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INTERNATIONAL LACTATION CONSULTANT ASSOCIATION



Clinical Guidelines for the Establishment of Exclusive Breastfeeding

June 2005

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Revision Task Force – Second Edition

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Preface

Interest in maternal and child health has a long history worldwide. The Universal Declaration of Human Rights, ratified in 1948, states that “motherhood and childhood are entitled to special care and assistance.”¹⁸² The Convention on the Rights of the Child, ratified in 1989,¹⁸¹ guarantees children’s right to the highest attainable standard of health. Other conventions and international consensus documents focus on reducing gender-based discrimination that might undermine good health, particularly among young girls and women. Most recently, the global community declared a commitment to “create an environment—at the national and global levels alike—which is conducive to development and to the elimination of poverty.”²³⁰ Exclusive breastfeeding for six months was among the most cost effective interventions identified.

It has been estimated that 4 million of the 130 million babies born each year die in the first four weeks of life—the neonatal period.¹⁴⁴ This represents 36 percent of the deaths worldwide in children under the age of five years.

The health benefits of breastfeeding for mothers, infants, and society are well documented.^{1, 6, 9, 10, 36, 51, 99, 133, 138, 180, 250} So, too, are the health risks and economic costs associated with artificial feeding.^{43, 46, 238} The benefits are even more compelling when consideration is given to the impact of *not* breastfeeding on maternal and child morbidity and mortality.

Global health organizations, governmental and non-governmental agencies, and health professional associations recommend exclusive breastfeeding for the first six months of life with continued breastfeeding for two years and beyond as the normal way to feed infants.^{9, 10, 36, 51, 250} Despite overall improvements in breastfeeding initiation and duration rates during the 1990s, fewer than half of all infants worldwide are now being exclusively breastfed for up to four months. Although global levels of continued breastfeeding are relatively high at one year of age (79%), only half of children are breastfeeding at two years of age. Thus, the current breastfeeding patterns are far from the recommended levels.²²⁹

Many health care professionals believe that breastfed infants born in developed countries are only marginally different from their formula-fed counterparts. This attitude is reflected in both the absence of lactation management education in health care professional curricula and the dearth of breastfeeding management skills among many health care professionals.^{72, 83, 86, 93, 102, 103, 113, 118, 146, 147, 223}

In 1991, the World Health Organization and the United Nations Children’s Fund launched the Baby-friendly Hospital Initiative. *Baby-friendly* is a designation given to hospitals or birthing facilities that demonstrate compliance with the *Ten Steps to Successful Breastfeeding*.²⁴⁸ Data show that for breastfeeding to be successfully initiated and established, most mothers need appropriate information and support from health care professionals.²⁴⁸

Among the factors associated with early introduction of human milk substitutes and discontinuation of breastfeeding are lack of confidence in ability to breastfeed, particularly among first time mothers, lack of support from health care professionals, and a variety of breastfeeding problems.^{78, 221} This document focuses on the establishment of exclusive breastfeeding for healthy, full-term infants. Common problems that often lead to early introduction of human milk substitutes and untimely weaning are addressed. Circumstances and conditions are identified that may require referral to a skilled lactation professional, an International Board Certified Lactation Consultant (IBCLC), or a physician, midwife, nurse, or dietician with specialized training in breastfeeding support.

A comprehensive assessment of the mother and infant, including the mother’s knowledge base and beliefs, is an essential first step. Parents’ beliefs and misconceptions need to be addressed before an appropriate clinical strategy can be implemented. Breastfeeding is a health behavior with long-term consequences⁹ that is often fraught with personal opinion on the part of both the family and the health care provider. The health care professional’s acceptance of breastfeeding as the normal way to feed an infant, the standard against which all

methods of infant feeding should be measured, is an essential element to be valued. These strategies are designed to give form to optimal breastfeeding management and to provide health care professionals with a clear understanding of both the art of breastfeeding and the science behind the art. Several well-respected professional associations have published position documents presenting evidence and rationale for setting a high priority on breastfeeding and human lactation management skills for the health care professional.^{1, 6, 9, 10, 36, 51, 99, 133, 138, 180, 250}

Clinical guidelines must be evidence-based as well as consistent, accurate, and culturally appropriate to effectively impact breastfeeding initiation, duration, and exclusivity.^{133, 165, 187, 203} As in all other areas of health care, breastfeeding management is an evolving field. Therefore, the management strategies presented herein reflect current clinical, educational, and scientific knowledge.

Some aspects of breastfeeding management are not amenable to the control and randomization of true experimental design, but are based on clinical experience and logical deductions from known scientific facts. The supporting references for the strategies contained in this document range from original research to works based on years of clinical experience. The quality of the evidence for each reference is ranked using a model developed by the US Preventive Services Task Force (see Appendix 1).²²⁷

These clinical guidelines advocate for women and children by giving health care professionals entrusted with their care an operational framework. They reflect a continuum of care approach based on the understanding that the health and interests of the mother/child dyad should not be separated. Maternal health is the most important determinant of neonatal outcome and a healthy newborn is the best promise for the future.

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Expected Outcomes for Breastfeeding Mothers and Infants

Healthy, full-term, breastfeeding infants will:

- lose no more than 7 percent of birth weight^{14, 149, 152, 155, 164, 201, 209, 224, 255}
- regain to birth weight by 10 days of age^{152, 209}
- have at least 3 bowel movements each day after day 1* with age appropriate color changes (first bowel movement typically occurs within 8 hours of birth)^{167, 255}
- have at least 6 wet diapers each day by day 4 with urine that is clear or pale yellow (first urination typically occurs within 8 hours of birth)^{167, 178, 255}
- breastfeed without time restriction, on average 8 times in each 24 hours^{34, 60, 252}
- gain weight at a rate that is appropriate for age (about 20 - 35 grams or 2/3 - 1 ounce each 24 hours by day 5)^{68, 69, 88}
- breastfeed exclusively for the first six months^{9, 136, 137, 158, 179, 183, 233}

*The first 24 hours after birth is day 1.

Mothers of healthy, full-term, breastfeeding infants will:

- identify and respond appropriately to early infant feeding cues¹⁵⁶
- achieve comfortable positioning and effective latch (attachment)^{24, 80, 175, 225}
- recognize signs of effective breastfeeding^{193, 210}
- exhibit appropriate breastfeeding knowledge and management skills²¹⁹
- identify available breastfeeding resources^{140, 202, 216}
- breastfeed through the first year of life and beyond as desired⁹
- breastfeed exclusively for the first six months^{136, 137, 158, 179, 183, 233}

Management Strategy

1

Facilitate breastfeeding within the first hour after birth and provide for continuous skin-to-skin contact between mother and infant until after the first feeding.

- Avoid routine procedures until after the first breastfeeding.

Rationale and References

Initiation of breastfeeding within the first hour and continuous skin-to-skin contact are associated with:

- earlier establishment of effective suckling and feeding behaviors^{195, 240, 257}
- enhanced maternal-infant relationship^{161, 189, 194, 239, 241}
- improved neonatal temperature control^{18, 35, 48}
- improved infant metabolic stability^{18, 48}
- improved neonatal blood sugar stability^{243, 254}
- increased bowel movements and decreased risk for neonatal jaundice^{20, 205, 208, 252}
- longer duration of breastfeeding^{61, 168, 239, 252}
- maternal oxytocin release after birth, which may have significance for uterine contraction, milk ejection, and mother-infant interaction¹⁶¹
- enhanced ability by infant to organize state and modulate motor system⁸¹

Routine procedures, such as prophylactic administration of vitamin K and erythromycin interrupt maternal-infant interaction and delay breastfeeding^{15, 132, 195, 241}

Quality of Evidence

Righard II-3,
Widstrom II-2,
Zetterstrom III

Matthiesen II-3,
Prodromidis II-2,
Renfrew III,
Wiberg II-2,
Widstrom II-2

Bergman I,
Bystrova I,
Christensson I

Bergman I,
Christensson I

Williams III,
Yaumachi II-2

Bertini II-3,
Salariya II-2,
Semmekrot III,
Yaumachi II-2

de Chateau II-2,
Mikiel-Kostyra II-2,
Wiberg II-2,
Yamauchi II-2

Matthiesen II-3

Ferber I

Awi II-2,
Klaus III,
Righard II-3,
Widstrom II-2

Assist the mother in achieving a comfortable position and effective latch (attachment).**Observe infant for signs of effective positioning:**

- infant well supported and placed at the level of the mother's breast (mother-led attachment)
- infant well supported and placed between the mother's breasts (baby-led attachment)

Observe infant for signs of effective latch:

- wide opened mouth
- flared lips
- chin touching the breast
- asymmetric latch (more areola visible above the baby's mouth)

Observe infant for signs of milk transfer:

- sustained rhythmic suckle/swallow/breathe pattern with periodic pauses
- audible swallowing
- relaxed arms and hands
- moist mouth

Observe mother for signs of milk transfer:

- breast softening while feeding
- relaxation or drowsiness
- thirst
- uterine contractions or increased lochia flow during or after feeding
- milk leaking from the opposite breast while feeding
- nipple elongated but not pinched or abraded after feeding

There is clear evidence for the effectiveness of professional support on the duration of any breastfeeding, although the strength of its effect on the rate of exclusive breastfeeding is uncertain.²¹³

Milk transfer occurs with appropriate positioning and latch (attachment). The position that best facilitates effective latch will vary among mothers and infants.^{104, 173, 196}

Effective positioning and latch minimize nipple tenderness and trauma.^{104, 120}

Effective breastfeeding technique increases the duration of breastfeeding.^{41, 120, 196}

Sikorski III

Henderson I,
Morton III,
Righard II-2

Henderson I,
Ingram II-2

Cernadas II-3,
Ingram II-2,
Righard II-2

Keep the mother and infant together during the entire postpartum stay.

- Conduct examinations and routine tests of the infant while the infant is in the mother's room, in the mother's arms, or on the breast.

Rooming-in facilitates breastfeeding.^{33, 40, 148, 186, 253}

Breastfeeding frequency is greater and supplementation with human milk substitutes (formula) occurs less often when mothers and infants room in.^{84, 252, 253}

Mothers do not necessarily get more sleep when the infant is taken to the nursery at night.¹²⁸

Hospital practices and policies impact the establishment of effective breastfeeding.
15, 30, 187, 218, 241, 248

Breastfeeding at birth and at three months is strongly associated with mother and infant co-sleeping.^{25, 191}

Skin-to-skin contact and breastfeeding provide analgesia for painful procedures.^{37, 91, 92}

Buranasin II-3,
Centouri II-2,
Lindengerg II-2,
Perez-Escamilla I,
Yaumachi II-1

Flores-Huerta II-1,
Yaumachi II-1,
Yaumachi II-1

Keefe II-2

Awi II-2,
Braun II-2,
Phillip II-3,
Strembel II-3,
Widstrom II-2,
WHO III

Blair II-2,
Quillin II-3

Carbajal I,
Gray I,
Gray I

Teach mothers to recognize and respond to early infant feeding cues and confirm that the baby is being fed at least 8 times in each 24 hours.

Early infant feeding cues include:

- sucking movements
- sucking sounds
- hand-to-mouth movements
- rapid eye movements
- soft cooing or sighing sounds
- restlessness

Crying is a late feeding cue and may interfere with effective breastfeeding.

Breastfeeding in response to early feeding cues (as opposed to timed/scheduled feedings):

- helps prevent pathologic engorgement¹⁹³
- decreases the incidence of sore nipples¹⁹³
- ensures that a mother's milk production is a reflection of her infant's appetite⁵⁶⁻⁵⁸
- reflects the fact that there is a wide range of patterns among exclusively breastfed infants¹¹⁰
- decreases the incidence of jaundice^{20, 153, 206, 208}
- stabilizes neonatal serum glucose levels^{4, 63, 73, 79, 254}
- decreases initial infant weight loss and increases rate of weight gain²⁰⁸
- promotes earlier onset of mature milk production^{117, 231, 252}
- increases the duration of breastfeeding^{9, 110, 139, 193}

Early stages of the infant's breast seeking behaviors should be observed as well as the actual feeding.²⁴

Responding to early feeding readiness cues facilitates effective latch and suckling that subsequently reinforces the mother's interest in feeding her infant.^{156, 241}

Renfrew II-2

Renfrew II-2

Daly III,
Daly III,
Daly III

Hornell II-2

Bertini II-3,
Maisels I,
Salariya II-2,
Semmekrot III

Adejuyigbe II-2,
de Rooy II-2,
Diwakar II-2,
Eidelman III,
Yamauchi II-2

Semmekrot III

Humenick II-3,
Uvnas-Moberg II-2,
Yamauchi II-2

AAP III,
Hornell II-2,
Kurinj II-2,
Renfrew II-2

Blair II-2

Marchini II-3,
Widstrom II-2

Management Strategy

5

Confirm that mothers understand the physiology of milk production, especially the role of milk removal.

To facilitate milk production:

- breastfeed when the infant exhibits early feeding cues or approximately every 1-3 hours
- breastfeed on the first breast until the infant seems satisfied (on average 15-20 minutes) before offering the second breast

NOTE: Some infants are satisfied with one breast, while others will breastfeed on both breasts at every feeding.

Management Strategy

6

Confirm that mothers know how to wake a sleepy infant.

- Wake when early feeding cues are exhibited (see Management Strategy #4) or at least 8 times in each 24 hours.

Strategies to wake the infant include:

- remove any blankets
- change the infant's diaper
- place the infant skin-to-skin
- massage the infant's back, abdomen, arms, and legs

Rationale and References

Rate of milk synthesis is associated with the thoroughness of milk removal in the absence of inhibitory feedback.^{55, 58, 185}

The frequency of milk removal may not directly affect the volume of milk production; frequency of feeding may be associated with the mother's storage capacity.⁵⁶

Total time breastfeeding is positively correlated with infant intake and weight at 3 months of age.⁶⁷

Infants whose mother's milk has a lower fat content will breastfeed longer to obtain sufficient calories.^{226, 246}

Rationale and References

Infants have several states: deep sleep, light sleep, drowsy, quiet alert, fussy or active alert, and crying. It is easiest to initiate feedings when the infant is in the drowsy, quiet alert, or active alert state.^{29, 32}

Some infants go to sleep as a means of coping with discomfort, over-stimulation, or hunger.³¹

Quality of Evidence

Cregan II-3,
Daly III,
Peaker III

Daly III

Dewey II-1

Tyson I,
Woolridge II-2

Quality of Evidence

Brandt III,
Brazelton III

Brazelton III

Management Strategy

7

Avoid using pacifiers, artificial nipples, and supplements, unless medically indicated.

Rationale and References

Human milk provides all of the fluid and nutrients necessary for optimal infant growth.^{136, 137, 158, 233}

A longer duration of exclusive breastfeeding is significantly associated with positive maternal attitudes toward breastfeeding, adequate family support, good mother-infant bonding, appropriate suckling technique, and avoidance of nipple problems.⁴¹

Healthy infants have the ability to generate alternative fuels when blood glucose values are low. Routine formula supplementation should not be recommended.⁶³

Additional water is unnecessary even in hot climates.^{13, 204}

Early use of supplements or pacifiers is associated with an increased risk for early weaning.
17, 26, 39, 106, 114, 134, 139, 157, 197, 228, 234

The effect of supplemental feedings on the frequency and duration of breastfeeding remains controversial.^{114, 207}

Quality of Evidence

Kramer I,
Kramer III,
Marques II-2,
van't Hof II-2

Cernadas II-3

de Rooy II-2

Ashraf II-2,
Sachdev I

Barros II-2,
Blomquist II-2,
Casiday II-2,
Hill II-2,
Howard II-2,
Kramer I,
Kuriniij II-2,
Marques II-2,
Righard II-2,
Ullah II-2,
Victoria II-2

Howard I,
Schubiger I

Management Strategy



Observe and document at least one breastfeeding in each eight-hour period during the immediate postpartum period.

Document the following to assess effective latch:

- comfort of mother
- condition of both breasts and nipples
- shape of nipple on release
- signs of milk transfer
- number of feedings
- number of urinations
- number and character of bowel movements
- daily weight gain/loss

Rationale and References

Direct observation is an essential part of breastfeeding assessment. Assessment is a prerequisite to intervention and provides opportunity for positive reinforcement and reassurance.^{97, 160, 198}

Quality of Evidence

Hall II-2,
Matthews III,
Riordan II-2

Assess the mother and infant for signs of effective breastfeeding and intervene if transfer of milk is inadequate.

Signs of effective breastfeeding in the infant include:

- weight loss less than 7 percent
- at least 3 bowel movements in each 24 hours after day 1*
- seedy, yellow bowel movements by day 5
- at least 6 urinations a day by day 4 with urine that is clear or pale yellow
- satisfied and content after feedings
- audible swallowing during feedings
- no weight loss after day 3
- weight gain by day 5
- back to birth weight by day 10

*The first 24 hours after birth is day 1.

Signs of effective breastfeeding in the mother include:

- noticeable increase in firmness, weight, and size of breasts and noticeable increase in milk volume and composition by day 5
- nipples show no evidence of damage
- breast fullness relieved by breastfeeding

If effective breastfeeding, as indicated by milk transfer, is not observed within the first 12 hours:

- re-evaluate breastfeeding techniques (see Management Strategy #2)
- initiate milk expression using manual expression or a breast pump
- if medically indicated, initiate supplementation (see Management Strategy #12)
- delay discharge from care until effective breastfeeding has been observed
- refer to a health care professional with breastfeeding expertise, such as an International Board Certified Lactation Consultant (IBCLC), physician, midwife, nurse, or dietician
- coordinate care with the infant's health care provider

Although a single sign may not indicate ineffective breastfeeding, further investigation and follow-up are appropriate.¹⁷⁴

Healthy full-term infants:

- lose less than 7 percent of birth weight in the first 3 days^{14, 152, 155, 164, 201, 209, 255}
- gain approximately 20 - 35 grams or 2/3 - 1 ounce each day by day 5^{68, 135}
- regain to birth weight by day 10^{152, 209}

Lack of bowel movements in the breastfed infant is a key indicator of inadequate caloric intake.^{167, 178, 209, 255}

Continued weight loss on day 3 is strongly correlated with untimely weaning.^{152, 164}

Breastfeeding duration increases when there is ongoing support and evaluation as well as appropriate intervention.^{9, 64, 140, 212, 213}

Exclusively breastfed newborns have adequate glucose supply and are not at risk of having hypoglycemia in the first 48 hours of life.⁴

The rate of milk synthesis is greatest when the breast is most drained of milk.⁵⁵

Supplementation is seldom medically indicated but when mothers or infants cannot breastfeed another method of feeding must be identified.^{2, 26, 137, 251}

Neifert III

Avoa II-2,
Macdonald II-2,
Marchini II-3,
Merlob II-2,
Rodriguez II-2,
Shrago II-2,
Yaseen II-2

Dewey II-1,
Kramer I

Macdonald II-2,
Shrago II-2

Metaj II-3,
Nyhan II-1,
Shrago II-2,
Yaseen II-2

Macdonald II-2,
Merlob II-2

Dennis I,
AAP III,
Labarere I,
Sikorski II-1,
Sikorski II-1

Adejuyigbe II-2

Cregan II-3

AAP III,
Blomquist II-2,
Kramer I,
WHO III

Identify maternal and infant risk factors that may impact the mother's or infant's ability to breastfeed effectively and provide appropriate assistance and follow-up.

Infant risk factors include but are not limited to:

- birth interventions and/or trauma
- less than 38 weeks gestation
- inconsistent ability to maintain an effective latch
- ineffective suck
- persistent sleepiness or irritability
- long intervals between feedings
- hyperbilirubinemia or hypoglycemia
- small (SGA) or large (LGA) for gestational age or intrauterine growth restriction (IUGR)
- tight frenulum
- multiple birth
- neuromotor deficits
- chromosomal abnormalities, e.g. Down syndrome
- oral anomalies, e.g. cleft lip/palate
- acute or chronic illness, e.g. cardiac disease
- use of pacifier or artificial [bottle] nipple

Maternal risk factors include but are not limited to:

- previous breastfeeding difficulty
- birth interventions
- separation from infant
- absence of prenatal breast changes
- damaged, cracked or bleeding nipples
- unrelieved fullness or engorgement
- persistent breast pain
- mother's perception of insufficient milk
- acute or chronic disease
- medication use
- breast or nipple abnormality
- breast surgery or trauma
- hormonal disorders e.g. polycystic ovarian syndrome

Risk factors may signal a need for added support but are seldom a contraindication to breastfeeding.¹⁴⁵

When risk factors are identified, appropriate and timely intervention can reduce the likelihood of early weaning.¹⁵⁰

It is possible to predict babies at risk for short-term breastfeeding, based on their sucking behavior at the breast in the early neonatal period.¹⁶⁹

Potentially modifiable risk factors can affect the infant's ability to breastfeed effectively.^{16, 70, 166}

Certain perinatal events are predictive that a mother will stop breastfeeding by 7-10 days postpartum unless she receives extra assistance.⁹⁷

Most breastfeeding problems and concerns are amenable to treatment and support.^{27, 52, 89, 108, 109, 215}

Maternal breastfeeding self-efficacy is a significant predictor of breastfeeding duration.²⁷

Health care professionals are responsible for encouraging women to breastfeed all their children, regardless of their previous experience.¹¹⁹

Reports of insufficient milk production persist. A possible cause may be polycystic ovarian syndrome.¹⁵⁴

Lawrence III

Loughlin II-2

Mizuno II-2

Ballard II-2,
Dewey II-2,
Messner II-2

Hall II-3

Cooke II-3,
Giugliani II-2,
Hill II-3,
Hillervik-Lindquist II-2,
Souto II-2

Blyth II-3

Ingram II-3

Marasco III

Identify any maternal and infant contraindications to breastfeeding.

Maternal contraindications include:

- HIV seropositivity (provided safe and sufficient quantities of human milk substitutes are available)
- HTLV-1 seropositivity
- substance abuse
- chemotherapy
- radioactive isotope therapy (interrupt breastfeeding only until the isotope has been eliminated from the mother's body)
- active tuberculosis (if only the mother is infected, isolate the mother until treatment is initiated and the mother is no longer contagious; the mother's expressed milk can be fed to her infant; if mother and infant are infected, isolate them together)
- active varicella (if maternal rash develops within 5 days prior to birth or 2 days after birth, isolate the mother until she is no longer contagious; expressed milk can be fed to her infant; if both mother and infant are infected, isolate them together)
- active herpes lesion(s) on breast (breastfeed on unaffected breast or interrupt breastfeeding only until lesion(s) heal)
- Chagas' disease caused by a South American parasite (interrupt breastfeeding during the acute phase only; the mother's expressed, pasteurized milk can be fed to the infant)

Infant contraindications include:

- galactosemia

Note: Some conditions are incorrectly identified as contraindications. These include:

- maternal fever in the absence of a contraindication listed above
- hepatitis B or C infection
- exposure to low-level environmental contaminants
- alcohol use (advise mothers to limit intake to an occasional drink)
- tobacco use (advise mothers to stop smoking or if unable to stop make every effort to avoid exposing infant to second-hand smoke)
- cytomegalovirus (CMV) infection

While breastfeeding is seldom contraindicated, there may be situations in which the potential risks outweigh the benefits.^{7, 145}

HIV can be transmitted through human milk. The relative role of breastfeeding in the epidemiology of HIV infection is still uncertain. Until more information is available, HIV infected women should be encouraged not to breastfeed when safe and sufficient quantities of artificial infant formula are available.^{22, 54}

The milk of HIV positive women can be pasteurized and fed to their infants.¹²⁴⁻¹²⁶

HTLV-1 can be transmitted through human milk. However, freeze-thaw processing can eliminate the HTLV-1 virus from a mother's milk. This process allows HTLV-1 positive mothers to use their processed milk to feed their infants.^{12, 38}

Most medications are compatible with breastfeeding. Notable exceptions include antineoplastic drugs, radiopharmaceuticals and drugs of abuse.^{11, 45, 96}

Individuals with active tuberculosis remain contagious for at least two weeks after the start of drug therapy.¹⁶³

Pasteurization prevents the transmission of Chagas' disease and allows infants of mothers with this disease to be fed their own mother's milk.^{23, 82}

Galactosemia is characterized by an inability to metabolize galactose, the primary sugar in human milk.⁴⁷

Recommendations regarding the appropriate response to the presence of environmental chemicals in human milk must carefully consider the health risks and benefits associated with breastfeeding and formula-feeding.^{19, 90, 142}

Alcohol (beer, wine, liquor) passes readily into human milk. While an occasional drink is considered safe, further studies are needed to determine the minimum level of alcohol needed to produce adverse outcomes in breastfeeding mothers and infants.^{59, 162}

Maternal smoking is associated with shortened exclusive and total breastfeeding duration.^{111, 244}

VLBW preterm infants are at greater risk for symptomatic CMV infection. Pasteurization of human milk can reduce the viral load.^{98, 256}

AAP III,
Lawrence III

Bertolli III,
Coutsoudis II-1

Jeffery II-3,
Jeffery II-3,
Jeffery II-3

Ando II-3,
Carles II-3

Anderson III,
Chaves III,
Hale III

Menzies III

Bittencourt III,
Ferreira III

Chen III

Berlin III,
Grandjean II-2,
LaKind III

de Araujo Burgos III,
Mennella II-2

Horta II-2,
Wojdan-Godek II-2

Hamprecht II-3,
Yasuda II-3

Management Strategy

12

If medically indicated, provide additional nutrition using a method of supplementation that is least likely to compromise the transition to exclusive breastfeeding.

Guidelines for supplementation:

- use mother's own milk first
- pasteurize the mother's milk if she is HIV positive
- pasteurized donor milk is the next best alternative to the mother's own milk
- human milk substitute (formula) is the last choice
- reassure mother that her infant will benefit from any amount of her milk provided
- the selection of a human milk substitute should take into account any family history of allergic disease

Management Strategy

13

Confirm that the infant has a scheduled appointment with a primary care provider or health worker within five to seven days after birth.

Schedule additional visits as needed until a consistent weight gain pattern has been established.

Identify breastfeeding support resources within the community such as:

- International Board Certified Lactation Consultants (IBCLCs)
- community health workers and home visitors trained to provide breastfeeding support
- breastfeeding clinic staff
- health department staff
- volunteer breastfeeding support groups
- breastfeeding peer counselors
- telephone center for breastfeeding advice
- breast pump rental and sales outlets

Rationale and References

Offering additional nutrition at the breast will provide the mother with suckling stimulation and decrease the time required for feeding.^{77,85}

Additional methods of offering nutrition include a cup, spoon, dropper or bottle.^{114,143}

Use of cup feeding requires instruction and skill.^{75,114}

Exclusive breastfeeding or feeding with a partial whey hydrolysate formula is associated with lower incidence of atopic disease and food allergy. The effect appears even stronger in children with atopic heredity.^{8,42,100,232}

Rationale and References

Infant weight and other clinical signs that indicate effective breastfeeding require on-going evaluation.^{3,9}

Knowledgeable and skilled breastfeeding support increases breastfeeding initiation, duration, and exclusivity rates.^{5,44,62,65,66,95,131,140,172,212,213,235}

Inconsistent or inaccurate information given by health care professionals contributes to maternal confusion and premature weaning.⁸⁷

Attitudes of health care professionals can affect breastfeeding duration.⁷²

Provider encouragement significantly increases breastfeeding initiation among American women of all social and ethnic backgrounds.^{151,221,223}

Mothers' reports of breastfeeding advice given during routine preventive visits identifies areas in which unintentional communication gaps may occur, including specifics about breastfeeding duration.^{127,222}

Quality of Evidence

Edgehouse III, Frantz III

Howard I, Lang III

Dowling II-2, Howard I

AAP III, Chandra I, Hanson II-2, van Odijk II-2

Quality of Evidence

ABM III, AAP III

Albernaz II-1, Chapman I, Dennis II-2, Dennis I, de Oliveira III, Haider I, Kistin I, Labarere I, Morrow I, Sikorski II-1, Sikorski II-1, Vittoz II-3

Freed II-3

DiGirolamo II-3

Lu II-2, Taveras II-2, Taveras II-2

Johnston I, Taveras II-2

Management Strategy

14

Provide appropriate breastfeeding education materials.

Appropriate materials are:

- clinically accurate
- consistent
- positive
- reading-level appropriate
- culturally sensitive
- free of commercial advertising
- compliant with the *International Code of Marketing of Breast-milk Substitutes* and subsequent WHA resolutions

Rationale and References

Educational programs are the most effective single intervention for improving breastfeeding initiation and duration.⁹⁴

Prevalence of and factors influencing the decision to breastfeed differ by race and ethnicity among adolescent mothers.²⁴²

Targeting specific mothers and members of their support system, educating them before and during pregnancy, and stressing benefits of breastfeeding while eliminating misinformation, may be important intervention strategies for promoting breastfeeding.²¹

An analysis of printed breastfeeding education materials reveals a presence of negative breastfeeding messages that is of concern.²³⁶

Materials containing commercial advertisements often transmit subtle, undesirable messages, reinforce stereotypes, and/or contradict verbal messages.²³⁷

Exposure to formula promotion materials significantly increases breastfeeding cessation in the first 2 weeks. In addition, among women with uncertain goals or breastfeeding goals of 12 weeks or less, the period of exclusive breastfeeding and overall breastfeeding duration are shortened.¹¹²

Quality of Evidence

Guise II-2

Wiemann II-3

Bertini II-3

Vnuk III

Walker III

Howard I

Management Strategy

15

Support exclusive breastfeeding during any illness or hospitalization of the mother or the infant.

Rationale and References

Continued breastfeeding during illness or hospitalization is important for the well-being of both the mother and infant.^{9,115}

Quality of Evidence

AAP III,
Howard II-2

Management Strategy

16

Comply with the *International Code of Marketing of Breast-milk Substitutes* and subsequent WHA resolutions, and avoid distribution of infant feeding product samples and advertisements for such products.

Rationale and References

Distribution of infant feeding products decreases breastfeeding duration.^{112, 237, 247}

The distribution of commercial hospital discharge packs decreases the duration of exclusive breastfeeding in all populations.⁷⁴

Quality of Evidence

Howard I,
Walker III,
WHA III

Donnelly III

Management Strategy

17

Include family members or significant others in breastfeeding education.

Rationale and References

Support of family members and significant others increases the duration of breastfeeding.^{122, 213, 245}

Quality of Evidence

Ingram II-2,
Sikorski II-1,
Wolfberg I

Provide anticipatory guidance for common problems that can interfere with exclusive breastfeeding.

Nipple pain:

- many mothers report mild discomfort at the beginning of a feeding when the infant latches onto the breast
- all pain should be evaluated
- pain is often the result of ineffective positioning and latch
- consider other causes such as bacterial or fungal infection

Engorgement (as opposed to normal fullness):

- normal fullness is relieved with frequent, effective breastfeeding
- engorgement occurs in some mothers approximately 3-5 days after birth (breasts can be painful and swollen)
- unrelieved swelling (engorgement) requires treatment
- focus treatment on measures to reduce swelling and relieve pain, including breast massage, hand expression or pumping, intermittent compression (reverse pressure softening), application of cold, and anti-inflammatory medication
- avoid the use of heat unless the breasts are leaking freely

Perceived insufficient milk supply:

- a mother may think that she has insufficient milk because her breasts are soft after birth
- milk volume increases within several days and is usually accompanied by breast fullness
- in the second week of life, initial breast fullness decreases but this does not signal a decrease in milk production
- infants have recurring growth or appetite spurts, during which more frequent feedings increase milk production and thus caloric intake
- if a fussy infant is having normal output and is gaining weight, low milk supply is not the cause of fussiness

Anticipatory guidance by health care providers can increase maternal confidence, enhance the breastfeeding experience, and reduce the risk of early weaning.^{28, 89, 105, 127, 188}

Normal infant sucking may induce nipple changes that some women perceive as painful.²⁵⁸

Inconsistent or inaccurate education on postpartum positioning and attachment may negatively affect breastfeeding.¹⁰⁴

Mammary candidosis (fungal infection) may be a significant factor contributing to premature weaning.¹⁷¹

Previous breastfeeding experience and current feeding routine can play an important role in the timing and level of breast engorgement. Anticipatory guidance may minimize engorgement and enhance the breastfeeding experience.^{105, 170}

Use of intermittent compression has been shown to reduce swelling.^{53, 217}

Application of cold has been shown to reduce pain and swelling; however, its effectiveness in relieving breast engorgement has not been well studied.²¹⁴

Cabbage leaves and chilled gel packs are widely used to relieve engorgement.^{177, 199, 200, 214}

Perceived insufficient milk supply occurs in up to 50% of all breastfeeding mothers and is a significant cause of untimely weaning.^{52, 107}

The perception of insufficient milk seems real to many mothers, but in most cases it is not valid. Supporting the mother to continue breastfeeding through this perceived low milk supply “crisis” increases breastfeeding duration without affecting infant growth.¹⁰⁸

Mothers produce 30-100 ml of colostrum in the first 24 hours; 2-10 ml per feeding on day 1 and 5-15 ml per feeding on day 2.¹¹⁶

Blyth II-3,
Giugliani II-2,
Hill II-3,
Johnston I,
Porteus II-2

Ziemer II-3

Henderson I

Morrill II-2

Hill II-3,
Moon II-3

Cotterman III,
Stockle I

Snowden II-2

Nikodem I,
Roberts II-2,
Roberts II-2,
Snowden II-2

Cooke II-3,
Hillervik-Lindquist II-3

Hillervik-Lindquist II-3

Humenick II-2

(continued on next page)

Management Strategy

Infant crying:

- no crying should go unattended
- crying may be a sign of hunger or a sign of distress—if the infant is not exhibiting feeding cues, parents can try other comfort measures before offering the breast

Maternal diet:

- dietary restrictions are seldom necessary; few infants are affected by foods eaten by the mother
- the mother should eat a variety of foods and drink to satisfy thirst

Breastfeeding does not preclude leaving home with or without the baby.

It is possible to maintain exclusive breastfeeding by:

- planning feedings around the mother's or family's activities
- breastfeeding any time and in any place
- expressing, collecting, and storing milk to leave with the child care provider

Rationale and References

Infant may be in pain.⁴⁹

Breastfeeding can act as an analgesic.^{37, 92}

Analgesia given to the mother during labor may interfere with the newborn's spontaneous breast-seeking and breastfeeding behaviors and increase the newborn's temperature and crying.¹⁹²

Infants identified as crying excessively were less likely to be breastfeeding at 2 weeks of age.¹⁵⁰

Dietary myths can be a barrier to breastfeeding and seldom are fact-based.¹²³

Increased maternal fluid intake does not affect the quantity of milk produced.⁷⁶

Maternal weight reduction associated with breastfeeding may be minimal.²¹¹

Breastfeeding can be accommodated in most situations in which a mother must be away from her infant.¹⁷⁶

Maternal employment is less of a barrier to breastfeeding when worksite lactation support is provided.^{50, 184}

Quality of Evidence

Clifford II-3

Carbajal I, Gray I

Ransjo-Arvidson II-3

Loughlin II-2

IOM III

Dusdieker I

Sichieri II-2

Neilsen III

Cohen II-3, Ortiz II-3

Confirm that mothers understand normal breastfed newborn/infant behaviors and have realistic expectations regarding infant care and breastfeeding.

Frequency and duration of feedings:

- 8-12 feedings in each 24 hours is typical; however, feeding frequency can vary
- some infants will cluster-feed (feed every hour for 2-6 hours and then sleep for a longer period) and others will breastfeed every 2-3 hours day and night
- on average, infants will feed 15-20 minutes on each breast at a feeding; some will feed longer and some are satisfied with only one breast
- sleepy infants need to be awakened for feedings until an appropriate weight gain pattern is established

Infant output:

- at least 3 bowel movements each day with age appropriate color changes (first bowel movement typically occurs within 8 hours of birth)
- at least 6 urinations each 24 hours by day 4 with urine that is clear or pale yellow (first urination typically occurs within 8 hours of birth)
- bowel movements change from black and sticky to yellow, soft and watery by day 4

Infant weight loss/gain

- expect less than 7 percent weight loss the first week
- expect return to birth weight by 10 days of age
- expect weight gain of approximately 20-35 grams or 2/3 - 1 ounce each day for the first 3 months

Parent knowledge of normal breastfed infant behavior correlates with increased breastfeeding rates.²¹⁹

Realistic expectations can prevent premature weaning.¹⁷⁴

Susin II-2

Neifert III

Discuss contraceptive options and their possible effect on milk production.

Contraceptive options include:

- lactational amenorrhea method (LAM)
- barrier devices
- hormonal methods
- surgical procedures
- fertility awareness
- abstinence

The lactational amenorrhea method (LAM) is 98% effective in preventing pregnancy during the first 6 months, provided the infant is breastfed exclusively, the interval between feedings is less than 6 hours, and the mother has not resumed menstruation.^{130, 141, 249}

The use of pacifiers and infant formula are associated with an earlier return to menstruation.¹²¹

Barrier devices typically do not contain synthetic hormones and therefore do not interfere with milk production.¹⁰¹

Synthetic hormones can reduce milk production and subsequently interfere with infant growth.^{101, 190, 220}

Specifically:

- estrogen-containing pills may decrease milk production
- progestin-only pills, rings, patches, injections or implants may inhibit milk production when initiated before lactogenesis stage II occurs—most manufacturer guidelines suggest delaying initiation for at least 6 weeks^{71, 159}
- progestin-only methods begun after 6 weeks often do not impact milk production; however, a trial period using pills that can be easily discontinued may be preferred over injections or implants, the effects of which cannot be reversed¹²⁹

Surgical sterilization does not impact breastfeeding.¹⁰¹

Kennedy II-1,
Labbok II-2,
WHO II-2

Ingram II-2

Hatcher II-2

Hatcher II-2,
Queenan III,
Tankeyoon II-2

Diaz II-3,
Massai II-2

Kennedy II-2

Hatcher II-2

Appendix 1.

Evaluation Criteria for Type of Evidence

(based on US Preventive Services model)²²⁶

Code	Criteria
I	Evidence obtained from at least one properly randomized study.
II-1	Evidence obtained from well-organized, controlled trials without randomization.
II-2	Evidence obtained from well-designed cohort or case-control analytic studies preferably from more than one center or research program.
II-3	Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence.
III	Opinions of respected authorities, based on clinical experience, descriptive studies and case reports, or reports of expert committees.

Appendix 2.

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