Expressing Breast Milk for Your Preterm Baby

How to Create and Maintain a Milk Supply
The first days and weeks after birth are the time to start a milk supply. Your first pumping attempts will produce tiny drops of thick, yellowish milk called colostrum. By the 4th day after birth, most mothers are producing an ounce or more each time they pump.

By the end of the first week, most mothers are producing 500 ml (16 oz.) of milk a day, and by the end of the second week, you will likely produce about 720 ml (24 oz.) a day. A tiny baby does not yet need that much milk every day. But, it won’t be long before they do. For that reason, you must maintain a good supply.

Here are some important tips for protecting your milk supply:

- **Use a double-capacity, hospital-grade electric breast pump.** “Double pumping” allows you to pump both breasts at the same time.
- If possible, start pumping within 6 hours after birth.
- Pump at least 8 times a day (or every 3 hours) for 15 minutes each time or until flow stops, then pump for 2 more minutes.
- Research shows that you need to pump at least 100 minutes a day to maintain a milk supply. Pumping less than this will probably result in a low milk supply.
- Double pumping is important. It saves time and it stimulates release of prolactin better than single pumping. Prolactin is a hormone that tells the cells in the breast to make milk.
- Remember that the first 2 weeks after birth are the best time to create a full milk supply. Start a regular pumping routine now to maintain your supply.
Use a double-capacity, hospital-grade electric breast pump.

Use “hands-on” pumping to increase your milk supply. We now know that mothers who combine hand expression and compression with an electric breast pump make more milk than those who do not.

**Pump and Empty Your Breasts Often!**

Pump often, and until your breasts are **empty**. This is important for complete removal of the *feedback inhibitor of lactation* (FIL). FIL is a protein in your milk that tells the cells in the breast to stop making milk. When your breasts are filled with milk, the rate of milk production decreases because of high levels of FIL. Pump often to get the FIL out.

Pumping also stimulates the production of prolactin. Prolactin is a hormone that signals the cells to make milk. Prolactin must be released often for your body to produce milk.

Without complete emptying **and** frequent prolactin stimulation, your breasts will begin to **involute**. This means the cells in your breasts stop producing milk. It is very hard for these cells to work again once they have stopped. For this reason, it is important to stick to your pumping schedule.

Visit the Web site [http://newborns.stanford.edu/Breastfeeding](http://newborns.stanford.edu/Breastfeeding) for helpful videos about hand expression and increasing milk production. These informative videos were developed by Jane Morton, M.D.
Another good reason to empty your breasts completely when you pump is to increase the amount of calories in the milk. It ensures collection of hindmilk, the milk that is released last. Hindmilk is high in fat and contains the calories your baby needs to grow well.

**Hand Expression**

Hand expression is another way to remove milk from the breast. It is often more effective than using a pump in the first day or two after birth.

- Begin by massaging your breast. Start at the chest wall and move toward the nipple and use a stroking or circular motion.
- Next, make a “U” with your thumb and fingers and place the “U” just behind the areola (the dark area surrounding the nipple). Lift and press back toward your chest wall. (See the picture below.)
- Finally, gently press or squeeze your fingers together without scraping fingers over your skin.
- Rotate your fingers around the areola and repeat until the breast is empty.
- Ask a partner to help you collect the small drops of colostrum from the nipple tip with a syringe. Or, if you are hand-expressing mature milk, collect the milk in a clean container as it sprays from outlets in your nipple.

**Kangaroo Care**

- Kangaroo care is also called “skin-to-skin holding.” It is simply holding your baby on your bare chest with baby dressed only in a diaper. You will both be covered in warm blankets.
- Kangaroo care helps your milk supply by stimulating oxytocin. Oxytocin is another hormone that helps lactation.
- Studies show that mothers who provide regular kangaroo care make up to 200 ml more milk and are more successful when they start full breastfeeding.
Kangaroo care can begin as soon as your baby is medically stable.

• Hold your baby skin-to-skin for at least 30 to 60 minutes each day, or as long as tolerated.

• Skin-to-skin holding has other medical benefits, too. It will improve your baby’s temperature regulation and breathing status. Kangaroo care will also help you produce more antibodies (infection-fighting factors). You will share these antibodies with your baby through your breast milk. Antibodies protect your baby against germs in the environment.

**Funnel Size**

• The right sized funnel will help completely empty the breast.

• Using the right sized funnel will help if you have sore nipples.

• Contact the lactation consultant for help with fitting the funnel.
Milk Let-Down

Milk let-down is the release or flow of milk that occurs after you begin pumping or nursing your baby. For some moms, it is hard to let down while pumping. Here are a few tips to make let-down easier:

- Massage your breasts.
  - Massage each breast gently but firmly, using a circular or stroking motion. Start at the back of the breast and move forward. Rotate your hands to get all around the breast.
  - Start your pumping session by massaging the breast.
  - Also, stop the pump to massage your breast about halfway through the pumping session. This will help with complete emptying of the breast.
- Pump right after providing kangaroo care.
- Pump while at your baby’s bedside in the NICU.
- Eat or drink something while pumping.
- Keep a favorite photograph or other item nearby that reminds you of your baby.
- Pump in a comfortable spot where you feel relaxed.
- Use warm compresses on your breasts before pumping.
- Consider using oxytocin nasal spray if let-down remains difficult. See Section 9, “Oxytocin Nasal Spray,” for more information.

Keeping Your Milk Safe for Your Baby

Wash your hands

- Washing your hands is the most important thing you can do to keep your baby’s milk safe from germs.
- Wash your hands well with soap and water before pumping or using clean pump equipment.

Clean your pumping equipment

- After each pump session, take apart all the pump pieces and wash them with hot soapy water. Rinse well. Place clean pieces on a clean towel to dry.
- Tubing usually does not need to be cleaned. But, you may notice that condensation (drops of water) forms inside the tube. This can cause mildew to grow over time. If you notice condensation, let the pump run for a few minutes (with tubing connected) while you clean up the other pump parts. This will help dry out the tubing.
**Storage**

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<thead>
<tr>
<th>When breast milk is:</th>
<th>It is safe for:</th>
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<tbody>
<tr>
<td>• Room temperature (freshly pumped milk only)</td>
<td>• 4 hours</td>
</tr>
<tr>
<td>• Refrigerated (4°C or 36 to 40°F)</td>
<td>• Up to 8 days</td>
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<tr>
<td>• Frozen (in a freezer with a separate door from the refrigerator section)</td>
<td>• 6 months</td>
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<tr>
<td>• Deep freeze (-20°C or 0°F)</td>
<td>• 12 months</td>
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<tr>
<td>• Thawed (but not warmed)</td>
<td>• 24 hours in refrigerator (do not refreeze)</td>
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| • Warmed for a feeding (use medium-warm water to warm milk; do not boil or microwave) | • 1 hour at room temperature  
• 4 hours in refrigerator |

- Use Medela Pump & Save bags to store milk for your baby in the hospital. Your nurse or lactation consultant can show you how to use these bags.

**Transport Milk Correctly**

- When possible, transport breast milk before freezing it.
- Place the milk in an insulated bag with a frozen gel pack.
- When traveling long distances with frozen milk, follow these steps to keep the milk from thawing:
  - Keep the milk bags together in a cooler.
  - Put frozen gel packs all around the bags.
  - Fill any extra space in the cooler with crumpled paper or towels to help insulate the milk.
- Do not use ice cubes to keep milk frozen. They will speed up the thawing of your frozen milk.

**Labeling**

- To make sure the breast milk is used safely, all bags MUST be properly labeled.
- Place a bar code sticker with your baby’s name on each milk bag. Ask a nurse for these stickers when you visit your baby in the NICU. Write the date and time of collection on each sticker.
Milk Fortifiers

- Preterm infants need more protein and minerals than full-term babies. Commercial fortifiers may be added to breast milk to increase protein and mineral content. They include calcium and phosphorus, which aid bone growth for small preterm infants.

- Fortifiers also add calories to help your baby grow.

Time-Saving Tricks

- To make your nighttime pumping easier, prepare your equipment before going to bed. Remember, fresh breast milk is fine at room temperature for 4 hours. You can simply pump and go back to sleep. Place your milk in the refrigerator as soon as you get up for the day. This will reduce extra steps in the middle of the night.

- Try Medela Quick Clean antibacterial wipes for cleaning pump parts quickly.

- Try a hands-free bustier for double pumping. Or, buy nursing bras that close in front, in the center. The flaps can be closed around pump funnels so that you can pump with your hands free.

- If you must travel a long way to visit your baby, consider pumping during your trip if you are the passenger. You can use a hand pump to empty your breasts. Also, some electric pumps have adapters that can be used in cars.

<table>
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<tr>
<th>Common Questions</th>
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<tr>
<td>Q. <strong>It has been 2 days since my baby’s birth, but I haven’t been pumping because I don’t have milk yet. Is that OK?</strong></td>
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<td>No, you should still use the pump every 3 hours. It is common for moms to pump only small amounts or even just a few small drops in the first days after birth. This liquid is called <strong>colostrum</strong> and it should be collected and given to your baby. Don’t worry if there are not enough drops to collect. You should pump anyway to ensure that prolactin has been stimulated and that your body is getting the message to make milk. Your milk volume should increase between days 3 and 5 after giving birth.</td>
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| Q. **Does my baby really need these tiny drops of colostrum?** |
| Yes, your baby should receive this special milk for the first feedings (either fresh or thawed after being frozen). Colostrum is high in protein and has special anti-infection and anti-inflammatory properties. |
Q. My first pumping session produced colostrum, but now I’m not pumping any colostrum. What happened to my milk?

Don’t worry. This happens to many mothers and does not affect how much milk you will be making starting on days 3 to 5. Keep pumping every 3 hours and expect your milk supply to begin to increase on day 3. Call Lactation Services if your supply has not increased by 5 days after birth.

Q. Do I need to pump at night?

Yes, it is a good idea to pump once each night. Remember, you need to remove FIL from your breast and stimulate prolactin to maintain your milk supply. Try not to let more than 4 or 5 hours pass between nighttime pumping sessions. If possible, try not to set an alarm clock. Instead, pump when you naturally wake to use the bathroom.

Q. What is the difference between foremilk and hindmilk?

Foremilk is the milk that is released first, and hindmilk is milk released at the end of a pumping session. Hindmilk is higher in calories and fat content. It is important that you pump your breasts to empty them so that your baby will get this nutritious hindmilk. Your premature infant needs these extra fats and calories for growth.

Q. Is freshly pumped milk better than milk that has been stored?

Freshly expressed milk should be used whenever possible. Use milk that has been refrigerated or frozen only when fresh is not available.

Q. Do I need to bring my pump when I come to visit my baby?

No, the NICU has all the equipment you need for pumping when you visit your baby. Ask for a pump to be rolled up to your baby’s bedside. Or, use the private pump room on the west side of the unit.

Q. I have an electric breast pump at home. Can I use it?

No, we recommend a hospital-grade pump. Electric pumps bought for home use do not work well for a mom who is relying only on a pump to maintain her milk supply. Most insurance policies and medical coupons pay for the rental of a hospital-grade pump while your baby is staying at the hospital. The lactation consultant will help you arrange for a rental pump before your baby’s discharge from the hospital.

Q. Where do I get more storage bags?

While your baby is in the hospital, we will provide storage bags. Ask your baby’s nurse for more, when you need them. You will use about 1 box of bags every 3 days.