

# Breastmilk Expression and Storage for Infants in the Neonatal Intensive Care Unit



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It is recommended that all babies should be fed with their mother's breastmilk because it contains everything the baby needs. It protects babies from common acute and chronic illnesses. Breastfeeding benefits mothers, as well as families, and the country, in general.

Mothers should initiate breastfeeding immediately after birth and express their milk within the first 6 hours after delivery. This can be done by manual hand expression or with the use of an electric breast pump, especially if the mother and baby are separated after birth due to medical reasons.

### **Breastmilk Expression**

#### **Why do you need to express breastmilk?**

- To provide adequate nutrition while your baby is still unable to directly breastfeed because of illness, prematurity, etc.
- To stimulate and maintain further milk production.
- To reduce discomfort due to breast conditions like breast fullness, cracked and damaged nipple, breast infection, blocked duct, etc.

#### **How can you express breastmilk?**

Milk expression can be done by hand, or by manual or electric breast pump.

#### **Before you get started:**

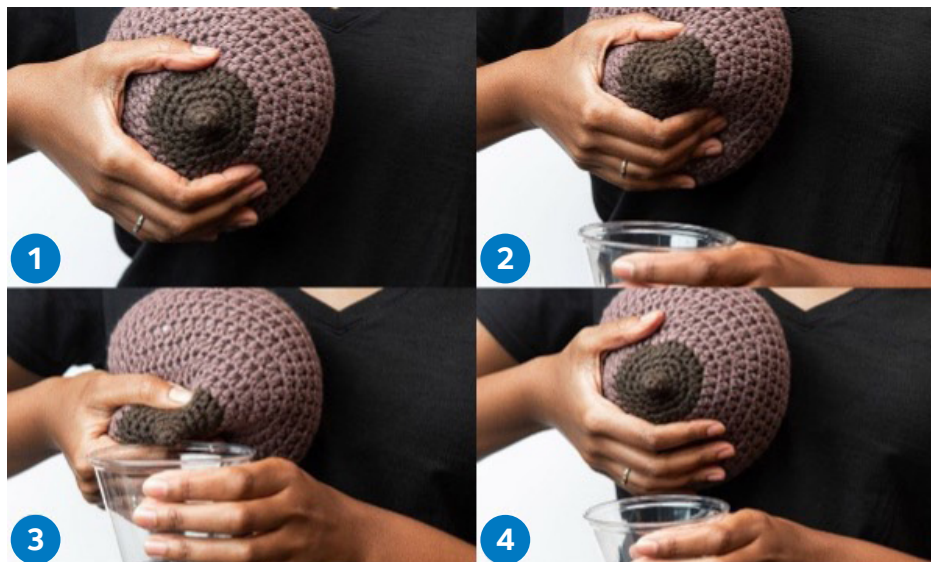
- Wash hands with soap and warm water or use hand sanitizer to reduce the risk of infection.
- Prepare a sterile container with a wide opening to collect the milk.
- Find a comfortable position and lean forward slightly to allow gravity to help.
- Apply warm towels to the breast or take a warm bath to soften the breast.
- Massage the breast in circular or rolling motion to help release the milk.

## 1. Hand Expression

This is gentle and simple way for a mother to express breastmilk using her hand.

### Steps of hand expression:

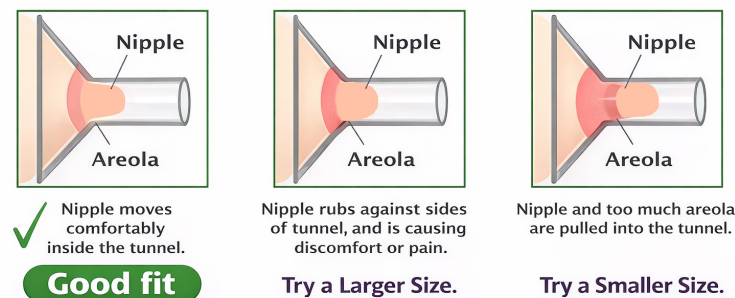
- Position your thumb 1-2 inch above the nipple and your fingers in the opposite side making a shape of the letter “C”.
- Press your fingers and thumb back toward your chest
- Gently compress your fingers and thumb together and when milk comes out release.
- Repeat in a rhythmic pattern: Press, Compress, Release. Continue until the milk stops and then switch to the other breast.
- Change the position of the fingers around the nipple to express milk from different ducts.
- Do not squeeze hard or pull the nipple. Hand expression should not hurt.
- Maximize pumping to ensure best milk supply. In 4 -5 days after delivery, the milk production should increase from 50 - 70 mL to 80 - 120 ml per day. By 2 weeks it may increase to 440 - 1,200 mL per day.



## 2. Breast Pump Expression

A breast pump is a mechanical device that breastfeeding mothers use to remove milk from their breasts. They may be manual devices powered by hand movements or electrical devices, powered by batteries or electricity.

Before starting breast pump expression, ensure that the breast shield fit has been done. Improper fitting may cause improper emptying of the breasts, nipple soreness and pain, skin breakdown and even excoriated nipples.



### How to express milk using a breast pump:

- Ensure that all parts of breast pump are clean especially the part which contacts the breast and milk, including the sterile bottle for milk collection. Parts should be fixed correctly.
- Attach the breast shield to the breast. Ensure that nipple is at the center and has a good seal between the breast shield and breast.
- Start the pump. If the nipple hurts, remove the breast shield and check the nipple if it is properly positioned (correct pumping should not hurt).
- Express the milk until the breast is completely empty or at least for 20 minutes (with a break of 5 minutes after 10 minutes of pumping). If using a single pump, switch to the other breast after 10 minutes then repeat the cycle once again. Having a break after 10 minutes of pumping will increase amount of expressed milk.
- Use your free hand to massage the breast while pumping. This will help in emptying your breast and will increase your milk production.
- Pump for at least 15 minutes when double pumping. Double pumping is not only faster but is more effective in removing milk as it stimulates an additional milk ejection.

### Labeling and Storing of Expressed Breastmilk

- Once expressed, the breast milk should be stored correctly to prevent spoiling if you do not need it straight away.
- Store in small amounts to avoid wasting milk according to baby needs.
- Leave at least 2.5cm to 3cm of space at the top of the container as milk expands when it freezes.
- Seal the container with the lid.
- The container should be labeled with your baby's name, the date and and time expressed before putting it in the fridge or freezer.
- Freshly expressed breast milk should be used first to maximize the immunologic properties of the breast milk.
- When using frozen milk, use the oldest milk first (first in, first out).

### Freshly Expressed Breastmilk Can Be Stored For:

<b>Room temperature</b>	25 to 27°C	Up to 4 hours
<b>Fridge</b>	0 to 4°C	Up to 48 hours
<b>Freezer</b>	-18 to -22° C	3 months
<b>Deep freezer</b>	-20°C	6 months

- \* Do not keep breast milk in the door of the fridge.
- \* Once in the fridge, keep breast milk away from food with strong odors.

### Transportation of Breastmilk

- Transport the expressed breastmilk in a portable cooler or ice box.

### Warming and Thawing Expressed Breastmilk

#### Freshly Expressed Breastmilk

If the expressed breastmilk is kept at room temperature, it can be given directly without warming.

#### Refrigerated Breastmilk

Place the bottle in bowl of warm water or hold the bottle under cold running water then slowly run warm water until it warms.

#### Frozen Breastmilk

- Put the bottle or the bag of frozen breastmilk in the refrigerator overnight, hold it under warm running water, or set it in a container of warm water.
- Don't thaw or heat frozen breast milk in a stove, microwave or boiling water.
- Once fully thawed, it may be kept at room temperature for a maximum of two hours or in the refrigerator for up to 24 hours.
- Thawed breast milk left at room temperature should be fed to your baby within two hours.
- Never re-freeze breast milk once thawed.

### Signs of Ineffective Milk Expression

- Reduction in milk flow [<500ml at 14 days after delivery)
- Full, hard or painful breasts
- Sore nipple or breast

**Overcoming Difficulties of Not Having Enough Breastmilk**

- Being physically and mentally comfortable will increase your confidence.
- Maintain eye contact, touch, talk or cuddle your baby.
- Express breastmilk by your baby’s bedside.
- Initiate early breastfeeding and practice regular skin-to-skin contact for at least an hour, 6-8 times a day, before milk expression.
- Empty the breast completely at least 8 times a day. Intervals should not exceed more than 4 hours.
- Express at least twice during the night, between 11pm – 5am. This is when your body releases the hormone that makes your milk.

**Breastmilk Expression in the NICU:**

- Mothers in the NICU are given 1 single pump set with an instruction manual for breastmilk expression.
- Always bring your pump set when you come to the NICU. You may clean and sterilize the pump set at home. If you are unable to do so, a steam sterilizer is available in the NICU for use.
- Inform the nurse that you want to express milk at your baby’s bedside so that she can prepare the materials and other equipment (electric breast pump, sterile bottles) needed.
- If possible, expression of breast milk is done after skin-to-skin (kangaroo) care.
- The recommended mode to be used for effective pumping is as follows:

<b>Stimulation phase</b>	<ul style="list-style-type: none"><li>• This phase is for 2 mins.</li><li>• It mimics the sucking of a term newborn to increase milk production.</li></ul>
<b>Expression phase</b>	<ul style="list-style-type: none"><li>• For milk removal.</li></ul>

- Start the pumping session. You may look at, touch or talk to your baby when expressing milk.
- Give the freshly expressed breastmilk to the nurse to be labeled with the correct patient sticker, date and time of expression.

**Once your baby is ready to feed directly from the breast**

Different strategies may be done before your baby starts feeding from your breast. Skin-to-skin care, breast exploration, non-nutritive sucking at the breast are some of these strategies that will allow your baby to be familiar with feeding from your breast.

If you are unavailable for direct breastfeeding, your baby may be fed with different feeding devices such as a cup, syringe, spoon and others.

