

Expressing Breast Milk



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Introduction

What is breast expression?

Expressing breastmilk is an acquired skill and can be done for multiple reasons. The method used to express breastmilk will be based on why the mother is expressing milk and whether it will be long or short term. A delay in breast stimulation can affect the mother's milk supply.

Why should I breast express?

You may decide to breast express if you have:

- Preterm baby
- Late preterm baby (34-36 weeks)
- Separation of you and your baby
- Infant with a decreased ability to breastfeed due to medical condition
- Medications and/or treatments incompatible with breastfeeding
- Infant with an ineffective suck or difficulty latching
- History of breast surgery
- A reduced milk supply (that you want to increase)
- Made an informed decision to breast pump

Methods of breast expression

As a parent, you may decide to (1) hand express or (2) use a breast pump/pumping.

What should I do before I start to express?

- Wash your hands for at least 15 seconds
- Clean all your equipment
- Have the equipment ready
- Decrease distractions (turn off electronics, close the door etc.)
- Have food and a drink available
- Use relaxation techniques like listening to music, breathing exercises, etc. to stop certain hormones that can hinder lactation
- Use stimuli that remind you of the baby (e.g. baby pictures, baby sound recordings etc.) to help trigger lactation

What should I do while I breast express?

During your breast expression session, try these techniques to have a comfortable experience and to improve milk flow.

- Visualize the milk flowing out from the breast
- For hand expression, switch breasts several times, when the flow decreases (if expressing one breast at a time)
- Do not be concerned if you only get a few drops when first learning to express breastmilk. This is common, especially after birth.

Hand Expression

What is Hand expression?

Hand expression is an essential and acquired skill that is an effective technique to express breastmilk. **Hand expression is the preferred method of breastmilk expression during the first 24 hours after birth.** It should be initiated as soon as possible after the birth of the baby. The technique requires practice but can result in an increased milk supply. Additionally, hand expression is done at no cost and can be performed anywhere, anytime. This skill can also be started during labour to potentially reduce the chance of using formula after birth. Your healthcare provider will discuss hand expression during labour with you.

Benefits of hand expression

Hand expression has many benefits. For a few examples, hand expression can:

- Guide a baby to latch onto the breast by expressing a few drops onto the breast
- Collect colostrum for infants
- Stimulate the breasts
- Help sore or tender nipples by covering them with colostrum
- Provide relief for engorged breasts
- Collect milk that can be used later
- Help improve hypoglycemia
- Increase your milk supply

How to hand express

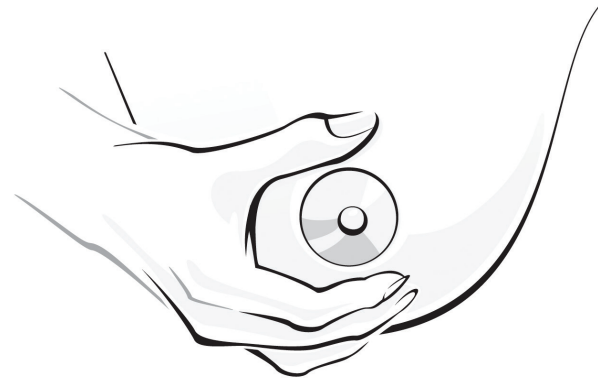
What do I need to hand express?

- Warm cloth
- Clean medicine cup or spoon (used to collect the expressed colostrum or milk)

Steps

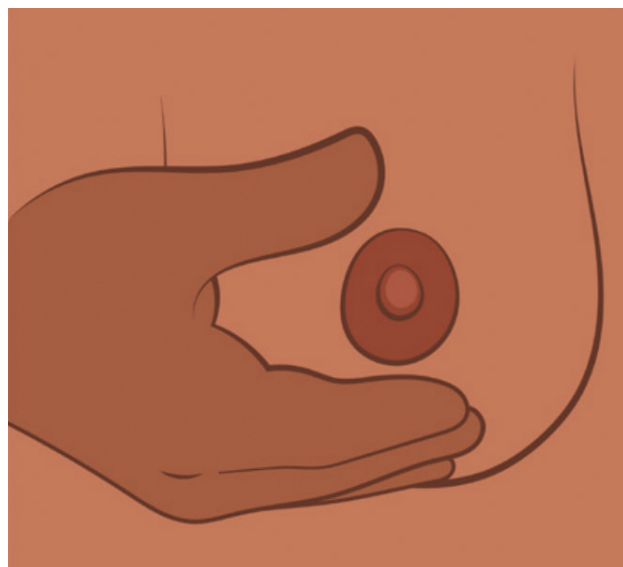
1. Wash your hands well with soap and water
2. Position yourself sitting upward, and leaning forward slightly
3. Stimulate the “let-down” reflex
 - a. Place a warm cloth around your breast(s), have a warm shower or use relaxation techniques such as breathing exercises, listening to music, and looking at your baby or hearing their sounds.
 - b. Massage the breast(s) in a gentle motion working from the outside and working towards the nipple. This massaging action will help stimulate colostrum or breastmilk to start flowing and will soften the breast(s).

4. Lift the breast and place the fingers approximately 1 - 1 ½ inches behind the nipple, with the thumb placed at the top of the nipple and the index, ring and middle finger on the bottom side of the nipple (please see the picture below)
 - a. Your thumb and fingers should be on opposite sides of the nipple in a “C” shape.



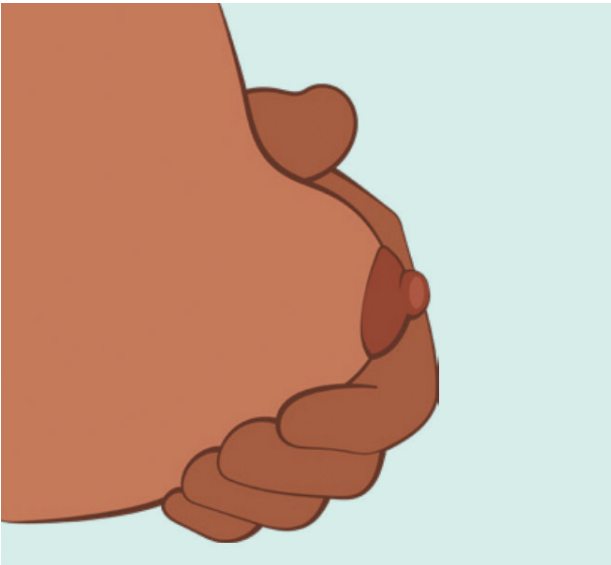
(Toronto Public Health, 2013)

5. Begin to hand express breastmilk
 - a. Press straight back towards the chest wall



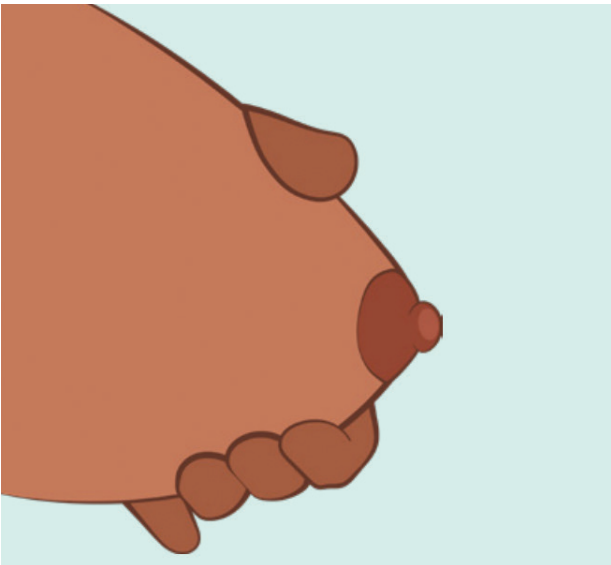
(Kingston Health Sciences Centre, 2018)

- b. Compress the breast gently between the thumb and the fingers and roll the fingers towards the nipple, being careful not to squeeze the base of the nipple



(Kingsion Health Sciences Centre, 2018)

- c. Relax the fingers



(Kingsion Health Sciences Centre, 2018)

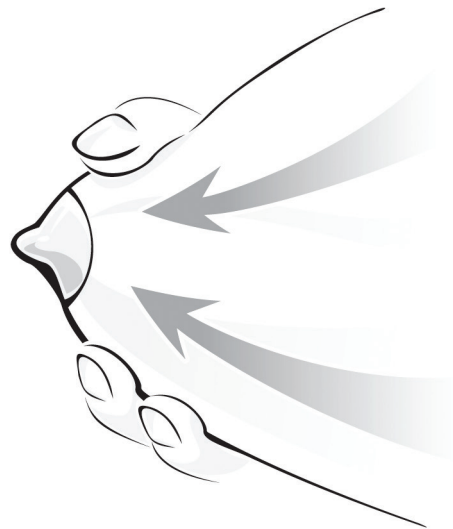
- d. Rotate the finger and thumb placement around the nipple, maintain the “C” shape and repeating the **PRESS, COMPRESS, RELAX**

- e. When the flow of colostrum or breastmilk decreases, switch to the other breast. It is normal for this to occur multiple times throughout the expression

6. Collect the expressed colostrum or milk throughout the session using a spoon or clean medicine cup
7. Continue to hand express until the flow of breastmilk or colostrum has stopped (may take up to 15-20 minutes)



(Toronto Public Health, 2013)



(Toronto Public Health, 2013)

Antenatal hand expression

Antenatal hand expression is a term used to describe when a parent decides to hand express during pregnancy and store the expressed colostrum for later use. The colostrum can be used to feed their baby after delivery.

Performing hand expression before delivery may decrease the chance of using formula after birth. Other reasons a parent may want to hand express during pregnancy include:

- Gestational diabetes
- Cleft lip or palate
- Congenital conditions (e.g. Down's Syndrome, cardiological or respiratory conditions)
- Family history of sensitivity to cow's milk
- Breast hypoplasia (limited breast development)
- Previous breast surgery
- Previous low milk supply

Antenatal hand expression can be initiated at 36 weeks of pregnancy and can be done for 3-5 minutes at a time. This colostrum that is collected can be stored in the refrigerator freezer for up to 3-6 months and in the deep freezer for up to 6-12 months.

How to feed the expressed colostrum/breastmilk to your Infant

When feeding your baby the colostrum or breastmilk collected from hand expression, try:

- Cup feeding



(Toronto Public Health, 2013)

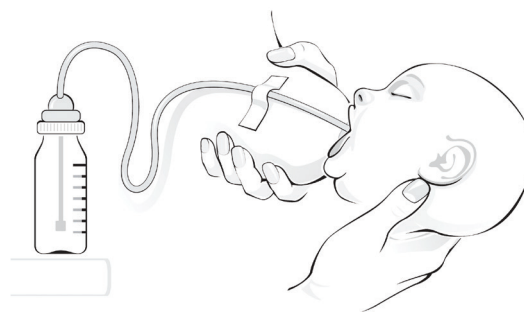
- Spoon feeding

- Finger Feeding



(Toronto Public Health, 2013)

- Using a lactation aid at the breast (i.e. supplemental nursing system)



(Toronto Public Health, 2013)

Frequency of hand expression (and pumping)

First 24 hours after birth

Hand express early and frequently, ideally beginning within an hour after birth and then at least 6 to 8 times in the first 24 hours (every 3-4 hours). It is important to keep whatever amount of colostrum you are able to express, even if it is just drops.

For a baby in the Neonatal Intensive Care Unit (NICU), initiate hand expression as soon as possible, ideally within an hour of birth and initiate pumping within 4-6 hours after delivery, along with hand expression. Remember that in the first 24 hours after delivery, it is common to have very small amounts of expressed colostrum/breastmilk.

Beyond 24 hours

Hand express on a regular basis after feeding until the milk comes in on Day 2 or 3. If breastfeeding is stopped for any length of time, express breastmilk (by hand or pump) on a regular basis in order to maintain a milk supply, generally at least 8 or more times in 24 hours (at least every 3 hours), with at least 1 expression during the night.

Breast Pumps

Kingston Health Sciences Centre (KHSC) uses the Ameda Platinum® breast pump (shown below).

(Ameda, 2013)

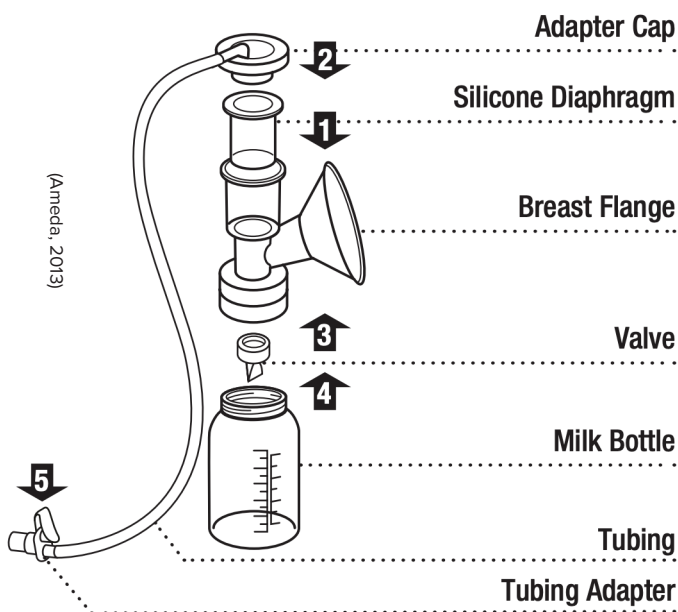


When to start and how often? How much should I Pump?

Pumping is initiated as soon as possible after delivery. Pumping needs to occur 8 or more times in 24 hours (at least every 3 hours) in order to stimulate greater milk production. Initially, this will include pumping throughout the night until between 750-1000 ml in a 24 hour period is produced. Pump until your breasts are empty.

How to prepare and use (Refer to diagram)

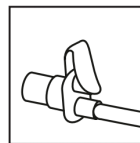
While in hospital, you will receive one new sterile breast pump kit. If you are discharged but still pumping in the NICU/Pediatrics unit, a kit will be available for you to use while visiting. This pump is to remain in the hospital. You may decide to rent or purchase a breast pump kit and breast pump outside of the hospital for at-home pumping sessions.



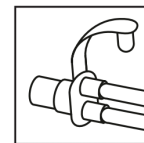
(Ameda, 2013)

Steps

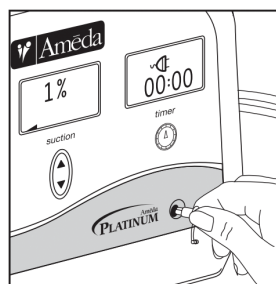
1. Wash your hands before handling the equipment and pumping
2. Obtain the equipment needed for pumping (two sterile collection containers with solid lids attached, basin, green towel, detergent [i.e. Sunlight detergent], pump and breast pump kit)
3. Avoid touching the inside of the containers and/or lids
4. Remove small parts from the bag and assemble the kit (refer to diagram below)
 - a. Insert the silicone diaphragm into the breast flange
 - b. Insert the adapter cap into the silicone diaphragm in a downwards motion
 - c. Snap the valve in an upwards direction into the bottom of the breast flange
 - d. Screw the milk bottle onto the breast flange
 - e. Ensure the tubing adapter is plugged into the breast pump
 - f. To dual pump: both tubes should be attached to the tubing adapter
5. If using breast shields:
 - a. Properly position the breast shields so that they are centred over the nipples and create a seal around the breasts. It is not necessary to push the shields back into the breast
 - b. Please ask a healthcare professional for assistance if needed
6. Positioning
 - a. You should be in an upright sitting position so that the collection bottle is upright during the pumping session. This allows milk to flow into the bottles.



To single pump:
Remove one tube and close tubing adapter.



To dual pump:
Both tubes should be attached to tubing adapter.



- Insert tubing adapter into tubing adapter port.

Operating the Pump

1. When the pump is plugged in, a light will appear next to the power button. Press the power button
2. Setting Suction
 - a. The pump starts at the lowest suction setting (1% or 30 mmHg)
 - b. Create an air seal by centering the nipple(s) in the breast flanges and fill the breast flanges with the breast(s)
 - c. Press the “↑” button to increase the suction until you reach the maximum comfort level
 - d. If discomfort is felt, decrease the suction
 - e. If discomfort is felt at all settings, turn the pump off, and remove the breast flanges from the breasts. Ask for assistance from a healthcare provider.
3. Setting Speed
 - a. The pump starts at the fastest speed (80 cpm)
 - b. Once milk begins to flow out of the breast, slow down the speed to help the breast drain faster
 - c. If milk flow is beginning to slow down, increase the speed of the pump to 60-80 cpm to help initiate more milk flow
 - d. Repeat as milk changes

Troubleshooting Tips:

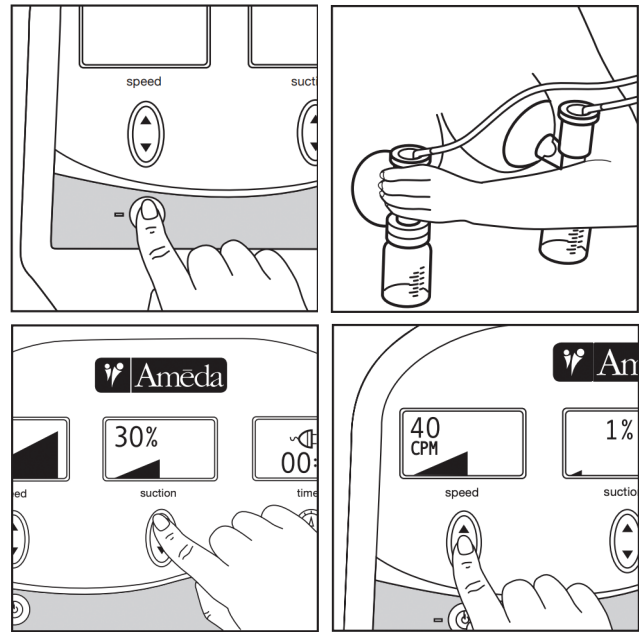
If the **pump is not turning on**, ensure the proper power cord is connected to the pump. If you are **unable to adjust the suction or the speed**, ensure pump function is ON and ensure “Check Kit” isn’t being displayed on the suction display window.

How long should I pump for?

Pump for **15-20 minutes** and always start with suction at the lowest setting and adjust to comfort. When pumping initially, it is normal that large volumes of milk will NOT be collected. Often there will only be a few drops of colostrum with pumping initially.

When breast pumping after the milk supply has come in, pump for an extra 2-5 minutes after the milk supply has stopped flowing. This helps maintain volume.

Pumping both breasts at the same time (double/dual pumping) works better and takes less time than expressing/pumping each breast at a time.



(Amēda, 2013)

Cleaning the breast pump and the breast pump kit

After each use, use a germicidal wipe to clean the breast pump.

Breast Pump Kit cleaning after each use:

Take the pump apart

1. Wash all the parts that touched the milk in a basin (except the tubing, adapter cap, and tubing adapter) in warm, soapy water
2. Gently wash the diaphragm and valves with your hands. Rinse with clean water
3. Do not insert anything into the valve while cleaning it
4. Despite not being washed, keep the tubing, tubing adapter and adapter cap in the kit for the next use
5. Place the parts on a clean, dry towel in a basin and allow to dry
6. Clean and dry the basin

Note: If milk backs up into the tubing during a pumping session, that tubing must be discarded.

Breast pump kits are not meant to be shared between users and are designed for single patient use. After discharge, maintenance of the breast pump kit should be according to the manufacturer’s instructions.

Storing Breastmilk

Preparing my breastmilk and equipment

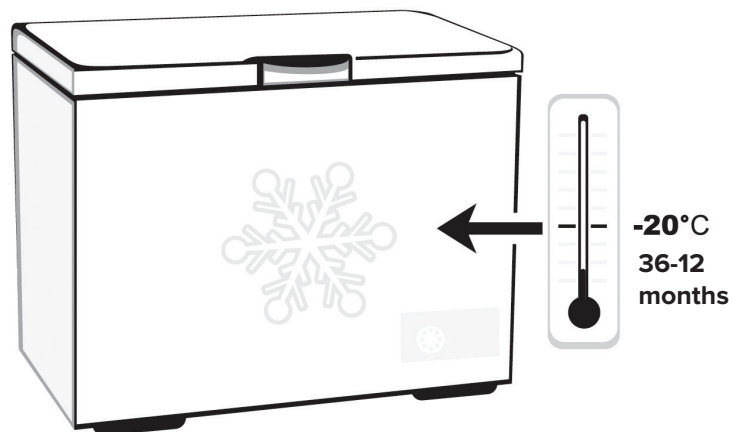
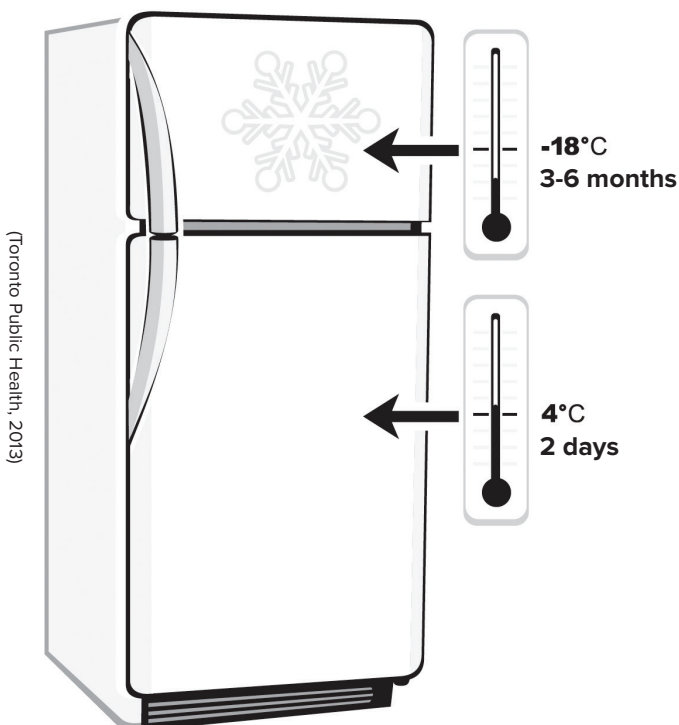
1. Wash your hands for at least 15 seconds before touching your breasts or the containers. Do not touch the inside of the bottles or lids.
2. **If you are in the hospital**, express milk into a sterile container. You can get these containers from your nurse. Label the containers with a label provided to you by your nurse. The label should include:
 - a. The infants PCS Label
 - b. The date and time the milk was expressed
3. Bring the milk to the baby's nurse. Breastmilk should be used in the order of when you collected it. For example, **use the older milk first**. The baby's nurse will store the labelled breastmilk in the baby's designated refrigerator.
4. **If you are at home**, the hospital will give you Ameda Platinum[®] containers for storing milk, while your baby is in hospital. Once the baby is discharged, you can store breastmilk in your own sterile containers or sterile breastmilk storage bags.

Storage and Use

- Put fresh breastmilk at room temperature (16-29° C) in the refrigerator right after expressing if it is not going to be used within 3-4 hours
- Store fresh breastmilk in the refrigerator ($\leq 4^{\circ}\text{C}$) for no more than 2 days (48 hours) for the preterm infant
- Chilled breastmilk brought to room temperature (16-29° C) is good for 3-4 hours
- Store breastmilk in a refrigerator freezer (separate door) for 3-6 months or for 6-12 months in a deep freezer ($\leq -17^{\circ}\text{C}$)
- Breastmilk that has been frozen must be fully thawed in a safe manner to maintain the nutritional and integrity of the breastmilk
- **To thaw milk**, submerge the bottle (but not the cap) in room temperate water. You can also hold the frozen milk under warmed running water until the breastmilk is room temperature
- Thawed milk should be swirled gently to re-suspend the fats
- Refrigerate thawed milk if it is not being used immediately and use within 24 hours after it has been fully thawed
- If the thawed milk is being used right away, warm the thawed breastmilk by placing it in a bowl of warm water. Use within an hour

Tips

- Do not refreeze breastmilk
- Do not mix partially frozen milk to fresh milk
- Store breastmilk in small amounts (2-4 ounces/container) to help minimize waste
- **At Home:** Store breastmilk in glass or hard plastic container with a tight lid. You may also use special breastmilk freezer bags. Do not use bottle liner bags.



How can I increase my milk supply?

It is normal to have a small milk supply at first. Frequent (every 3 hours or 8 times per day) breastmilk expression helps make more milk. If your baby is not breastfeeding, expressing breastmilk is important for generating a milk supply. When expressing breastmilk, empty your breasts as you would if the baby was breastfeeding.

How often should I express?

Expressing breastmilk for preterm babies should be done 8 or more times in 24 hours. The goal is to produce 750-1000 ml in 24 hours.

Does emptying the breasts help to increase milk supply?

Emptying your breasts after each feeding or pumping session increases the supply and helps the baby reach the “hindmilk”: the milk that is high in good fat. When pumping, pump 2-5 minutes after emptying the breasts in in order to maintain milk supply.

Skin-to-Skin Contact and Milk Supply

Seeing or touching your baby before or during pumping can help stimulate the “let down” reflex and increases milk supply. If your baby is stable, skin-to-skin contact (with the baby wearing nothing but a diaper) can help. Expressing breastmilk at the baby’s bedside can also help.

Relaxation

Being relaxed when expressing breastmilk can help increase milk supply. Try these techniques:

- Be in a quiet, relaxed place
- Have a warm shower or use a compress on the breast
- Apply heat to your back and shoulders

- Use relaxation breathing
- Gently massage the breasts

While expressing breastmilk try

- Reading a book
- Listening to calming music
- Looking at a picture of the baby or the baby themselves

Medications

Domperidone is a medication that may increase breastmilk supply. It may be used if non-pharmacological measures do not increase milk supply. This medication must be ordered by your healthcare practitioner.

Lifestyle Matters

Your lifestyle can affect your milk supply. To increase or maintain your milk supply try:

- Eating and drinking according to Eating Well with Canada’s Food Guide
- Drinking enough fluids, especially when you are thirsty
- Avoid smoking, alcohol and caffeine
- Getting enough rest

Ask yourself these questions if you are having difficulty with expressing enough milk:

Question	Yes	No
1. Are you pumping at least 8 times in 24 hours? Try to pump at least every 3 hours. If you cannot do this, try to pump at least 8 times in 24 hours. This can increase milk supply.		
2. Do you feel relaxed? Being relaxed while breastfeeding or expressing breastmilk can increase milk supply. Try relaxation techniques like listening to calm music, breathing exercises or being in a relaxed location.		
3. Are you eating and drinking enough? Parents who breastfeed requires an extra 2-3 Food Guide servings each day. Please visit https://food-guide.canada.ca/en/ for more information.		
4. Are you taking birth control pills? Birth control pills can decrease milk supply if you are breastfeeding. This is because of the estrogen found in birth control pills.		
5. Do you smoke cigarettes? Smoking can affect breastmilk production and may negatively impact growth and alter the baby’s sleep patterns.		
6. Do you drink alcohol? How much do you drink? Alcohol may limit the letdown reflex. It may also decrease the baby’s breastmilk intake because it can alter the odour or taste of breastmilk. Avoid or limit your intake of alcohol (occasional drink).		
7. Did you have any problems with heavy bleeding or clots after delivery? Severe blood loss and shock after childbirth can delay milk production. If the blood flow is not decreasing or there is an odour, tell your healthcare provider.		
8. Have you ever had thyroid problems? Have you ever felt very tired or depressed? Thyroid conditions may lead to delayed milk production or a low milk supply. Hormonal changes from pregnancy can cause thyroid levels to change.		

Breastfeeding

Breastfeeding an infant promotes optimal growth and development, including cognitive development. It can also help protect the baby from childhood obesity and can reduce infant mortality.

Breastfeeding is the natural way to feed babies and provides numerous benefits for both the baby and parent. It can also help create and establish a lasting bond between the parent and their baby.

Initiating Breastfeeding

If your baby is medically stable, they are **brought to breast within the first hour of birth**. Parents are given their baby to hold immediately after birth, and un-interrupted skin-to-skin contact is supported and encouraged. Your baby may lick, or smell the breast during this first exposure, or may feed well immediately. When breastfeeding, a lot of skin-to-skin contact and cuddling is important.

Meeting your Neonates Feeding Needs

Breastfeeding is encouraged 8 or more times in a 24-hour period to meet the baby's needs. This means you will be breastfeeding every 3 hours. Pumping can replace breastfeeding if needed.

Colostrum is adequate nourishment for babies for the first 48-72 hours and 10% weight loss is normal.

Breastfeed according to the baby's feeding cues and readiness. This should be frequent and unrestricted. Recognize the signs that your baby is ready to feed. Some include:

- Rapid eye movements under the eyelids
- Soft cooing or sighing sounds
- Sucking sounds
- Sucking or licking movements
- Restlessness
- Hand-to-mouth movements

Remember to offer both breasts at each breastfeeding.

Babies that are breastfed should be exclusively fed breastmilk and not given formula unless medically indicated.

Definitions

Breast Pumping: pumping of the breasts using an electric hospital grade breast pump

Breast Pump: the electric breast pump motor

Breast Pump Kit: includes breast pump accessories that attach to the electric breast pump and that are non-disposable. These accessories are one-time use.

Colostrum: milk in the breast that is produced beginning in mid-pregnancy and in the early postpartum period. It is thicker and more yellow than mature milk because of the higher amount of protein. Small volumes of colostrum are produced from delivery to approximately five days post partum.

Transitional Milk: Transitional milk begins around day 6 and continues for 10 days after. This type of milk demonstrates the most variability among lactating mothers. Lipid levels, or fat levels, and water-soluble vitamins is present in transitional milk.

Mature Milk: Breastmilk commonly produced after about two weeks postpartum and contains no colostrum.

“Let-Down” Reflex: reflex that when stimulated, will improve milk flow. This is caused by hormones.

Sterile: carefully cleaned items having no bacteria or other infectious agents

Foremilk: breastmilk the baby receives when he or she begins a breastfeeding session. There is a lot of foremilk, but it is low in fat

Hindmilk: breastmilk near the end of a breastfeeding session. There is less hind milk than foremilk, but it is high in fat. Fat helps the baby gain weight.

Engorgement: occurs when nipples flatten, skin becomes tight and breasts become painful. Breasts become very large from being full of milk after delivery. It is normal for the breasts to become full as the milk comes in.

References

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Related Policies and Procedures

B-6800 (Breastfeeding – Baby Friendly); Revised 2017
B-6850 (Breast Milk Expression); Revised 2019

Resources (Videos and useful information sources)

Hand Expression

Hand Expression of breastmilk (video): <https://med.stanford.edu/newborns/professional-education/breastfeeding/hand-expressing-milk.html>

Pamphlet on Hand Expression: http://www.kgh.on.ca/sites/default/files/uploads/2018-09-20_hand-expression-hand-out_2.pdf

Breastfeeding

Breastfeeding your Baby: <https://www.kflaph.ca/en/healthy-living/Breastfeeding.aspx>

<https://ontariobreastfeeds.ca/>

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