

Protocol #18

Alternative Feeding Methods



Protocol #18: Alternative Feeding Methods

Cup feeding, spoon feeding, syringe feeding, lactation aids, finger feeding, and paced bottle feeding are alternative feeding methods that allow oral supplementation of the baby who is unable to obtain a sufficient amount of breast milk from the breast. For most babies these are temporary measures, and the ultimate goal is to establish feeding at the breast.

Suggestions

1. Assess whether supplementation and the use of an alternative feeding method are required (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).

Provide the mother with information about the various alternative feeding methods:

- cup feeding
- spoon feeding
- syringe feeding
- lactation aid at the breast
- finger feeding
- paced bottle feeding.

2. It is important to support the mother in understanding the possible benefits and risks associated with the use of an alternative feeding method, so that she is able to make an informed decision about an appropriate method for supplementation. Offer further assessment and refer for additional support as needed.

Wilson-Clay suggests **Criteria for Selecting an Alternative Method of Infant Feeding:**

- It does not harm the baby.
- It is a good match for the baby's stamina, physical condition, and level of maturity.
- It is easy for the parents to manage.
- It involves equipment that the parents can easily obtain and clean.
- It is a suitable intervention for the length of time needed to remediate the feeding problem.
- It will help the baby learn to breastfeed.

(Source: Adapted from Wilson-Clay et al., 2008)

3. Before initiating an alternative feeding method, support the mother in identifying a plan to facilitate the baby feeding at the breast. The following information will assist the mother to consider her options.

Cup Feeding

Support the mother in understanding that:

- Cup feeding is most successful when it follows the principles of baby-led practices and the baby is able to control the pace and amount of the milk flow.
- The baby sips or laps the milk from the cup.
- Cup feeding is the preferred choice as an alternative oral feeding method.
- Cup feeding encourages the baby's tongue to move downward and forward to sip or lap (like a kitten) up the supplement from a small cup.
- Cup feeding should be used on a short-term basis and be evaluated frequently.
- Cup feeding can be a relatively easy process. However, some mothers may find it challenging to handle the equipment. Support from a family member may be helpful.
- There may be some spillage and it can be messy.
- The equipment is easier to clean than bottles or tubes.
- The baby may only take 5–10 ml of the supplement at first. However, the amount of supplement taken will depend on many factors, e.g., the baby's satiation, the reason for cup feeding, age and status of the baby. The baby may hold the milk in his mouth until there is enough volume for a bolus to trigger swallowing.
- The baby always leads and controls the pace.

Equipment

- Small cup or glass, e.g., plastic medicine cup, shot glass
- Cloth to be placed under the baby's chin
- Supplement fluid: expressed breast milk (EBM) or artificial baby milk (ABM) if breast milk is unavailable or not appropriate (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).

Procedure

1. Wash hands before handling the equipment.
2. Assemble equipment on a clean surface.
3. Prepare the supplement and begin the feeding process before the baby gets overly hungry or fussy.
4. Ensure that the baby is awake and alert.
5. Fill the cup about half full with the supplement.
6. Support the baby in a semi-upright sitting position on the lap. Support the baby's neck and upper back with one hand. Place a cloth under the baby's chin.
7. Bring the cup to the baby's mouth, tipping it so that the supplement just touches the baby's lips. The supplement should not be poured into the baby's mouth. The baby's tongue will move forward and sip or lap up the supplement like a kitten.
8. Keep the cup tipped throughout the entire feeding so that the supplement is always touching the baby's lips. This will allow the baby to control the pace of the feeding.



Baby Cup Feeding

Cleaning Instructions When Using Cup Feeding

For Healthy Full-Term Babies at Home

- After each feeding, wash the cup in hot soapy water, then rinse well and air dry. Store the cup in a dry and clean area away from food preparation.

For Premature or Hospitalized Babies and Mothers and/or Babies with Candidiasis

- Use a new plastic medicine cup after each feeding. The cup cannot be sterilized by boiling. Hospital policies may vary.
- If a cup is used at home and it can be boiled, e.g., a shot glass, it should be boiled after each feeding.
- The cup should first be washed in hot soapy water and rinsed well. Next it should be boiled in a covered pot of boiling water for 10 minutes (*Protocol #15: Candidiasis (Thrush) and CPSO, 2004*), and then removed from the pot to air dry. The cup should be stored in a dry and clean area away from food preparation. (*Source: Adapted from Lauwers, 2011, and Mohrbacher, 2010*)

Spoon Feeding

Support the mother in understanding that:

- Offering a small amount of supplement on a spoon can calm a fussy baby or awaken a drowsy baby (Wilson-Clay, 2008). It can be used when a small cup is not available.
- A spoon is an easy and accessible way to offer a small volume of milk to a baby, such as the early breast milk (colostrum).
- Spoon feeding is most successful when it follows the principles of baby-led practices and the baby is able to control the pace of the milk flow.
- The baby may only take 5–10 ml of the supplement at first. However, the amount of supplement taken will depend on many factors, e.g., the baby's satiation, reason for spoon feeding, age of the baby.
- The baby always leads and controls the pace.

Equipment

- Small clean spoon
- Cloth to be placed under the baby's chin
- Supplement fluid: EBM or ABM if breast milk is unavailable or not appropriate (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).

Procedure

1. Wash hands before handling the equipment.
2. Assemble equipment on a clean surface.
3. Prepare the supplement and begin the feeding process before the baby gets overly hungry or fussy.
4. Ensure that the baby is awake and alert.
5. Fill the spoon with a mouthful of the supplement.
6. Support the baby in a semi-upright sitting position on the lap. Support the baby's neck and upper back with one hand. Place a cloth under the baby's chin.
7. Bring the spoon to the baby's mouth, tipping it so that the supplement just touches the baby's lips. The supplement should not be poured into the baby's mouth. The baby's tongue will move forward and lap up or sip the supplement.
8. Give the baby time to swallow before refilling the spoon and offering more. This will allow the baby to control the pace of the feeding.
9. Clean the spoon according to the same instructions for cleaning a cup as above.

(Source: Adapted from Lauwers, 2011 and Mohrbacher, 2010)

Syringe or Eye-Dropper Feeding

Support the mother in understanding that:

- Syringe feeding is somewhat similar to cup feeding. An eye-dropper can also be used.
- Syringe or eye-dropper feeding is most successful when it follows the principles of baby-led practices and the baby is able to control the pace of the milk flow.
- The baby may only take 5–10 ml of the supplement at first. However, the amount of supplement taken will depend on many factors, e.g., the baby's satiation, reason for syringe feeding, age of the baby.
- The baby always leads and controls the pace.

Equipment

- Syringe or eye-dropper that will hold the amount of supplement needed
- Cloth to be placed under the baby's chin
- Supplement fluid: EBM or ABM if breast milk is unavailable or not appropriate (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).

Procedure

1. Wash hands before handling the equipment.
2. Assemble equipment on a clean surface.
3. Prepare the supplement and begin the feeding process before the baby gets overly hungry or fussy.
4. Ensure that the baby is awake and alert.
5. Wrap the baby securely to prevent his hands from hitting the syringe.
6. Fill the syringe or eye-dropper with the supplement.
7. Support the baby in a semi-upright sitting position on the lap. Place a cloth under the baby's chin.
8. Support the baby's head and upper back with one hand. Bring the syringe or eye-dropper to the baby's mouth. Gently drip the supplement slowly into the baby's mouth.
9. Give the baby time to swallow before offering more. This will allow the baby to control the pace of the feeding.
10. Clean the syringe or eye-dropper according to the same instructions given previously for cleaning the cup.

(Source: Adapted from Mohrbacher, 2010)

Lactation Aid at the Breast

There are three types of lactation aids:

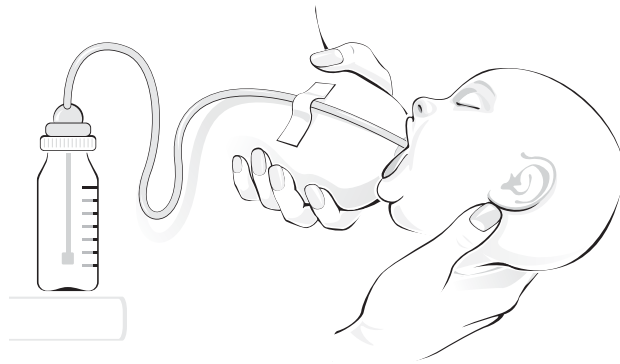
1. Lactation aid using a bottle
2. Lactation aid using a syringe
3. Commercial lactation aid.

Support the mother in understanding that:

- A lactation aid at the breast provides additional breast milk during breastfeeding if the baby is able to latch and **form a seal at the breast**. It provides stimulation to the breast and helps to increase breast milk supply. The lactation aid at the breast allows the baby to receive a supplement and breastfeed at the same time. The lactation aid is a feeding tube connected to a supply of either EBM or ABM.
- A lactation aid at the breast may be the method of choice to supplement breastfeeding if the baby is able to latch onto the breast and if breastfeeding or breast milk are not temporarily contraindicated, e.g., a maternal drug that is contraindicated with

breastfeeding, herpes lesions on the breasts, or cracked nipples when the mother is hepatitis C positive.

- The lactation aid at the breast will deliver a faster flow of milk, which may reward and encourage the baby to continue breastfeeding when the breast milk supply is low or when the baby has difficulties sustaining suction (Wilson-Clay, 2008). **Caution:** A flow that is too fast can overwhelm and discourage a baby.
- The lactation aid at the breast may help to train and stimulate the baby's nutritive sucking reflexes to improve oral coordination. It also helps to increase maternal confidence and promote maternal-infant bonding, since the baby is on the breast while receiving the supplement.



Lactation Aid Using a Bottle

Equipment

- Baby bottle
- Artificial nipple for the bottle
- 36-inch #5 French feeding tube
- Scissors
- Tape
- Small syringe for cleaning the tube after each feeding
- Supplement fluid: EBM or ABM if breast milk is unavailable or not appropriate (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).

Procedure

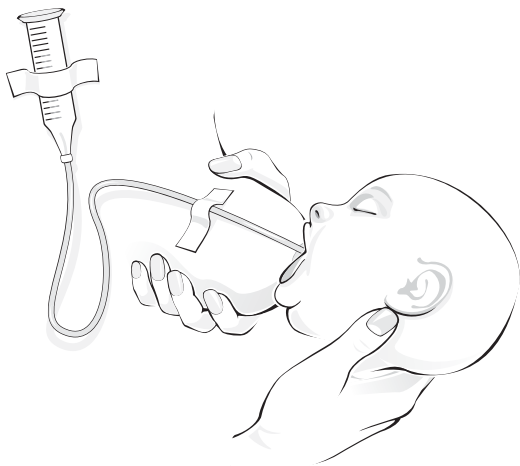
1. Wash hands before handling the equipment.
2. Assemble equipment on a clean surface.
3. Prepare the supplement and begin the feeding process before the baby gets overly hungry or fussy.
4. Enlarge the hole on the artificial nipple by cutting it with clean scissors.
5. Insert the tip of the feeding tube through the bottom of the hole on the artificial nipple.
6. Place the larger end of the tip of the feeding tube into the bottom of the bottle.
7. Place the required amount of supplement into the bottle, ensuring that the open end of the feeding tube is submerged in the supplement fluid.
8. Screw the nipple and cap onto the bottle.
9. Position the bottle on a surface that is level with the baby's head. Alternatively, place the bottle in a pocket of the mother's shirt that is level with the baby's head. **Caution:** If the position is too high, the milk flow will be too fast and the baby may choke. If the position is too low, the baby will need more energy to suck and may tire easily and become frustrated.
10. Tape the feeding tube onto the breast so that the tip of the tube is level with the end of the nipple. Then latch the baby. Alternatively, latch the baby first and then slip the uncut tip of the tube into the corner of the baby's mouth over the tongue while the baby is sucking. Ensure that both holes of the tube are inside the baby's mouth.

When the baby sucks on the breast, the supplement will be drawn through the feeding tube and into the baby's mouth.

Encourage the mother to choose a comfortable position. The football or cross-cradle position may allow the mother to provide optimum support of the baby's neck and shoulders when learning to use a lactation aid.

Inform the mother that the lactation aid is working properly when the baby is effectively sucking and swallowing milk.

(Source: Adapted from *Lactation Aid at the Breast*, (TPH, 2003a))



Lactation Aid Using a Syringe

Equipment

- 20 cc syringe with the plunger removed
- 36-inch #5 French feeding tube
- Tape – pieces of tape
- Small syringe for cleaning the tube after each feeding
- Supplement fluid: EBM or ABM if breast milk is unavailable or not appropriate (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).

Procedure

1. Wash hands before handling the equipment.
2. Assemble equipment on a clean surface.
3. Prepare the supplement and begin the feeding process before the baby gets overly hungry or fussy.
4. With the plunger removed from the 20 cc syringe, insert the syringe tip into the larger end of the feeding tube.
5. Tape the feeding tube onto the breast so that the tip of the tube is level with the end of the nipple. Then latch the baby. Alternatively, latch the baby first and then slip the tip of the tube into the corner of the baby's mouth over the tongue while the baby is sucking. Ensure that both holes on the tube are inside the baby's mouth.
6. Pour the required amount of supplement into the syringe. If the supplement starts to flow, pinch the end of the tube.
7. Secure the syringe to the mother's shoulder or chest with tape.

When the baby sucks on the breast, the supplement will be drawn through the feeding tube and into the baby's mouth.

Encourage the mother to adopt a comfortable position. The football or cross-cradle position may allow the mother to provide optimum support of the baby's neck and shoulders when learning to use a lactation aid.

Inform the mother that when the lactation aid is working properly, it will generally require 15–20 minutes for the baby to take one ounce or 30 ccs of supplement from the syringe.

(Source: Adapted from *Lactation Aid at the Breast*, (TPH, 2003a))

Cleaning Instructions When Using the Lactation Aid with a Bottle or Syringe

For Healthy Full-Term Babies at Home

- After each feeding, fill a small syringe with clean hot water.
- Insert the syringe into the larger end of the feeding tube. Push the plunger to force water into the tube 3–5 times to clean it out. It is not necessary to use soapy water, but if soapy water is used, the tube must be thoroughly rinsed out.
- Force 1–2 plungers of air through the tube to clear out any remaining water.
- Air dry the feeding tube in a clean area away from food preparation.
- Use a new feeding tube frequently, and especially if the tube becomes stiff, brittle or discoloured.
- Wash all other items in hot soapy water, then rinse well and air dry after each feeding. Store items in a dry and clean area away from food preparation.

(Source: Adapted from *Lactation Aid at the Breast*, (TPH, 2003a))

For Premature or Hospitalized Babies and Mothers and/or Babies with Candidiasis

- Use a new feeding tube and 20 cc syringe (if applicable) for each feeding. The tube cannot be sterilized by boiling. Hospital policies may vary.
- After each feeding at home (if applicable), wash the bottle and artificial nipple in hot soapy water and

rinse well. Then boil the items in a covered pot of water for 10 minutes (*Protocol #15: Candidiasis (Thrush) and CPSO, 2004*). Remove the items from the pot and allow them to air dry. Store items in a dry and clean area away from food preparation.

- In the hospital, sterilized bottles and artificial nipples may be provided for each feeding.

Commercial Lactation Aid

Follow the manufacturer's instructions for use.

Finger Feeding

Support the mother in understanding that:

- Finger feeding is a temporary feeding method when the baby is unable to latch or it is necessary to discontinue breastfeeding temporarily. A feeding tube is attached to one of the caregiver's fingers and is connected to a supply of EBM or ABM to provide supplementation to the baby.
- Finger feeding can facilitate proper use of the oral muscles, promoting coordination of suck-swallow-breathing (Hazelbaker in Riordan, 2010) to help the baby develop effective rooting, latching, and sucking patterns.
- There are some concerns that it is invasive and may be addictive (Riordan, 2010). To minimize the possibility of imprinting and in the absence of evidence-informed practices, it is prudent to advise that finger feeding should be used infrequently, for short periods of time, e.g., one day at a time, and evaluated before continuing.
- Before initiating finger feeding, it is important to first explore with the mother any possible contributing factors related to the need for possible supplementation, as well as her breastfeeding self-efficacy. It is also important to inquire about her previous breastfeeding history, current breastfeeding management and attempts to manage or establish breastfeeding, and then to offer her suggestions to optimize basic breastfeeding management before introducing interventions. It is also important to include discussion of her capacity to manage the equipment associated with an intervention.
- It is important to support the mother in understanding the possible benefits and risks associated with the use of finger feeding if she inquires about the use of finger feeding for supplementation. Offer further assessment and

refer for additional support as needed (see notes in *General Principles*).

- Whenever possible, the use of a lactation aid at the breast is preferred over finger feeding because the baby is at the breast and stimulation to the breast is provided. Finger feeding is used when the baby is unable to latch onto the breast or if breastfeeding is temporarily contraindicated, e.g., a maternal drug that is contraindicated with breastfeeding, herpes lesions on the breasts, or cracked nipples when the mother is hepatitis C positive.
- With finger feeding, the motion of the tongue and jaw is similar to when the baby breastfeeds.
- Finger feeding is working properly when the baby is effectively sucking and swallowing milk.



Baby Finger Feeding

Equipment

- Baby bottle
- Artificial nipple for the bottle
- 36-inch #5 French feeding tube
- Scissors
- Tape
- Small syringe for cleaning the feeding tube after each feeding
- Supplement fluid: EBM or ABM if breast milk is unavailable or not appropriate (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).

Procedure

1. Wash hands with soap and water. Ensure that the nail of the index finger used for finger feeding is trimmed and clean.
2. Assemble equipment on a clean surface.
3. Prepare the supplement and begin the feeding process before the baby gets overly hungry or fussy.
4. Enlarge the hole on the artificial nipple by cutting it with clean scissors.
5. Insert the tip of the feeding tube through the bottom of the hole on the artificial nipple
6. Place the larger end of the feeding tube into the bottom of the bottle.
7. Place the required amount of supplement into the bottle, ensuring that the larger end of the feeding tube is submerged in the supplement fluid
8. Screw the nipple and cap onto the bottle.
9. Place the bottle on a surface that is level with the baby's head. Alternatively, place the bottle in a pocket of the mother's shirt that is level with the baby's head. **Caution:** If the position is too high, the flow of milk will be too fast and the baby may choke. If the position is too low, the baby will need more energy to suck and may tire easily and become frustrated.
10. Place the baby in a comfortable position, such as the cross-cradle position.
11. Line up the feeding tube so that it sits on the soft part of the index finger. The tip of the feeding tube should be level with the fingertip. Tape the tubing onto the finger behind the second joint to prevent the baby from sucking on the tape.
12. Gently touch the baby's lips with a finger until the mouth opens wide. Then allow the baby to suck, and draw the index finger with the feeding tube in past the baby's gumline with the nail side down on the tongue. In most cases the baby will begin to suck as soon as the finger pad reaches the middle of the hard palate. Try to keep the index finger flat in the baby's mouth (not pointing towards the palate). This will help to stimulate the tongue and jaw movements, which simulates breastfeeding by flattening the baby's tongue down and moving the lower jaw forward.

(Source: Adapted from Finger Feeding, (TPH, 2003b))

Cleaning Instructions When Using Finger Feeding

For Healthy Full-Term Babies at Home

- After each feeding, fill the small syringe with clean hot water.
- Insert the syringe into the larger end of the feeding tube. Push the plunger to force water into the feeding tube 3–5 times to clean it out. It is not necessary to use soapy water, but if soapy water is used, the tube must be thoroughly rinsed out.
- Force 1–2 plungers of air through the tube to clear out any remaining water.
- Hang the feeding tube to air dry in a clean area away from food preparation.
- Use a new feeding tube frequently, and especially if the tube becomes stiff, brittle or discoloured.
- Wash all other items in hot soapy water, then rinse well and air dry after each feeding. Store items in a dry and clean area away from food preparation.

(Source: Adapted from Finger Feeding, (TPH, 2003b))

For Premature or Hospitalized Babies and Mothers and/or Babies with Candidiasis

- Use a new feeding tube for each feeding. The tube cannot be sterilized by boiling. Hospital policies may vary.
- After each feeding at home, wash the bottle and artificial nipple in hot soapy water and rinse well. Then boil the items in a covered pot of water for 10 minutes (*Protocol #15: Candidiasis (Thrush) and CPSO, 2005*). Remove the items from the pot and allow them to air dry. Store items in a dry and clean area away from food preparation.

Paced Bottle Feeding

- Paced bottle feeding is an approach to feeding a baby with a bottle when the baby is unable to feed at the breast and the mother has made an informed decision to feed with a bottle (see *Informed Decision-Making about Infant Feeding*).
- For infants who may struggle to cope with the flow of milk from a bottle, paced bottle feeding can be less stressful.

Encourage the mother to:

- Watch for the baby's early feeding cues, (*Protocol #3: Signs of Effective Breastfeeding*) so that the

baby can be fed in a calm state, before becoming overly hungry or fussy. “Watch the baby, not the clock.”

- Hold the baby in an upright position, supporting the shoulders and neck, so that the baby’s neck can extend back into the natural drinking position, like breastfeeding.
- Use a slow-flow nipple
- Wait for an indication of the baby’s readiness to accept the bottle – opening the mouth.
- See that the entire nipple is in the baby’s mouth.
- Tip the bottle just enough that there is milk in the nipple. At the beginning of the feeding, the bottle will be almost horizontal, and slowly becomes more angled as the feeding progresses.
- Watch the baby for coordinated breathing, sucking and swallowing – or signs of distress. Pause the feeding frequently (about every 3 swallows) to mimic the pattern and pace of breastfeeding. To pause, try lowering the tilt of the bottle or removing the bottle from the baby’s mouth.
- Let the baby determine how much milk to take and when to stop feeding. Do not try to encourage the baby to finish the bottle. The feeding will likely take as long as an effective breastfeeding, once breastfeeding is established.

General Principles

Alternative feeding methods allow the mother to provide oral supplementation to her baby. Alternative feeding methods include cup feeding, spoon feeding, syringe feeding, the use of a lactation aid at the breast, finger feeding or paced bottle feeding. Alternative feeding methods are contraindicated if the baby does not have a suck, swallow, or gag reflex

It is important to support the mother in understanding the possible benefits and risks associated with the use of an alternative feeding method, so that she is able to make an informed decision about an appropriate method for supplementation. It is important to include discussion of her capacity to manage the intervention (see *Criteria for Selecting an Alternative Method of Infant Feeding* above).

Some mothers may find it overwhelming to manage the care and handling of the equipment associated with alternative feeding interventions. Offer further assessment and refer for additional support as needed.

Breastfeeding Self-Efficacy is the confidence that

a mother has in her ability to breastfeed her infant (Dennis, 1999). The mother must believe that she is capable of implementing any techniques or strategies that might be suggested (Bowles, 2011).

The evidence about alternative feeding methods is limited and is based upon the results of research involving feeding preterm infants that has been extrapolated to feeding healthy term infants.

Cue-based and baby-led practices should be applied in the use of alternative feeding methods wherever possible. Watching for the baby’s early feeding cues (*Protocol #3: Signs of Effective Breastfeeding*) and following the baby’s signals for readiness to accept food promotes a more normal feeding experience as well as facilitating a return to the breast.

A plan to wean from the alternative feeding method to feeding at the breast should be identified before the method is initiated. The plan should include regular (daily) monitoring by a health care professional with breastfeeding expertise to reassess when the breast milk supply has increased or that the baby’s latching and sucking has improved. The practitioner who initiates the use of an alternative feeding method is responsible for assessing the benefits and risks of that intervention, as well as for establishing a plan with the mother for the ongoing management and evaluation of the intervention. The baby’s weight gain and the mother’s breast milk supply need to be monitored closely. There must be a comprehensive plan that includes periodic reassessment of the breastfeeding and the infant’s intake of breast milk, as well as the re-establishment of feeding at the mother’s breast.

Although readily available, the bottle or artificial nipple is not the ideal method for most babies. Using a method other than the bottle reinforces the non-verbal message to parents that supplementation is temporary (Wight, 2005). An artificial nipple may cause the baby to become confused, particularly if breastfeeding is not well established. The process of suckling is complex and the mechanics of sucking at the breast and the bottle are different. “Nipple confusion” refers to a baby’s difficulty in achieving the correct oral configuration, latching technique, and suckling pattern necessary for successful breastfeeding after bottle feeding or other exposure to an artificial nipple (Neifert et al., 1995). See also *Protocol #1: The Initiation of Breastfeeding* regarding learning to suck and imprinting.

Babies need to learn the normal mechanics of sucking at the breast. This includes learning to manage the flow of milk from the breast. Feeding only at the breast helps to prevent the baby from learning to suck improperly on the breast tissue, which may in turn lead to breast refusal or painful nipples. As stated in Lawrence (2010), this “nipple confusion” has not been established in the medical literature, but there is strong evidence in the psychosomatic literature related to “imprinting” of sucking behaviours that supports the concept.

Imprinting – The concept of imprinting or “stamping” is sometimes used to explain the observation of nipple preference. Imprinting is drawn from other sciences, such as biology and psychology, where it has been applied to explain attachment behaviours and brain pathway development. In humans, imprinting is oral/tactile (Lawrence, 2010) and Gale Mobbs (1989) identified the mouth as the most significant factor in imprinting in humans. When babies are exposed to artificial nipples or finger early, they can become accustomed to the feeling of that particular object (bottle nipple, pacifier, finger) in their mouths and have difficulty accepting another object, such as a mother’s nipple, in its place (Righard, 1997).

Cup feeding has been found to support infant physiological stability and to be both effective and time efficient (Howard et al., 1999). It is the preferred alternative method for supplementing the non-breastfeeding baby (BFI Appendix 9, BCC, 2011). Gomes et al. (2006) found that babies use the same mouth and facial muscles for both cup feeding and breastfeeding. It is simple, safe, inexpensive, and non-invasive (Gupta et al., 1999). Cup feeding has been practiced traditionally around the world and therefore is familiar to many new Canadians. Howard et al. also found that cup feeding was a better way than bottle feeding to supplement babies born by caesarean section (Howard, 2003). Although some research found that cup feeding protects oxygen saturation rates (Renfrew et al., 2009) or may lead to oxygen desaturation (Rocha, 2002), the evidence is mixed (Collins et al., 2008). It is important that both parents and practitioners follow the baby’s cues to prevent him from being overwhelmed by the flow of milk

Finger Feeding – There is very limited research available to support the use of finger feeding as an alternative method of supplementation when a

baby is not feeding at the breast. Although some believe the mechanics of finger feeding are more like breastfeeding and it is used by some experts to evaluate the baby’s suck reflex, these have not been systematically evaluated. Nor is there data to establish safe practices for finger feeding. The adult finger is firmer and narrower than the breast. Some babies may find the feel of a feeding tube on their hard palate to be distracting (Wilson-Clay, 2008).

Although parents do not need to wear gloves, health care professionals should wear gloves before inserting anything into the baby’s mouth.

A Lactation Aid at the Breast enables the baby to stimulate the breast by sucking at the breast, as well as simulate the experience of remaining on the breast while receiving the supplement.

Paced Bottle Feeding – Paced bottle feeding is an approach to feeding a baby with a bottle when the baby is unable to feed at the breast and the mother has made an informed decision to feed with a bottle. With paced bottle feeding, the baby is better able to control the milk flow and set the pace of the feeding of either EBM or ABM. It supports cue-based feeding practices and transitioning to feeding directly at the breast.

Paced bottle feeding is physiologically similar to the pattern of breastfeeding. Breastfed babies normally exhibit a coordinated sucking and breathing pattern – “suck-swallow-breathe” – ideally in a 1:1:1 ratio. However, babies may not pause to breathe regularly when they are trying to cope with the fast flow of milk from a bottle. They may appear to be hungrily gulping the milk, when they are actually having trouble coordinating breathing and swallowing. These babies may become distressed.

The paced bottle feeding approach was originally used in NICUs for transitional feedings with premature babies. There is growing interest in extending this approach to any baby being bottle fed. Not only is it more comfortable for the baby to have the sucking, swallowing, and breathing coordinated, it helps to avoid overfeeding. When the baby controls speed, the baby also controls volume.

(Adapted from ABA, 2009; Wilson-Clay 2008 and Lauwers et al., 2011)

Supplementation may be provided in addition to breastfeeding or temporarily in place of breastfeeding until breastfeeding can be resumed (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).

EBM is the first choice as a supplement for most babies, particularly breast milk that is expressed after the baby has breastfed. When the mother expresses after a feeding, she may be able to drain

her breasts as much as possible and produce breast milk that is high in fat. This can provide the baby with extra calories. See *Protocol #17: Indications for Supplementation or Cessation of Breastfeeding* for further information.

If EBM is not available, then an appropriate supplement, ABM, should be offered (*Protocol #17: Indications for Supplementation or Cessation of Breastfeeding*).

References

- Australian Breastfeeding Association [ABA]. (2009). *A caregiver's guide to the breastfed baby*. Electronic copy retrieved (2011) from: <http://www.breastfeeding.asn.au/bf-info/breastfeeding-and-work/caregivers-guide-breastfed-baby>.
- Bowles, B.C. (2011). Promoting breastfeeding self-efficacy. *Clinical Lactation*, 2(1), 11–14.
- Breastfeeding Committee for Canada [BCC]. (2011). *BFI integrated 10 steps practice outcome indicators for hospitals and community health services*. Appendix 9: Artificial Teats Checklist. Electronic copy retrieved (2011) from: http://breastfeedingcanada.ca/documents/BCC_BFI_20110704_Final_BCC_BFI_Integrated_Indicators_English.pdf.
- Collins, C.T., Makrides, M., Gillis, J., McPhee, A.J. (2008). Avoidance of bottle during establishment of breastfeeds in preterm infants (Review). *Cochrane Database of Systematic Reviews* (4), CD005252.
- Collins, C.T., Ryan, P., Crowther, C.A., McPhee, A.J., Paterson, S., Hiller, J.E. (2004). Effect of bottles, cups, and dummies in breastfeeding in preterm infants: A randomized controlled trial. *British Medical Journal*, 329(7459), 193–8.
- College of Physicians and Surgeons of Ontario [CPSO]. (2004). *Infection Control in the Physician's Office*. Electronic copy retrieved (2011) from: http://www.cpso.on.ca/uploadfiles/policies/guidelines/office/infection_con_0lvzpdf.
- Dowling, D.A., Meier, P.P., DiFiore, J.M., Blatz, M.A., Martin, R.J. (2002). Cup-feeding for preterm infants: Mechanics and safety. *Journal of Human Lactation*, 18(1), 13–19.
- Gale Mobbs, E.J. (1989). Human imprinting and breastfeeding – are the textbooks deficient? *Breastfeeding Reviews*, 1(14), 39–41.
- Genna, C. Watson. (2008). *Supporting sucking skills in breastfeeding infants*. Sudbury (MA): Jones & Bartlett Publishers.
- Gomes, C.F., Thomson, Z., Cardoso, J.R. (2009). Utilization of surface electromyography during the feeding of term infants: A literature review. *Developmental Medicine & Child Neurology*, 51, 936–942.
- Gupta, A., Khanna, K., Chattree, S. (1999). Cup feeding: An alternative to bottle feeding in a neonatal intensive care unit. *Journal of Tropical Pediatrics*, 45, 108–110.
- Howard, C.R., deBlieck, E.A., ten Hoopen, C.B., Howard, F.M., Lanphear, B.P., Lawrence, R.A. (1999). Physiologic stability of newborns during cup- and bottle-feeding. *Pediatrics*, 104(5), 1204–1207.
- Howard, C.R., Howard, F.M., Lanphear, B., Eberly, S., deBlieck, E.A., Oakes, D., Lawrence, R.A. (2003). Randomized clinical trial of pacifier use and bottle-feeding and cup feeding and their effect on breastfeeding. *Pediatrics*, 111(3), 511–518.
- Lauwers, J., Swisher, A. (2011). *Counseling the nursing mother: A lactation consultant's guide*. (5th ed.) Sudbury (MA): Jones & Bartlett 515–524.
- Lawrence, R.A., Lawrence, R.M. (2010). *Breastfeeding: A guide for the medical profession*. Philadelphia (PA): Elsevier Mosby.
- Mohrbacher, N. (2010). *Breastfeeding answers made simple*. Amarillo (TX): Hale Publishing, p. 811–824.
- Neifert, M., Lawrence, R., Seacat, J. (1995). Nipple confusion: Toward a formal definition. *Journal of Pediatrics*, 126(6), S125–129.
- Oddy, W., Glenn, K. (2003). Implementing the baby friendly hospital initiative: The role of finger feeding. *Breastfeeding Review*, 11(1), 1–5.
- Renfrew, M., Craig, D., Dyson, L., McCormich, F., Rice, S., King, S.E. et al., (2009). *Breastfeeding Promotion for Infants in Neonatal Units: A systemic Review and Economic Analysis*. *Health Technology Assessment*, 13(4), 1–46

- Righard, L., Alade, M.O. (1997). Breastfeeding and the use of pacifiers. *Birth*, 24(2), 116–120.
- Riordan, J., Waumbach, K. (2010). *Breastfeeding and human lactation*. (4th ed.) Sudbury (MA): Jones & Bartlett.
- Rocha, N.M.N., Martinez, F.E., Jorge, S.M. (2002) Cup or Bottle for Preterm Infants: Effect on Oxygen Saturation, Weight Gain, and Breastfeeding. *Journal of Human Lactation*, : 18(2), 132–138
- Toronto Public Health [TPH] (2012). *Minimum standards of practice for breastfeeding*.
- Toronto Public Health [TPHa]. (2003a). *Lactation aid at the breast*, Parent resource.
- Toronto Public Health [TPHb]. (2003b). *Finger feeding*, Parent resource.
- Wight, N. (2005). *Reducing unnecessary Supplementation in the breastfed infant*. *Breastfeeding Update*. 5(1) 1–3
- Wilson-Clay, B. Hoover, K. (2008). *The Breastfeeding Atlas*. (4th ed). Manchaca (TX):BWC/KH Joint Venture, 107–116.