



BREASTFEEDING AIDS & DEVICES

Key Components of
Breastfeeding

OVERVIEW

- Breast Pumps
- Tools for Milk Catching
- Tools for Flat or Inverted Nipples
- Tools for Supplementing
- Pacifiers

BREAST PUMPS

Manual

Single electric

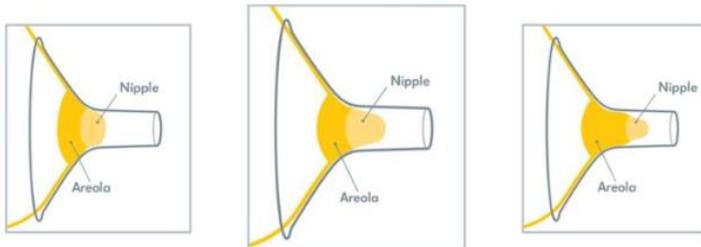
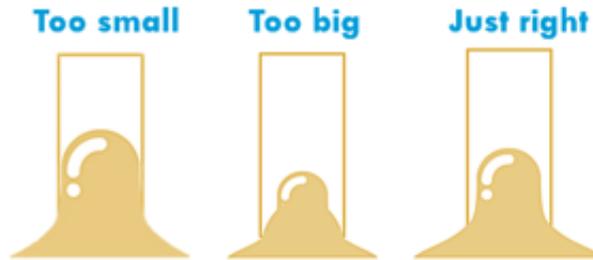
Double electric

Hospital grade

Hands free

PUMP FLANGES





PUMP FLANGE GUIDELINES

THREE WAY COMPONENT, TUBING, BOTTLE, AND VALVE



MANUAL BREAST PUMP



SINGLE ELECTRIC BREAST PUMP



DOUBLE ELECTRIC BREAST PUMP



HOSPITAL GRADE BREAST PUMP



HANDS FREE BREAST PUMP



GENERAL BREAST PUMPING GUIDELINES

- Pump for 10-20 minutes
- Ensure proper flange size and use
- Ensure appropriate suction
- Use “hands on pumping”
- Massage breasts after milk stops slowing and resume pumping or perform hand expression for a few more minutes
- Clean appropriately after each use

CONSIDERATIONS FOR PUMPING SUCCESS

- Provide regular removal to both breasts
- Milk production is typically highest in the morning
- Breast pumps do not provide the same degree of stimulation as that of a healthy, term baby
- Maternal emotional state can affect milk letdown
- If a mother has difficulty with milk let down while pumping, always rule out mechanical issues first

MILK STORAGE GUIDELINES

Human Milk Storage Guidelines

TYPE OF BREAST MILK	STORAGE LOCATIONS AND TEMPERATURES		
	Countertop 77°F (25°C) or colder <i>(room temperature)</i>	Refrigerator 40 °F (4°C)	Freezer 0°F (-18°C) or colder
Freshly Expressed or Pumped	Up to 4 Hours	Up to 4 Days	Within 6 months is best Up to 12 months is acceptable
Thawed, Previously Frozen	1–2 Hours	Up to 1 Day <i>(24 hours)</i>	NEVER refreeze human milk after it has been thawed
Leftover from a Feeding <i>(baby did not finish the bottle)</i>	Use within 2 hours after the baby is finished feeding		

These guidelines are for healthy full-term babies and may vary for premature or sick babies. Check with your health care provider.

Find more breastfeeding resources at: WICBreastfeeding.fns.usda.gov
www.cdc.gov/breastfeeding/



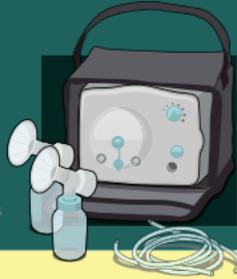
CERTIFIED

BREAST PUMP CLEANING GUIDELINES

Accessible version: www.cdc.gov/healthywater/hygiene/healthychildcare/infantfeeding/breastpump.html

How to Keep Your Breast Pump Kit Clean

Providing breast milk is one of the best things you can do for your baby's health and development. Pumping your milk is one way to provide breast milk to your baby. Keeping the parts of your pump clean is critical, because germs can grow quickly in breast milk or breast milk residue that remains on pump parts. Following these steps can help prevent contamination and protect your baby from infection. If your baby was born prematurely or has other health concerns, your baby's health care providers may have more recommendations for pumping breast milk safely.



BEFORE EVERY USE

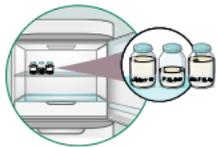


Wash hands with soap and water.

Inspect and assemble clean pump kit. If your tubing is moldy, discard and replace immediately.

Clean pump dials, power switch, and countertop with disinfectant wipes, especially if using a shared pump.

AFTER EVERY USE



Store milk safely. Cap milk collection bottle or seal milk collection bag, label with date and time, and immediately place in a refrigerator, freezer, or cooler bag with ice packs.

Clean pumping area, especially if using a shared pump. Clean the dials, power switch, and countertop with disinfectant wipes.

Take apart breast pump tubing and separate all parts that come in contact with breast/breast milk.

Rinse breast pump parts that come into contact with breast/breast milk by holding under running water to remove remaining milk. Do not place parts in sink to rinse.

Clean pump parts that come into contact with breast/breast milk as soon as possible after pumping. You can clean your pump parts **in a dishwasher** or **by hand** in a wash basin used only for cleaning the pump kit and infant feeding items.

Follow the cleaning steps given on the next page.



Clean Pump Kit

CLEAN BY HAND



Place pump parts in a clean wash basin used only for infant feeding items. **Do not place pump parts directly in the sink!**

Add soap and hot water to basin.

Scrub items using a clean brush used only for infant feeding items.

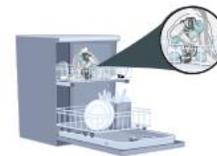
Rinse by holding items under running water, or by submerging in fresh water in a separate basin.

Air-dry thoroughly. Place pump parts, wash basin, and bottle brush on a clean, unused dish towel or paper towel in an area protected from dirt and dust. Do not use a dish towel to rub or pat items dry!

Clean wash basin and bottle brush. Rinse them well and allow them to air-dry after each use. Wash them by hand or in a dishwasher at least every few days.



OR CLEAN IN DISHWASHER



Clean pump parts in a dishwasher, if they are dishwasher-safe. Be sure to place small items into a closed-top basket or mesh laundry bag. Add soap and, if possible, **run the dishwasher using hot water and a heated drying cycle (or sanitizing setting).**

Remove from dishwasher with clean hands. If items are not completely dry, place items on a clean, unused dish towel or paper towel to air-dry thoroughly before storing. Do not use a dish towel to rub or pat items dry!

After Cleaning

FOR EXTRA PROTECTION, SANITIZE



For extra germ removal, sanitize pump parts, wash basin, and bottle brush **at least once daily** after they have been cleaned. Items can be sanitized using steam, boiling water, or a dishwasher with a sanitize setting. Sanitizing is especially important if your baby is less than 3 months old, was born prematurely, or has a weakened immune system due to illness or medical treatment.

For detailed instructions on sanitizing your pump parts, visit www.cdc.gov/healthywater/hygiene/healthychildcare/infantfeeding.html

STORE SAFELY



Store dry items safely until needed. Ensure the clean pump parts, bottle brushes, and wash basins have air-dried thoroughly before storing. Items must be completely dry to help prevent germs and mold from growing. Store dry items in a clean, protected area.

Learn more about safe and healthy diapering and infant feeding habits at www.cdc.gov/healthywater/hygiene/healthychildcare.



Centers for Disease Control and Prevention
National Center for Emerging and Zoonotic Infectious Diseases

TOOLS FOR MILK CATCHING

Silicone manual breast “pumps”

Hands free suction milk collectors

Passive milk collection shells

Colostrum collectors

SILICONE MANUAL BREAST "PUMPS"



HANDS FREE SUCTION MILK COLLECTORS



PASSIVE MILK COLLECTION SHELLS



COLOSTRUM COLLECTORS



TOOLS FOR FLAT OR INVERTED NIPPLES

Inverted syringe

Commercial eversion products

Breast Shells

Nipple Shields



COMMERCIAL EVERSION PRODUCTS



BREAST SHELLS





NIPPLE SHIELD

APPROPRIATE USES FOR NIPPLE SHIELD

- Infants with decreased muscle strength/tone
- Premature infants
- Short tongue
- Tongue tie
- High palate
- Flat/inverted nipples
- Transition to breastfeeding from a bottle
- Cleft lip/palate
- Infant has trouble controlling excessive milk flow
- Reduce pain caused by excessive infant suction



NIPPLE SHIELD CONSIDERATIONS

- Material
- Design
- Size
- Placement
- Application
- Appropriate latch
- Weaning
- Care/Cleaning



TOOLS FOR SUPPLEMENTING

Spoon feeding

Cup feeding

Tube feeding

Syringe feeding

Bottles

SPOON FEEDING

- Spoons placed at the tip of the baby's tongue are useful to feed calories through small amounts of colostrum or milk or to encourage latch and suckling



This spoon can lead to your breastfeeding success.

Most babies are born ready to breastfeed. When kept **skin-to-skin** with mother, many babies will latch on their own.

If baby needs a little help, mom can hand express colostrum and offer it on a spoon. See how on the back.

After a taste of colostrum, baby may be more alert and ready to latch; the first step toward breastfeeding success!

Colostrum is the first, most nutritious milk. Baby has a tiny tummy and eats only about 1 to 3 teaspoonfuls at every feeding for the first two days of life. If baby is not latching, mom can hand express and offer baby a taste from her nipple, finger, or a spoon.

How to Hand Express Colostrum:

1. Wash hands & spoon. Massage breast.
2. Place fingertips wide on breast, in line with nipple.
3. Keep fingers wide, press straight back, in toward mom's ribs.
4. Gently compress & relax hand.
5. Repeat steps 2-4 until drops come.
6. Collect drops on a clean spoon. Feed to baby.

How to Spoon Feed Your Newborn:

- Swaddle baby.
- Sit baby upright in your lap.
- Support baby's head.
- Touch spoon to lower lip.
- Baby will lap or sip the colostrum.
- Do not pour into baby's mouth.

After a spoonful, try again to breastfeed.

For links to breastfeeding help and more go to www.LactationStuff.com
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FRONT

((LAUWERS & SWISHER, 2021)
 BACK

CUP FEEDING

- Cups are useful for larger amounts of milk to initiate or supplement breastfeeding
- Cup feeding can help protect and increase breastfeeding duration in infants requiring supplementation.
- To avoid risk of aspiration, allow the baby to lead the feeding and pause between swallows

(LAUWERS & SWISHER, 2021)

CUP FEEDING

A BABY NOT FED AT THE BREAST CAN BE FED WITHOUT A BOTTLE

Cup feeding can be used from birth. It is suitable for both expressed breastmilk and infant formula. You can use any clean, open cup with a smooth surface.

Cup feeding has no notable difference to bottles for average time per feed.

Cups are safer than bottles. Bottle teats and screw tops trap germs that can get into the milk and make babies ill. Cups are easily cleaned with washing in hot soapy water, and do not need sterilising like bottles.

In emergencies, use disposable cups.



Feeding time is bonding time - lots of cuddles, eye-contact, talking, smiling, humming and singing.

CUP FEEDING IS AS EASY AS 1-2-3!

Sit baby upright on your lap and support their back and neck. With small babies it can help to wrap them with a cloth, to keep their hands from knocking the cup.

1

Hold a small cup of milk to rest the rim lightly on baby's lower lip. Then tilt the cup, keeping the milk at the rim of the cup, just in reach of baby's lips. Baby should be alert, and open both their mouth and eyes.

2

Go Slow. DO NOT POUR the milk into baby's mouth. Always let baby lead the pace of sips, swallows and pauses. Still keep the milk just at the cup's rim. When baby is full, they will close their mouth and will not take anymore.

3



Babies will suck or sip the milk, or may use their tongue to lap it up like in this picture on the left.

Cup feeding gives babies freedom to move their tongue in a way that is closer to the 'suckle' reflex used for breastfeeding.

Did you know you can re-establish breastfeeding through a process called relactation?

Breastfeeding saves lives, especially in emergencies.

Reach out to a breastfeeding counsellor to learn more.

Adapted from The World Health Organization - Infant Feeding in Emergencies: A Guide for Mothers and UNICEF/WHO 20-hour Baby Friendly Hospital Initiative Course by Magdalena Whoolery (PhD Health Studies, BSc Nursing, Dip HE Nursing) and Julie Fogarty (BFA, GradDipTchg), January 2020 (updated April 2020). Poster endorsed by the following:



COMMERCIAL CUPS

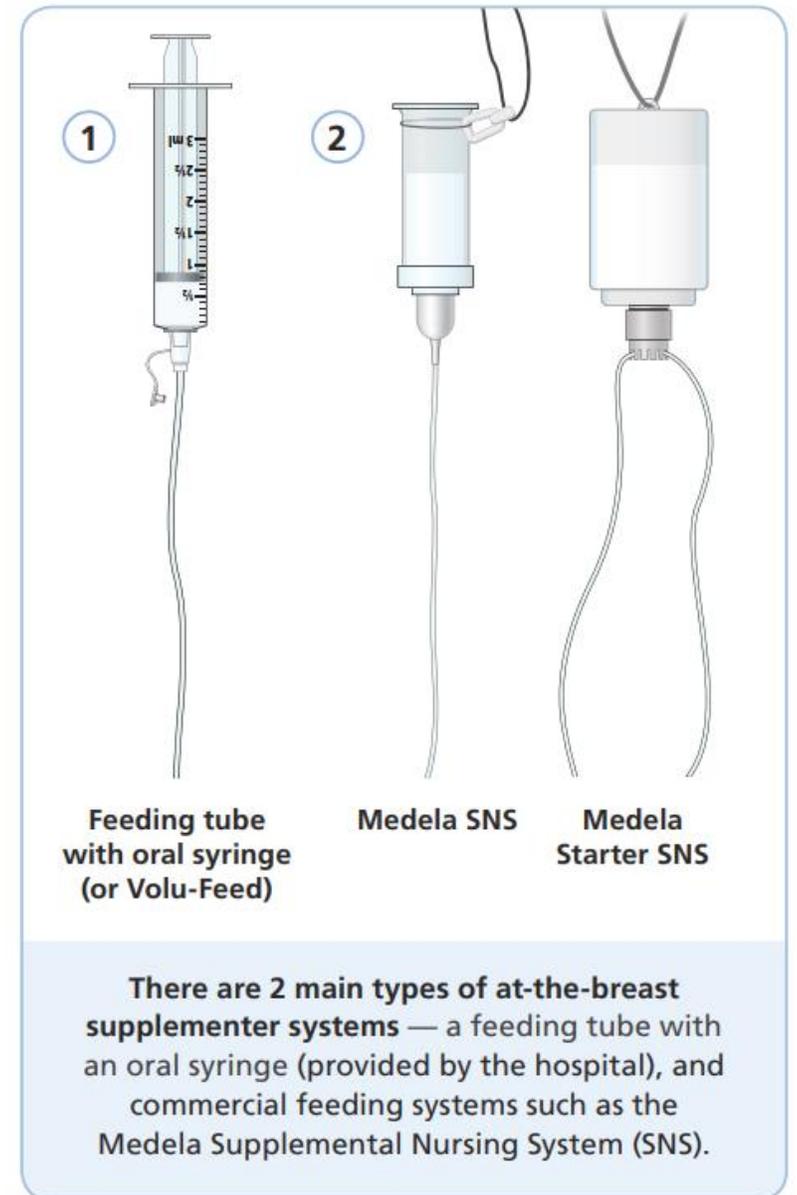


STEPS FOR CUP FEEDING

- Fill cup halfway or less with milk (approx. 10-15ml)
- Hold infant in semi-sitting position
- Bring the cup to the baby's lips and rest the rim of the cup on the lower lip so it touches the corners of the mouth
- Tip the cup until the milk touches the baby's lips
- The baby will begin to lap the milk from the cup and tongue will form a trough to bring the milk to the back of the throat to swallow
- To avoid aspiration: do not pour milk directly into the infant's mouth and make sure to use slow pacing.

TUBE FEEDING

- Tube feeding devices provide supplementation while the baby sucks at the breast
- Useful when there is little to no milk or to encourage nutritive sucking
- Check infant's roof of mouth to ensure no irritation from tubing
- Clean after every use by flushing with cold water, washing with hot soapy water, and then flush with clear water



(LAUWERS & SWISHER, 2021)

SUPPLEMENTAL NURSING SYSTEM (SNS)



STEPS FOR TUBE FEEDING

- Feeding tube should extend a few centimeters beyond the end of the nipple
- Feeding tube may be taped to the breast to stay in place
- If the device has two tube, one can be used as a vent or both tubes can be used on one breast
- Position milk container level with, above, or below infant's head depending on desired flow rate
- Perform alternate breast massage during the feeding to encourage milk flow and the baby to suck
- Volume supplemented should be adjusted according to milk received from the breast

FINGER FEEDING

- Uses tubing placed at the end of the finger, instead of the nipple, to deliver nutrition to the baby
- More invasive than tube feeding at the breast
- May be useful for a baby with a disorganized suck or who needs stimulation to elicit suckling
- Not useful if infant does not respond to the finger by suckling or cannot sustain sucking bursts
- Commercial nursing supplementer or 5, 6, or 8 French OG tube on the end of syringe with plunger removed, or tubing in a bottle may be used



STEPS FOR FINGER FEEDING

- Place appropriate volume in container attached to tubing
- Prime the tubing with milk
- Hold baby in semi upright position
- Adjust milk container position based on desired flow rate
- Use clean index finger, fat pad up, and ensure nail is short and smooth
- Tickle infant's lips to open mouth and insert finger with tube on it against hard palate
- Do not push finger into baby's mouth
- Goal to elicit one suck per swallow

SYRINGE FEEDING

- Uses standard or periodontal syringe placed at the breast, at the tip of the ringer, or under a nipple shield to delivery milk and elicit sucking
- Use caution
- Avoid poking infant's tongue, gums, or palate
- If using finger or breast, place syringe in corner of infant's mouth
- Place small amount of milk toward front third of the tongue to encourage infant's tongue to extend outward
- When sucking begins, remove syringe and transfer baby to breast to feed

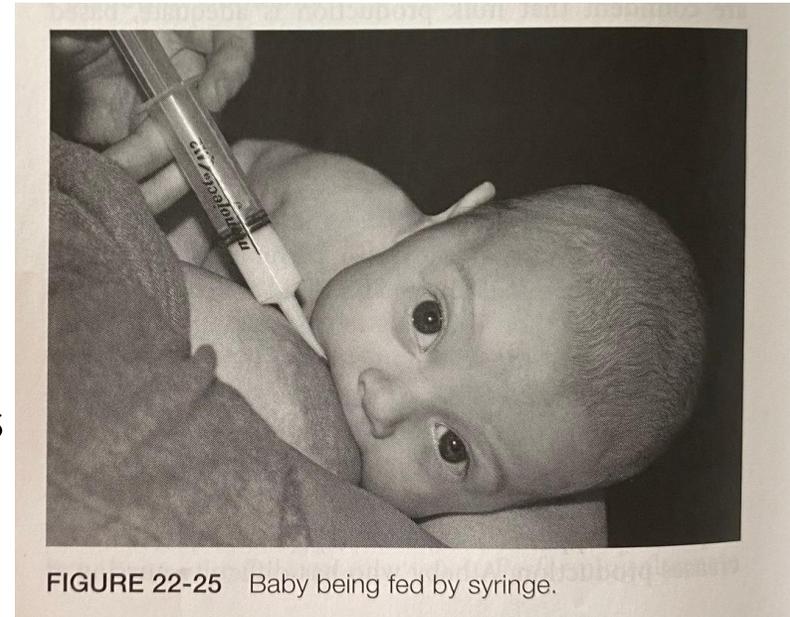


FIGURE 22-25 Baby being fed by syringe.

BOTTLE FEEDING

- Bottles and nipples cannot mimic baby-led feeding at the breast and are associated with breastfeeding problems
- Flow and sucking mechanisms are different at breast vs. bottle
- Watch for cues that infant is responding favorably to feeding and is able to suck on nipple appropriately
- Paced bottle feeding helps put infant in control of feeding, responds to hunger cues, and monitors for feeding stress
- Parents need instruction in safe preparation and storage of formula, bottle feeding, and incorporating bonding behaviors

BOTTLE NIPPLES

- No research to support preferred bottle nipple or standards for flow rate
- Flow rate should match infant's ability to suck, swallow, breathe
- Nipple with wide base may help when combining breast and bottle feeding
- Avoid nipple that causes pursing of infant's lips and smacking/clicking sounds



STEPS FOR BOTTLE FEEDING

- Touch the corners of the infant's mouth to stimulate sucking
- Allow infant to root for the nipple
- Insert the nipple into the baby's mouth and over the tongue
- Position the infant in a flexed position so head is above the stomach and midline
- Hold bottle at horizontal angle prevent rapid flow
- Used paced feeding
- Avoid rocking motion while feeding to avoid overstimulation
- Avoid constantly moving nipple in mouth which may cause stress
- Observe infant for signs of stress

SIGNS OF STRESS DURING BOTTLE FEEDING

Aversive behaviors during feeding indicate stress, discomfort, or that something about the feeding is not working

- Color change
- Tachypnea or nasal flaring
- Shallow breathing
- High-pitched crowing noise
- Drooling
- Gulping
- Coughing
- Choking
- Changes in oxygen needs
- Squirming
- Arching
- Yawning
- Hiccupping
- Finger splaying
- Increased fussiness
- Saluting sign
- Covering face with hands
- Looking away from caregiver
- Tongue extension
- Falling asleep
- Changes in vital signs
- Hypertonicity or motor flaccidity

PACIFIERS

“For breastfed infants, delay pacifier introduction until breastfeeding is firmly established. This is defined as having sufficient milk supply; consistent, comfortable, and effective latch for milk transfer; and appropriate infant weight gain as defined by established normative growth curves. The time required to establish breastfeeding is variable.”

AAP, 2022

PACIFIERS

- Help meet sucking needs of bottle-fed infants
- Can potentially help breastfeeding infants in limited circumstances
- Preterm infants benefit from pacifier during gavage feedings and when non-nutritive sucking at the breast is not an option
- Helps calm infants undergoing painful procedures
- Available designs:
 - Round versus orthodontic shape
 - Multiple parts versus solid silicone
- Avoid latex pacifiers to minimize future latex allergy risks



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PACIFIERS & BREASTFEEDING

- Consider reason for use & avoid overuse
- Use only after needs for food, comfort, and human contact are fully met
- Non-nutritive sucking on mother's breast is a great alternative
- All effort should be made to prevent separation of mom & baby

(LAUWERS & SWISHER, 2021)

WHAT IF WE TOLD YOU
THAT YOUR BABY ISN'T
USING YOU AS A
PACIFIER, BUT THAT
THEY'RE USING A
PACIFIER AS YOU?



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