use in lactating women. Most infections in the mother pose little risk to the healthy term infant, with the notable exceptions of human immunodeficiency virus (HIV) I and II, human T-lymphotrophic virus (HTLV) I and II, *active* tuberculosis, and active herpes simplex virus (HSV)-1 lesions *on the breast.* (Little information is available regarding the risk of transmission of hepatitis C via human milk, but there are no reported cases at this time. As of March 1997, the Centers for Disease Control and Prevention states that if a woman has active hepatitis C at the time of delivery, "there is no reason to recommend against breastfeeding." Cracked or bleeding nipples are of theoretical concern.)

For each of these infections, several considerations must be addressed, realizing how rapidly information is changing: 1) What is the precise risk to the infant of acquiring the disease (as opposed to carriage or exposure)? 2) What are the specific benefits of breastfeeding to the infant? (Human milk contains antiviral properties, some of them specific to HIV.) 3) What other risks are posed to the infant by bottle feeding in his or her particular environment? 4) What therapies are available to prevent or treat the infection? 5) Is partial breastfeeding an option (eg, when one breast has an HSV-1 lesion, but the other is completely clear)? 6) Is temporary cessation of breastfeeding an option (eg, expressing and discarding milk until sufficient antituberculous treatment)? Vigilance is required to track new developments in these situations to evaluate reports critically, to weigh the known benefits of breastfeeding with the potential risks of acquiring a serious illness, and to

TABLE 9. Overcoming Barriers to Breastfeeding in the Neonatal Intensive Care Unit

BARRIERS	STRATEGIES
Maternal transport, parents far from home, isolated from support systems	Involve social work, lactation consultant, parent support groups
Mother did not decide about mode of feeding prior to preterm delivery	Provide information to assist in decision-making
Mother-infant separation, no suckling	Begin regular milk expression as soon as possible
Lack of privacy for pumping or feeding inhibits let-down reflex	Find space for women to pump/feed their infants where interruptions are minimized
Maternal fatigue, lack of sleep, frequent trips to NICU, delay in postpartum recovery	Emphasize that maternal recovery and health are important to the entire family; have a comfortable place for parents to rest, wait, or room-in
Preterm or ill infant cannot breastfeed for 2 to 3 months or longer	Initiate skin-to-skin contact as early and frequently as possible. Involve parents in as many other aspects of infant care as possible
Pumping schedule difficult to maintain; milk supply starts to decline	Acknowledge the difficulties; praise mother for her efforts; educate mothers to ask for assistance early if milk supply is declining (don't wait more than 2 to 3 days to ask for assistance)
Ineffective pumps appear to work initially but over an extended period of time do not maintain adequate supply	Counsel mothers about professional pumps; help mothers obtain a professional pump for home use
Invasive procedures may cause infant feeding aversion	Provide developmental support and adequate pain medication during procedures; involve lactation consultant or infant feeding specialist knowledgeable about breastfeeding
NICU environment can overstimulate the preterm infant, causing shutdown for feeding	Provide a comfortable private room for feeding when infant's condition permits
Prominence of bottle-feeding; breastfeeding not promoted	Physician should inform parents of the advantages of human milk, so that an educated decision is possible
Bias of individual care providers that breastfeeding is not really important	Have written hospital/NICU policy to promote breastfeeding. Obtain administrative support for and enforcement of the policy (performance evaluations)
Mixed messages regarding relationship of breastfeeding/human milk to jaundice	Make no mention of this connection unless (which should be rare) heating mother's own expressed milk (56˚C for 20 min) is an option for jaundice
Necessity for supplementation (protein, calories, minerals, vitamins) for very low birthweight infants (<1,500 g) can be another source of mixed messages	Emphasize the positive attributes of human milk, particularly the immune and gastrointestinal trophic properties. Use of hindmilk can provide extra caloric density.

help breastfeeding mothers make informed decisions. For an in-depth discussion of these issues, see Lawrence as well as Ruff in Suggested Reading.

Obtaining a mother's milk for her own child should be emphasized for multiple reasons. The mother's exposure to illness triggers the immune response that ultimately is conferred to the infant via the entero- or bronchomammary pathway (see "Breastfeeding Update 1: Immunology, Nutrition, and Advocacy" in April 1997 Pediatrics in Review). The unique nutritional value of a mother's milk for her own infant also is important. No expensive testing of milk or pasteurization is necessary.

If donor milk is used, donors must be screened carefully, and milk should be pasteurized to kill microorganisms (usually done by a milk "bank" with well-established procedures). Unfortunately, the pasteurization process will reduce immune properties and alter the nutritional content somewhat. Despite these drawbacks, donor milk is a valuable option under certain circumstances. The issues surrounding donor milk and milk

banking are discussed thoroughly in Lawrence's text (see Suggested Reading).

Drug Use

When physicians prescribe medications to breastfeeding mothers, they are concerned about possible side effects to infants. Drugs of abuse also may be of concern. Therefore, it is crucial for pediatricians, obstetricians, and family physicians to have a rational approach to medication questions, have access to relevant information, and have a telephone resource that is knowledgeable in this area. The AAP publishes a compendium of drug use during breastfeeding (see Suggested Reading). Frequently, a local poison center or drug information center will be able to assist. The following approach by Anderson (Suggested Reading) is encapsulated with his permission.

Drugs given to mothers by various routes pass into the maternal bloodstream in variable amounts and bind to protein at variable percentages. Passage of the drug from the bloodstream into human milk is influenced by molecular size, pH of milk, pKa (drug dissociation constant) of the drug, fat solubility, and possibly transport mechanisms. Plasma pH is fairly constant at 7.4, while milk pH can vary from 6.8 to 7.3; the direction of the gradient, as well as the amount of drug diffused will vary according to the acidity and alkalinity of the drug in relation to the plasma pH and milk pH. Once a drug enters milk, it may back-diffuse, causing levels to fluctuate over time.

The amount of drug ingested by the infant depends on the concentration of drug in the milk, the frequency of nursing, and the volume of milk the infant drinks. Once in the intestinal tract, drug absorption by the infant is influenced by oral bioavailability and age of the infant (gestation, if preterm). The drug then enters the infant's bloodstream, where it is subject to metabolism (active or inactive metabolites may be generated). Because of the multiple steps in drug absorption and metabolism, most drugs reach the infant's bloodstream in only a small percentage (typically, <2%) of the mother's dosage.

With an understanding of this process, it is important for the mother to know that when she must take medication, there usually are options that are safe during lactation and that can help to preserve breastfeeding. The following guidelines can be applied when breastfeeding mothers need advice:

1. If it is not absolutely necessary for the mother to take medication, she could do without, trying instead nonmedicinal measures for symptomatic relief (eg, humidification or saline for nasal congestion, heat and massage for muscle pain).
2. Investigate whether the course of medication can be delayed safely until the child is older, so that the infant is more mature and the length of breastfeeding can be extended (eg, radioactive I-131 for thyroid ablation might be delayed while using propylthiouracil and propranolol; treatment of extensive condyloma acuminata might be delayed to avoid systemic absorption of podophyllin).
3. If medication is necessary, use local or topical preparations that have a minimal chance of entering the bloodstream or use oral preparations that have minimal absorption in the gastrointestinal tract (eg, oxymetazoline nasal spray instead of oral decongestants/antihistamines, topical or inhaled steroids instead of oral steroids, sucralfate instead of cimetidine).
4. If medication is necessary but requires caution in nursing mothers, try to substitute a drug that has less risk of side effects or is known to be tolerated in children (eg, long-acting benzodiazepines such as diazepam and chlordiazepoxide may cause sedation in the breastfed infant, but short-acting lorazepam and oxazepam are acceptable).
5. Within a particular class of drug, some may enter human milk at substantially lower amounts than others or there may be a larger base of experience or research (for lactating women) on selected drug(s) in a particular class. Either of these factors probably would favor use of the "safer" alternative if the therapeutic effect in the mother is similar (eg, ibuprofen is preferable to other nonsteroidal anti-inflammatory drugs; propranolol is preferable to atenolol, which has been reported anecdotally as associated with apnea and cyanosis in the newborn period).
6. Formulation and dosage of required medications may be manipulated to reduce peak drug levels in milk at the time of actual feedings. Generally speaking, shorter half-lives (more frequent dosing) and timing of the dose before the longest sleep period (in older infants, since newborns are feeding around the clock) will minimize the intake and accumulation of drug by the child (eg, tricyclic antidepressants may be given as a single dose at bedtime).
7. If the mother requires a drug that is contraindicated, consider an intensive short course of therapy, during which time she can pump and discard the milk, perhaps interrupting breastfeeding for only 1 or 2 days (eg, metronidazole as a single 2-g dose for trichomoniasis). Many breastfeeding women are motivated to pump for longer periods if really necessary.
8. For some conditions, drugs are required that are contraindicated; this may require complete cessation of breastfeeding. These situations are rare and usually mean that the mother's health is in serious jeopardy from her illness (eg, cancer chemotherapy or radioactive pharmaceuticals).

Table 10 lists some of the medications used most commonly and categorizes them according to their utility and safety in the lactating woman.

Summary

Breastfeeding encompasses the anatomy, physiology, psychology, and social constructs of both mother and infant. It takes time for early breastfeeding to become established while mother and infant are learning the process. When pathology is present, complex situations arise

TABLE 10. Use of Drugs During Lactation*

Contraindicated. These drugs should not be used during lactation. If they are essential to the mother's health, breastfeeding should be discontinued temporarily or permanently.

- Amantadine†
- Amiodarone
- Antineoplastic agents
- Bromide
- Chloramphenicol§
- Cocaine
- Dipyrone (in Mexican drugs)
- Gold salts
- Indandione anticoagulants (eg, phenindione)
- Iodide (including topical forms)
- Metamizol (same as dipyrone)
- Metronidazole§
- Radiopharmaceuticals (withhold breastfeeding temporarily)
- Salicylates (large doses)

Potentially Hazardous. Although not generally contraindicated, these agents should be used with caution and avoided if possible, particularly while breastfeeding a newborn.

- Acebutolol
- Alcohol (especially large amounts)
- Antihistamine/Decongestant combinations†
- Atenolol
- Benzodiazepines (lorazepam, oxazepam preferred)
- Chlorthalidone†
- Clindamycin
- Clonidine†
- Contraceptives, estrogen-containing†
- Doxepin
- Ergotamine
- Ethosuximide
- Fluorescein
- Fluoxetine
- Lindane
- Lithium
- Methimazole
- Nadolol
- Narcotics (in addicts or with therapeutic doses in first 10 days postpartum)
- Nicotine/Smoking†
- Nitrofurantoin
- Phenobarbital (anticonvulsant dose)
- Piroxicam
- Quinolone antibacterials (norfloxacin preferred)
- Reserpine
- Sotalol
- Sulfonamides, long-acting
- Thiazide diuretics, long-acting or in high doses†

Probably Safe in Usual Doses. Data are insufficient to ensure that these agents have no adverse effects in breastfeeding infants; if these effects occur, they probably are infrequent or mild. There is a potential for rare allergic or idiosyncratic reactions.

- ACE inhibitors (eg, enalapril)
- Aminoglycoside antibiotics
- Anticholinergic agents
- Anticonvulsants (except ethosuximide and phenobarbital)
- Antihistamines
- Antitubercular agents
- Azathiopine (immunosuppression following organ transplantation)
- Barbiturates (except phenobarbital)
- Butyrophenones (eg, haloperidol)
- Decongestants, oral†
- Ergonovine (short courses)†
- Fluconazole
- Histamine H2-receptor antagonists (famotidine preferred)
- Metoclopramide (10 to 14 days)
- Nonsteroidal anti-inflammatory agents (ibuprofen preferred)
- Oxazepam
- Phenothiazines
- Propylthiouracil
- Quinidine
- Salicylates (occasional use)
- Spironolactone
- Sulfisoxazole
- Terfenadine
- Tetracyclines (2 weeks or less)
- Thiazide diuretics, short-acting (low doses)
- Tricyclic antidepressants (nortriptyline, desipramine preferred; avoid doxepin)
- Verapamil

Safe in Usual Doses. Although the potential for rare allergic or idiosyncratic reactions should be kept in mind, usual doses pose little risk for the breastfed infant.

- Acetaminophen
- Antacids
- Caffeine
- Cephalosporins
- Clotrimazole
- Contraceptives, progestin only
- Corticosteroids
- Decongestant nasal sprays
- Digoxin
- Erythromycin
- Flurbiprofen
- Heparin
- Inhalers, bronchodilators, corticosteroids
- Insulin
- Labetalol
- Laxatives, bulk-forming and stool-softening (eg, psyllium, docusate)
- Lidocaine
- Magnesium sulfate
- Methyldopa
- Methylergonovine (short courses)
- Metoprolol
- Miconazole
- Penicillins
- Propranolol
- Theophylline
- Thyroid replacement
- Vaccines
- Vancomycin
- Warfarin

Compiled by Philip Anderson, PharmD, Director, Drug Information Service, University of California, San Diego, CA.
†***Drug also may inhibit lactation.***
§***In situations where bottle feeding threatens the infant's life, breastfeeding may be undertaken cautiously.***

Sources: Knoben JE, Anderson PO.* Handbook of Clinical Drug Data. *7th ed. Hamilton Press; 1993; Anderson P. Drug use during breastfeeding.* Clin Pharm. *1991;10:596–624; UCSD Drug Information Service.

Note: The information contained in this table is time-limited. It is current and accurate as of 9/95. For use beyond that date, review and updating may be necessary.

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that require significant clinical expertise.

Pediatricians are crucial to the success of early breastfeeding through both advice and clinical care. A confident, positive attitude coupled with knowledgeable, concrete actions can maximize the impact of physicians. Decisions, policies, and patient care that demonstrate knowledge and commitment can help women to achieve breastfeeding goals. This, in turn, will allow children to benefit fully from the numerous advantages that breastfeeding and human milk have been proven to provide.

SUGGESTED READING

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PIR QUIZ

1. Breastfeeding difficulties often can be anticipated and surmounted by obtaining a thorough maternal history and making a direct inspection of breasts. In general, breastfeeding failure is *most* likely to accompany a previous history of:
   A. Augmentation surgery.
   B. Breast hematoma.
   C. Fibroadenoma excision.
   D. Mastitis.
   E. Reduction surgery.

   Successful breastfeeding of the hospitalized very low birthweight infant requires overcoming a number of significant obstacles. Match each numbered barrier listed below with the most appropriate corresponding lettered strategy.

2. Infant unable to feed orally for 2 to 3 months.
3. Initial mother/infant separation.
4. Nutritional limitations of human milk for very low birthweight infant.
5. Overstimulating neonatal intensive care unit environment.
6. Weak suck.

   A. Regular milk expression at approximately 3-hour intervals.
   B. Private room for feeding stable infant.
   C. Selective use of hindmilk.
   D. Expressed human milk delivered by cup.
   E. Early and frequent skin-to-skin contact.

7. Early identification of a breastfed infant receiving inadequate intake is critical to limit morbidity and optimize the chance for successful breastfeeding. Given a full-term gestation, an uncomplicated delivery, normal intrauterine growth, and an uneventful nursery stay, same-day clinical evaluation is required for:
   A. A 4-day-old infant who has had eight soft yellow stools in the past 24 hours.
   B. A 4-day-old infant who rarely cries and has had one large, dark stool since discharge.
   C. A 3-day-old infant who is breastfeeding 10 times per day.
   D. A 2-day-old infant who has had only one wet diaper the first day at home.
   E. A 2-day-old infant who has spent only a total of 4 hours awake on the first full day at home.

8. With thoughtful selection and delivery of therapy, maternal medication only rarely should preclude breastfeeding. An example of a drug that is considered *safe* in usual doses is:
   A. Amantadine.
   B. Azathioprine.
   C. Labetalol.
   D. Metronidazole.
   E. Nicotine.

9. Most maternal infections are compatible with continued breastfeeding. However, breastfeeding is *contraindicated* if the mother has:
   A. Acute Epstein Barr virus infection.
   B. Acute hepatitis A virus infection.
   C. Asymptomatic human immunodeficiency virus infection.
   D. Chronic hepatitis B virus infection.
   E. Labial herpes simplex 1 virus infection.

American Academy of Family Physicians

Promoting and Supporting Breast-Feeding

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The family physician can significantly influence a mother's decision to breast-feed. Prenatal support, hospital management and subsequent pediatric and maternal visits are all-important components of breast-feeding promotion. Prenatal encouragement increases breast-feeding rates and identifies potential problem areas. Hospital practices should focus on rooming-in, early and frequent breast-feeding, skilled support and avoidance of artificial nipples, pacifiers and formula. Infant follow-up should be two to four days post-discharge, with liberal use of referral and support groups, including lactation consultants and peer counselors. (Am Fam Physician 2000;61:2093-100,2103-4.)

Breast-feeding is the best form of nutrition for infants.[1,2] Family physicians can have a significant impact on the initiation and maintenance of breast-feeding, if they have sufficient knowledge of breast-feeding benefits and the necessary clinical management skills or habits.[3] In one recent study,[4] only 25 percent of mothers reported discussing breast-feeding with health care professionals at the two-week visit. This same study demonstrated that encouragement by health professionals could have a significant impact on breast-feeding rates. Unfortunately, family physicians are no better than their peers in other specialties in promoting breast-feeding.[5] In this article, we present strategies for the family physician to promote and support breast-feeding.

To effectively promote breast-feeding, the physician should educate all prospective mothers about the health benefits of breast-feeding as well as the risks associated with formula *(Table 1)*.[1-11] The protective benefits of breast-feeding are confirmed in studies performed in industrialized and developing countries, as well as across all socioeconomic strata.[12] Discussing other concerns can also be useful in promoting breast-feeding *(Tables 2[13-16] and 3)*.

Prenatal Care

History

Breast-feeding should be discussed at the first and subsequent prenatal visits. Most women will have made a decision about breast-feeding early in pregnancy.[17] Breast-feeding education that is given repeatedly in person can have a significant influence on breast-feeding outcomes and appears to be superior to only postnatal support or only telephone support.[18]

The topic should be introduced with an open-ended statement such as, "Have you thought about how to feed your baby?" Tailor answers to the patient's background and use the opportunity to mention the risks associated with bottle-feeding *(Table 1)*. Any history of early weaning or breast-feeding problems in previous pregnancies is predictive of future difficulty and should be discussed with the patient and noted on the prenatal record.[19] A checklist that will ensure that all concerns are addressed should be an integral part of the prenatal record *(Figure 1)*.

Physical Examination

The physical examination is an opportunity to reassure the patient that her breasts are normal and that she will likely have no trouble producing enough milk. Inverted or flattened nipples can be ruled out by compressing below the areola to see if the nipple everts. Breast shells should not be used in the third trimester to promote correction of

TABLE 1
Relative Risk of Formula Feeding vs. Breast-Feeding

Illness	Relative risk
Allergies, eczema	2 to 7 times[1]
Urinary tract infections	2.6 to 5.5 times[6]
Inflammatory bowel disease	1.5 to 1.9 times[7]
Diabetes, type 1	2.4 times[8]
Gastroenteritis	3 times[1]
Hodgkin's lymphoma	1.8 to 6.7 times[9]
Otitis media	2.4 times[1]
Haemophilus influenzae meningitis	3.8 times[10]
Necrotizing enterocolitis	6 to 10 times[2]
Pneumonia/lower respiratory tract infection	1.7 to 5 times[1]
Respiratory syncytial virus infection	3.9 times[2]
Sepsis	2.1 times[11]
Sudden infant death syndrome	2.0 times[1]
Industrialized-world hospitalization	3 times[1]
Developing-country morbidity	50 times[1]
Developing-country mortality	7.9 times[1]

Information from references 1 through 11.

inverted nipples because their use has actually been shown to reduce the success of breast-feeding.[20] In the same study, exercises to evert the nipples were shown to have no effect on breast-feeding success.

Prenatal Breast-Feeding Promotion Checklist

Check all of the following that apply:

Past breast-feeding history

- ☐ Length of time each baby was breast-fed:
- ☐ Length of time each baby was exclusively breast-fed:
- ☐ Initial breast-feeding problems: sore nipples, sleepy baby:
- ☐ Subsequent problems: early weaning, nipple confusion:
- ☐ Family history of breast-feeding problems:

Current pregnancy

- ☐ Concerns of mother (see Table 3):
- ☐ Knowledge base of mother (see Table 2):
- ☐ Plans for work or school:
- ☐ Plans for pumping breasts:
- ☐ Plans for supplementation:
- ☐ When, if at all, patient plans to introduce bottle:
- ☐ Name(s) of support persons:
- ☐ Promote prenatal lactation classes:
- ☐ Record breast-feeding problems on chart with plan for referral and follow-up:

FIGURE 1. A checklist that can be used in the prenatal stage to promote breast-feeding.

Potential problems should be noted on the prenatal record, along with a plan for consultation with a lactation specialist.

Subsequent Prenatal Visits

Support from a significant other has been identified as the most important factor for those who chose to bottle-feed.[21] The patient's support person should be included in breast-feeding promotion efforts at every office visit. Knowing the mother's family and cultural background can assist the clinician in counseling the mother about breast-feeding.[22] Women who are poor, less educated, less than 20 years of age or from a minority or immigrant background are less likely to choose to breast-feed. Whoever comes to the prenatal visits with the mother is likely to be important in her decision to breast-feed.

Although early weaning or breast-feeding problems may have occurred in previous pregnancies, with education and support, current breast-feeding may be successful.

TABLE 2
Additional Benefits of Breast-Feeding

Promotes mother-infant bonding
Promotes uterine involution
Economical for family and society
Convenient
Better cognitive development in children[13]
Lower incidence of premenopausal breast cancer[14]
Lower incidence of premenopausal ovarian cancer[15]
Lower incidence of maternal osteoporosis[16]

Information from references 13 through 16.

TABLE 3
Perceived Barriers to Breast-Feeding

Loss of freedom
Embarrassment
Jealousy (paternal and sibling)
Difficulty returning to work or school
Physical discomfort
Weaning
Lack of confidence (afraid that baby is starving)
Perception that formula is equal to breast milk

Positive messages about breast-feeding should be evident in the physician's office. Staff should be trained to provide basic breast-feeding help. Literature and posters that promote breast-feeding can be prominently displayed in the office. All magazines and literature in the waiting room can be examined to ensure that there are no unwanted advertisements or promotions of formula. A recent study[23] showed that most physicians' offices distribute materials that violate the World Health Organization's International Code on the Marketing of Breast Milk Substitutes *(Table 4)*. A good source of materials that are available in English and other languages can be obtained from the local Women, Infants and Children (WIC) office, and examples are summarized in *Table 5*.

TABLE 4
WHO/UNICEF Code of Marketing of Breast Milk Substitutes

No advertising of breast-milk substitutes.
No free samples or supplies.
No promotion of products through health care facilities.
No contact between company marketing personnel and mothers.
No gifts or personal samples to health workers.
No gifts or pictures idealizing formula feeding, including pictures of infants, on the labels of the product.
Information to health workers should be scientific and factual only.
All information on artificial feeding, including labels, should explain the benefits of breast-feeding and the costs and hazards associated with formula feeding.
Unsuitable products should not be promoted for babies.
All products should be of a high quality and take into account the climatic and storage conditions of the country where they are used.

WHO = World Health Organization; UNICEF = United Nations Children's Fund.
Reprinted with permission from Lucey JF. Committee on Nutrition and the WHO code of marketing breast milk substitutes. Pediatrics 1981;68:430-1.

Hospital Care

Hospital routines significantly affect breast-feeding.[24] The World Health Organization (WHO), in conjunction with the United Nations Children's Fund (UNICEF), has published a hospital breast-feeding policy called the Baby Friendly Initiative.[25] The policy is intended for use in hospitals worldwide and is addressed to all personnel having patient-care responsibilities. The American Academy of Pediatrics (AAP) supports this initiative and has published guidelines for the pediatrician that reiterate the same recommendations and expand on them.[26] Although the American Academy of Family Physicians has a policy statement supporting breast-feeding, the group does not have published standards for the management of breast-feeding. The 12 recommendations in this article *(Table 6)* reinforce the guidelines from WHO and AAP, and are designed for the family physician to use during prenatal and postnatal care.

Early Breast-Feeding Attempts

New mothers should initiate breast-feeding as soon as possible after giving birth. When mothers initiate breast-feeding within one-half hour of birth, the baby's suckling reflex is strongest, and the baby is more alert.[27] Early breast-feeding is associated with fewer nighttime feeding problems and better mother-infant communication.[28] Babies who are put to breast earlier have been shown to have higher core temperatures and less temperature instability.[29]

Early breast-feeding is associated with fewer nighttime feeding problems, better mother-infant communication and less temperature instability in the newborn.

Nipple Confusion

Nipple confusion occurs when a baby has not had the opportunity to establish the correct mouth movements for proper breast-feeding. Early and subsequent use of pacifiers, water, glucose water and formula supplementation have been shown to promote early weaning and nipple confusion.[30,31] The frequent use of an artificial nipple early in life has been shown to promote a less effective mouth movement; this was demonstrated with ultrasonography over a decade ago.[32] For this reason, the physician should encourage the staff and the patient to address breast-feeding problems first, with direct observation of breast-feeding, before considering the use of supplementation.

A woman with normal breasts produces sufficient colostrum during the last trimester and at delivery to sustain twins or a large term baby until her milk comes in. With few exceptions, studies[1,30] have shown that formula samples in infant discharge packs shorten the duration of breast-feeding. For this reason, materials consistent with the WHO code[33] should replace commercial discharge packs *(Table 4)*.

Breast-Feeding on Demand and Rooming-In

Rooming-in and breast-feeding on demand should be an integral part of routine postpartum care. Breast-feeding "on demand" means feeding when the baby shows early signs of hunger, such as the rooting reflex, or when the baby is awake and his or her hands are coming to the mouth. Rooming-in allows mothers to respond to feeding cues much more effectively than a busy nurse could. Breast-feeding on demand promotes more frequent feeding, which prevents sore nipples, breast engorgement and early weaning.[34]

TABLE 5
Breast-Feeding Resources

AAP Breastfeeding Promotion in Pediatric Office Practices Program
Telephone: 847-228-5005, extension 4779
Web site: http://www.aap.org/visit/brpromo.htm

La Leche League
Telephone: 847-519-7730
Web site: http://www.lalecheleague.org

International Lactation Consultants Association
Telephone: 919-787-5181
Web site: http://www.ilca.org

Women, Infants and Children
Telephone: 703-305-2746
Web site:
http://www.fns.usda.gov/wic/menu/contacts/coor/coor.htm

AAFP breast-feeding support kit
Telephone: 800-944-0000
Web site: http://www.aafp.org/shop/926

AAFP breast-feeding policy statement
Telephone: 800-274-2237
Web site: http://www.aafp.org/policy/x1640.xml

AAP = American Academy of Pediatrics; AAFP = American Academy of Family Physicians.

Supporting Breast-feeding Postpartum

Early Prenatal Follow-Up

The AAP recommends a follow-up visit with an evaluation of breast-feeding at two to four days postdischarge for most newborns.[26] Detailed questions can prevent unintended weaning. Inadvertent weaning can occur because suckling on the bottle is easier, and milk comes out faster. A decrease in milk supply because of decreased suckling at the breast further worsens the cycle. Anticipatory guidance *(Table 7)* that can help prevent this problem would include informing parents that growth spurts frequently occur at two to three weeks, three months and six months of age but can occur at any time. Witnessed breast-feeding is an important

part of follow-up because many breast-feeding problems are caused by improper latch-on or positioning that can be detected and corrected[35] *(Figure 2).*

Tracking of Breast-Feeding

Although attempts have been made to quantify breast-feeding effectiveness using an observer and a numerical score, the reliability of such tools versus electronic scale data has been questioned.[36,37] A randomized controlled trial[38] recently showed that weighing the infant can be accurate if an electronic scale is used. Mechanical scales are inadequate to this task. Care should be taken to weigh the baby wearing only a fresh diaper for the pre-feeding weight, with the same diaper being on the baby for the postfeeding weight.

The baby should be given credit for 20 calories per 30 g of weight gain, although breast milk can have higher caloric content, especially milk expressed for premature babies by their mothers.[2] Babies should lose no more than 8 percent of their body weight after birth and should follow the appropriate weight curve thereafter *(Table 8).*

TABLE 6
Twelve Steps to a Lactation-Friendly Family Practice

1. Use a breast-feeding protocol in your practice that is communicated to all staff and partners.
2. Provide adequate training to implement your breast-feeding protocol. Promote hospital policies and insurance plans that do the same.
3. Inform all pregnant patients about the benefits and management of breast-feeding and the drawbacks of formula feeding.
4. Help mothers initiate breast-feeding within 30 minutes of birth.
5. Request at least two skilled nursing observations of lactation during the hospital stay.
6. Do a newborn examination in mother's room, showing her how well-designed her infant is for breast-feeding.
7. Encourage mother to room-in with infant while in the hospital and encourage feeding on cue demand.
8. Avoid the use of artificial nipples and pacifiers in breast-feeding newborns.
9. Recommend exclusive breast-feeding for the first six months, with a goal of a total of 12 months.
10. If mother or infant is hospitalized, evaluate lactation needs and arrange for milk expression if necessary.
11. Use lactation consultants liberally. Refer mothers to breast-feeding support groups.
12. Schedule an office visit at two to four days postpartum to evaluate lactation.

Adapted with permission from WHO/UNICEF. Protecting, promoting and supporting breastfeeding: the special role of maternity services. A joint WHO/UNICEF statement. Int J Gynaecol Obstet 1990;31(suppl 1):171-83, and American Academy of Pediatrics, Work Group on Breastfeeding. Breastfeeding and the use

of human milk. Pediatrics 1997;100:1035-9.

Referral to Lactation Consultants

Although prenatal education has been shown to affect the breast-feeding decision, in-hospital lectures alone do not measurably influence breast-feeding duration or satisfaction.[39] What is more important to success is direct, one-on-one observation and assistance of the breast-feeding mother and child by a knowledgeable person, a certified lactation consultant[40] or a peer counselor. Routine use of a lactation consultant after discharge in a general practice setting has been shown to be effective in prolonging breast-feeding.[41]

TABLE 7
Hospital Discharge Breast-Feeding Instructions

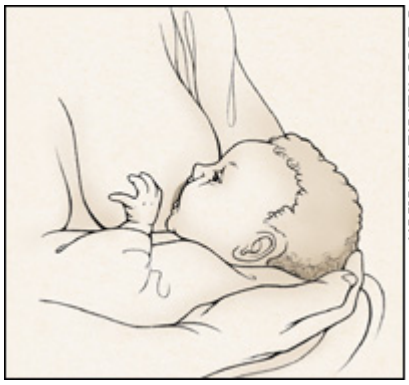
Feed the infant on demand--on "hunger cues."
Listen and feel for infant's swallowing.
Infant should regain birth weight by two weeks of age.
Avoid nipple confusion by adopting this policy: three to four weeks of exclusive breastfeeding, then no more than one bottle a day, using expressed breast milk.
Count wet diapers: one on day 1, two on day 2, three on day 3, six per day from day 6 on, with three or more stools per day.
Report any signs and symptoms of dehydration and jaundice.
Make use of lactation support telephone numbers.
Expect weight loss of <8 percent at the two- to four-day follow-up visit.

TABLE 8
Postnatal Breast-Feeding Promotion Checklist

Review prenatal breast-feeding checklist (see Figure 1).
Note any changes from initial interview.
Address any new concerns of the family.
Ensure less than 8 percent loss from birth weight.
Confirm appropriate weight gain:
- Regain birth weight by two weeks of age
- Acceptable weight gain of 10 g per kg per day (5 to 7 oz per week) is normal for the first 4 weeks.

Observe breast-feeding.
Inspect mother for sore nipples and examine infant.

Referrals should be made for nearly all cases of severe nipple erosion, relactation, milk supply problems, failure to thrive, multiple infants, premature babies and any problem that does not respond quickly to support by the family physician. Certified lactation consultants have been shown to be of benefit in routine use with low-risk patients, whether measuring clinical outcome, patient satisfaction or costs.[42] Referral sources are listed in *Table 5*.



Proper breast-feeding technique. The infant should be lined up: mouth, chin and umbilicus. The head is neutral, the mouth wide *(left).* Bring the infant to the breast. The gum line should overlap the areola as much as possible. The nipple should be straight back in the mouth, with the tip nestled into the infant's soft palate. The tip of the infant's nose and chin should touch the breast with equal pressure *(right).* The infant's lips are flanged, with the tongue protruding over the lower gum. **FIGURE 2.**

Breast-Milk Expression

Expressing breast milk is a skill that should be taught to all new mothers. Mothers should be encouraged to use only breast milk, not formula, when using bottles.

Bottle-feeding should be delayed for three to four weeks to prevent nipple confusion and early weaning.[30] After this time, nipple confusion and premature weaning seem to be less of a problem if bottles are limited to about one per day.[43] The clinician should routinely discuss bottle use and the issue of nipple confusion before discharge.

If supplementation is necessary, the baby should also be at the breast so that nipple stimulation occurs and nipple confusion is prevented.

The Decision to Supplement

The decision to supplement should weigh the immediate clinical benefit with the long-term risks *(Table 1).* When the mother is available to feed the baby, the supplementation method used should simulate full breast-feeding as much as possible.[2] With the baby at the breast during supplementation, nipple stimulation occurs, promoting better milk supply while preventing nipple confusion. The supplemental nursing system *(Figure 3)* and the periodontal syringe *(Figure 4)* allow the baby to be at the breast while supplementation is administered and are the preferred methods to use with the baby at the breast. Finger-, spoon- and cup-feeding are all alternatives to bottle-feeding that can be effectively used in the mother's absence.[33] Before prescribing alternative feeding methods, the physician should ensure that the staff members employing them have been properly trained. If an infant is being fed by gavage, it is better to supplement by mixing breast milk with formula because the breast milk

contains lipases that help with fat absorption.[44] In some situations it may be impossible for the mother to breast-feed. Discussions should be supportive so as not to induce guilt or depression.

Banked Milk

Banked milk should be considered when supplementation is necessary. Since the advent of human immunodeficiency virus (HIV) infection, banked milk is now pasteurized, and donors are screened for HIV, hepatitis and syphilis. Although a few biologically active components of human milk are lost in the pasteurization process, recent studies show minimal or no changes in such important components as fat content and antibacterial properties.[45]

FIGURE 3. Supplemental nursing system. Two tubes come from the bottom of the bottle. One tube is taped to an areola, with the tip of the tube protruding at the nipple. The other tube acts as a vent so air can enter the reservoir bottle.

Subsequent Hospitalization

When a mother or an infant is hospitalized, lactation should be continued if possible. At these times it is important to ask the mother in detail about her breast-feeding practices. Breast-feeding counseling when a baby is hospitalized for diarrhea has a positive effect on the rate of exclusive breast-feeding and prevents the continuation of diarrhea after discharge.[18]

We have found that a careful history taken during admission to the hospital can uncover unintended weaning. Lactation consultation during the hospitalization can help a mother resume later on.

Final Comment

FIGURE 4. Periodontal syringe that can be used in supplemental feeding of breast-feeding infants.

Breast-feeding has proved to be superior to artificial supplements for medical, financial, social and psychologic reasons. Nevertheless, some patients and a few clinicians subscribe to the concept that formula is as good as breast milk, or at least that it is "good enough." However, formula increases health risks to children when it unnecessarily replaces breast milk. The health care professional can play a key role in preventing illnesses by effectively supporting lactation.

The promotion and support of lactation should be a high priority for family physicians. To be effective in this effort, the clinician should focus on the issue from the preconception stage through pregnancy and delivery, and continue in subsequent infant care.

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• • • • • Journals, Articles and Newsletters

Abreast of Our Times
National Alliance for Breastfeeding Advocacy
254 Conant Rd.
Weston, MA 02493-1756
(newsletter)

Birth:Issues in Perinatal Care
Blackwell Science, Inc.
Commerce Place, 350 Main St
Malden, MA 02148
(quarterly publication on perinatal issues)

Breastfeeding Abstracts
La Leche League, International
1400 N Meacham Rd
Schaumburg, IL 60173
(quarterly annotated summary of breastfeeding research)

Breastfeeding Medicine
Academy of Breastfeeding Medicine
Mary Ann Liebert, Inc. publishers
140 Huguenot Street, 3rd Floor
New Rochelle, NY 10801-5215

Breastfeeding Review
Australian Breastfeeding Association
1812-1822 Malvern Rd
East Malvern, VIC 3145 Australia
(publication on lactation)

Journal of Human Lactation
Sage Science Press
2455 Teller Rd
Thousand Oaks, CA 91320
(quarterly peer reviewed journal on lactation; membership benefit of ILCA)

J of Mammary Gland Biology and Neoplasia
Plenum Publishing Corp.
233 Spring St
New York, NY 10013

Lactnet Archives
http://community.lsoft.com/archives/LACTNET.html

Pediatrics
American Academy of Pediatrics
PO Box 927
Elk Grove Village, IL 60009

• • • • • • • Organizations

Academy of Breastfeeding Medicine
191 Clarksville Rd
Princeton Junction, NJ 08550
Toll free (877) 836-9947 Local (609) 799-4900
www.bfmed.org

American Academy of Pediatrics
141 NW Point Blvd
Elk Grove Village, IL 60009-0927
800 433-9016
www.aap.org

Massachusetts AAP Chapter Breastfeeding Coordinator:
Susan Browne, MD, IBCLC
59 Lawrence St
Methuen, MA 01844
978 685-0977 brnfaap@msn.com

American College of Obstetricians and Gynecologists
409 12th St, SW
Washington, DC 20024
202 863-2591
www.acog.org

American Dietetic Association
American Dietetic Association
120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
312/899-0040
www.eatright.org

Baby Friendly USA
327 Quaker Meeting House Rd.
East Sandwich, MA 02537
508 888-8044
www.babyfriendlyusa.org

Baby Milk Action
34 Trumpington Street
Cambridge, CB2 1QY, UK.
From the UK phone: 01223 464420
From outside the UK phone +44 1223 464420
www.babymilkaction.org

Coalition for Improving Maternity Services
Coalition for Improving Maternity Services
PO Box 2346
Ponte Vedra Beach, FL 32004
Phone toll-free: 888-282-2467
www.motherfriendly.org

Doulas of North America
1100 23rd Ave East
Seattle, WA 98112
206 324-5440
www.dona.org

Healthy Mothers/Healthy Babies
409 12th St SW, Suite 309
Washington, DC 20024-2188
202 863-2458
www.hmhb.org

Human Milk Banking Association of North America (HMBANA)
1500 Sunday Drive, Suite 102
Raleigh, NC 27607
Phone: (919)787-5181 ext. 236
www.hmbana.org

International Board of Lactation Consultant Examiners
7245 Arlington Blvd. #200, Falls Church,
Virginia, 22042-3217
1 (703) 560-7330
www.iblce.org

International Childbirth Education Association
PO Box 20048
Minneapolis, MN 55420
612 854-8660

International Lactation Consultant Association
1500 Sunday Dr, Suite 102
Raleigh, NC 27607
919 861-5577
www.ilca.org

Massachusetts Breastfeeding Coalition
www.massbfc.org

Massachusetts Lactation Consultant Association
www.geocities.com/mlcaweb

La Leche League International
1400 North Meacham Rd
Schaumburg, IL 60173-4840
847 519-7730
www.lalecheleague.org

Massachusetts Department of Public Health
WIC Program and Breastfeeding Initiatives
250 Washington Street, 6th Floor
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617 624-6100
www.mass.gov/wic
Rachel Colchamiro, MPH, RD, CLC
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617 624-6153

Massachusetts Public Health Association
434 Jamaicaway
Jamaica Plain, MA 02130
(617) 524-6696
www.mphaweb.org

Maternal and Child Health Bureau
Health Resources Services Administration
Department of Health and Human Services
5600 Fishers Lane, Room 18A-39
Rockville, MD 20857
301 443-6600
http://mchb.hrsa.gov/

National Alliance for Breastfeeding Advocacy
Marsha Walker, RN, IBCLC
254 Conant Rd
Weston, MA 02493-1756
781 893-3553
www.naba-breastfeeding.org

Nursing Mothers' Council
PO Box 29
Newtonville, MA 02460
617 244-5102
www.bace-nmc.org

Study Group on Human Lactation and Breastfeeding
Ruth Lawrence, MD
University of Rochester Medical Center
Department of Pediatrics
601 Elmwood Ave, Box 777
Rochester, NY 14642
716 275-0088

Food and Nutrition Information Center
http://www.nal.usda.gov/fnic/

HRSA Information Center
http://www.ask.hrsa.gov

INFACT Canada
http://www.infactcanada.ca/index.htm

Lamaze International
http://lamaze-childbirth.com

Massachusetts Breastfeeding Coalition
www.massbfc.org

National Center for Education in Maternal and Child Health
http://www.ncemch.org

National Guideline Clearinghouse
http://www.guideline.gov

Texas Department of Health
http://www.tdh.state.tx.us/lactate/

UNICEF (United Nations Children's Fund)
http://www.unicef.org

WHO (World Health Organization)
http://www.who.ch/

• • • • Courses, Training, and Continuing Education in Lactation Management

Lamaze International
2025 M St NW, Suite 800
Washington, DC 20036-3309
800 368-4404

Breastfeeding Support Consultants
228 Park Lane
Chalfont, PA 18914
630 547-5057

Breastfeeding Support Consultants/Center for Lactation Education
44 N. Cornell
Villa Park, Illinois 60181
603-547-5057
www.bscenter.org

Bright Future Lactation Resource Center
6540 Cedarview Ct.
Dayton, OH 45459
937 438-9458

Evergreen Hospital Medical Center
12040 NE 128th St, Mailstop #37
Kirkland, WA 98034
206 899-3494

Healthy Children Project
327 Quaker Meeting House Rd.
East Sandwich, MA 02537
508-888-8044

International Lactation Consultant Association
1500 Sunday Drive Suite 102
Raleigh, NC 27607
919 861-5577
www.ilca.org

La Leche League International
1400 North Meacham Rd
Schaumburg, IL 60173
847 519-7730

Lactation Associates
254 Conant Rd
Weston, MA 02493
781 893-3553

Lactation Consultant Services
11320 Shady Glen Rd
Oklahoma City, OK 73162
405 722-2163
www.lactation-consultant-services.com

Lactation Education Resources
3621 Lido Place
Fairfax, VA 22031
703 691-2069
www.leron-line.com

Lactation Institute
16430 Ventura Blvd, Suite 303
Encino, CA 91436
818 995-1913

The Lactation Program at Presbyterian/St Luke's Medical Center
1719 E 19th Ave
Denver, CO 80218
303 869-2212

Nursing Mothers' Council
PO Box 29
Newtonville, MA 02460
617 244-5102

Texas Department of Health
1100 West 49th St
Austin, TX 78756
512 458-7111 or toll-free 888-963-7111

UCLA Extension Education Health Sciences
10995 Le Conte Ave, Room 711
Los Angeles, CA 90024-1333
310 825-8423
www.uclaextension.edu/

University of California at San Diego
Extension Health Sciences
9500 Gilman Dr, Mail Code 0176
La Jolla, CA 92093-0176
619 534-3400
www.ucsdextension.edu/

Vida Health Communications
Clinical Management of Breastfeeding for Health Professionals – video curriculum
800 550-7047

Wake Area Health Education
3024 New Bern Ave, Suite G03
Raleigh, NC 27610-1255
919 350-8547

Wellstart International
PO Box 80877
San Diego, CA 92103-0877
619 295-5192
www.wellstart.org

Wichita State University, School of Nursing
1845 North Fairmont
Wichita, KS 67260
316-978-5704 www.wichita.edu/

Your Rights
under the
Family and Medical Leave Act of 1992

Eligible Employee: Employees are eligible if they have worked for a covered employer for at least one year, and for 1,250 hours over the previous 12 months, and if there are at least 50 employees within 75 miles.

Entitlement to Leave: Eligible employees shall be entitled to a total of 12 workweeks of leave during any 12-month period for one or more of the following:

- Because of the birth of a son or daughter of the employee and in order to care for such son or daughter
- Because of the placement of a son or daughter with the employee for adoption or foster care

The 12 week leave must be taken at one time UNLESS AN AGREEMENT IS MADE FOR INTERMITTENT LEAVE by the employer and the employee.
On agreement between the employer and the employee, a leave may be taken on a reduced leave schedule. Such reduced leave schedule shall not result in a reduction in the total amount of leave to which the employee is entitled under this act.
If an employer provides paid leave for fewer than 12 workweeks, the additional weeks of leave necessary to attain the 12 workweeks of leave required under this act may be provided without compensation.

Advanced Notice and Medical Certification: The employee may be required to provide advance leave notice. Taking of leave may be denied if requirements are not met:

- For an expected birth or adoption, the employee must provide 30 days advance notice
- If the birth or adoption occurs prior to the 30 days notice, the employee shall provide such notice as is practicable

In any case in which a husband and wife are employed by the same employer, they are both entitled to the 12 weeks of leave during any 12-month period.

Job Benefits and Protection:

- For the duration of FMLA leave, the employer must maintain the employee's health coverage under any "group health plan."
- Upon return from FMLA leave, most employees must be restored to their original or equivalent positions with equivalent pay, benefits, and other employment terms.
- The use of FMLA leave cannot result in the loss of any employment benefit that accrued prior to the start of an employee's leave

Enforcement: The United States Department of Labor is authorized to investigate and resolve complaints of violations.

- An eligible employee may bring a civil action against an employer for violations

Sections Relevant to Breastfeeding in the 2007 Revision of the Massachusetts Hospital Licensure Regulations

130.601 Definitions

- The following definitions apply in 105 CMR 130.000 when used with regard to maternal and newborn services:
    - Lactation Consultant shall mean an individual certified as an International Board Certified Lactation Consultant or an individual with equivalent training and experience

130.615 Patient/Family Services

- B. Each hospital with a maternal newborn service shall provide prenatal, postnatal and family-planning services either directly or through referral to an outside agency, including the following:
    - 3. Infant feeding instruction and support during hospitalization and provision of information on resources to assist the mother and family after discharge, including, for breastfeeding mothers, community-based lactation consultant resources and availability of breast pumps
- I. Each service shall have a written policy that provides for discharge planning and referrals to community agencies and healthcare providers, including lactation consultants as needed

130.616 Administration and Staffing

- D. Patient care policies. Each maternal and newborn service shall develop and implement written patient care policies and procedures, supported by evidence based resources, which shall include provisions for the following:
    - 11. Support of lactation initiation and maintenance for mothers who choose breastfeeding. Such policies shall provide for the following:
        - no standing orders for antilactation drugs
        - unless medically contraindicated, encouragement of breastfeeding as soon after birth as the baby is interested. A mother separated from her infant shall be assisted to initiate and maintain her milk production
        - frequent nursing periods based on the infant's need
        - supplemental bottle feeding for medical reasons or on the request of the mother only
        - sample formula and/or formula equipment distributed to breastfeeding mothers only when an individual physician order is written or on the request of the mother
    - 12. Care of the newborn
        - promotion of parent-newborn contact
        - infant feeding (including flexible schedule per parent's request), output measurement and shin-to-skin care
        - planning for discharge, including documentation of follow-up care arrangements and referral to appropriate community services and providers for both mother and infant
    - 18. Policies for safe and secure storage and handling of infant feedings, formula and breast milk, including policies to ensure the correct labeling and identification of all infant feeding
- F. Nurse staffing
    - All licensed nursing staff caring shall receive orientation and periodic in-service education related to the current best practices for maternal newborn care including training or documents skill in at least the following areas:
        - Initiation and support of lactation

- G. Lactation Care and Services
    - Each hospital shall deliver culturally and linguistically appropriate lactation care and services by staff members with knowledge and experience in lactation management. At a minimum, each hospital shall provide every mother and infant requiring advanced lactation support with ongoing consultation during the hospital stay from an International Board Certified Lactation Consultant (IBCLC) or an individual with equivalent training and experience
    - Each maternal and newborn service shall develop written, evidence-based breastfeeding policies and procedures and include these in staff education and competency reviews
    - An educational program of lactation support for maternal-newborn staff shall be offered by qualified staff and shall address the following areas:
        - The nutritional and physiological aspects of human lactation
        - Positioning of mother and infant to promote effective sucking, milk release and production
        - Practices to avoid, recognize, and treat common breastfeeding complications
        - Nutritional needs of the mother during lactation and monitoring the nutritional needs of the infant
        - Safe techniques for milk expression and storage of milk
        - Information about community support services available to the family after discharge
        - Cultural values related to breastfeeding

130.618 Environment: General Requirements
The environment shall foster family-centered care including provisions for:

- Private area for mothers to nurse an/or use breast pump

130.624 Nursery
The following shall be readily available to the nursery:

- Electric breast pump and collection kits

130.627 Records

- A. Maternal
    - Method of infant feeding, infant feeding plan of care and progress, and documentation of lactation care and services provided
- B. Newborn record
    - Method of feeding including feeding plan of care
    - Documentation of at least 2 successful feedings for both breastfed and formula-fed infants
    - Discharge instruction sheet including feeding plan, referrals, and follow-up care signed by the infant's practitioner

130.640 Level IIA and IIB: Community-based maternal and newborn service with a special care nursery

- Availability of hospital grade breast pump and collection kits in number sufficient to meet needs and separate refrigerator/freezer for expressed breast milk

130.650 Level III maternal and newborn service or a freestanding pediatric hospital with neonatal subspecialty services

- A lactation consultant shall be available seven days a week. Lactation consultants shall have training and experience in providing care and services to infants with special needs and their families
- Breastfeeding support
- Availability of breastfeeding pump room
- Electric breast pumps and collection kits

130.665 Home visits

Eligible mothers who participate in early discharge [<48 hours vaginal birth; <96 hours cesarean] shall be provided, upon agreement with the mother, a minimum of one home visit. Minimum content of first home visit includes review of:

- Breast/bottle-feeding

Suggestions/Corrections/Additions

Please include the following in the next edition of the Resource Guide:

_____

_____

_____

_____

_____

If this replaces old or incorrect information, please identify the page number of the old or incorrect information.

Return to:
Rachel Colchamiro, MPH, RD, CLC
Massachusetts Department of Public Health
Nutrition Division
250 Washington St, 6th Floor
Boston, MA 02108-4619
Phone (617) 624-6153 Fax (617) 624-6179 e-mail: Rachel.Colchamiro@state.ma.us

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Order Form

Please send _____ copies of the *Massachusetts Breastfeeding Resource Guide* to:

Name_____

Organization_____

Address_____

City_____State_____Zip_____

Telephone_____Fax_____E-mail_____

Return to:
Rachel Colchamiro, MPH, RD, CLC
Massachusetts Department of Public Health
Nutrition Division
250 Washington St, 6th Floor
Boston, MA 02108-4619
Phone (617) 624-6153 Fax (617) 624-6179 e-mail: Rachel.Colchamiro@state.ma.us

Do you have a child under 5?
Are you pregnant or breastfeeding?

WIC OFFERS FAMILIES

- Personalized nutrition consultations
- Checks for free, healthy food
- Tips for eating well to improve health
- Referrals for medical and dental care, health insurance, child care, housing and fuel assistance, and other services that can benefit the whole family

Check these guidelines to decide if WIC might be right for your family.

HOUSEHOLD SIZE	YEARLY	MONTHLY	WEEKLY
1	$19,240	$1,604	$370
2	25,900	2,159	499
3	32,560	2,714	627
4	39,220	3,269	755
5	45,880	3,824	883
6	52,540	4,379	1,011
7	59,200	4,934	1,139
8	65,860	5,489	1,267

IF YOU ARE PREGNANT, YOU CAN INCLUDE EACH OF YOUR UNBORN INFANTS IN THE SIZE OF YOUR FAMILY

Learn more about WIC.

Call **1-800-WIC-1007**

or visit **www.mass.gov/wic**

WIC

WIC Nutrition Program
Nutrition Division • MA Department of Public Health
TDD/TTY: 617-624-5992

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and
A WHOLE LOT MORE