Breastfeeding Your Preterm Baby

A manual for new mothers
Questions?

Call 206-598-4628

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC clinic staff are also available to help.

Lactation Services:
206-598-4628

Weekdays:
9 a.m. to 9 p.m.

Weekends and holidays:
9 a.m. to 1 p.m.

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You Can Breastfeed Your Preterm Baby

Breast Milk Is Special

Your breast milk is important for your baby’s health. Breast milk from mothers who have delivered early is different from breast milk from mothers who deliver at term. Some research suggests that preterm milk is higher in protein, certain minerals, and anti-infection properties. Your milk also has special factors that help your baby’s immature immune system. Your premature baby will benefit from receiving your milk in many ways:

- Lower risk of infection.
- Lower risk of *necrotizing enterocolitis* (NEC), an infection of the intestines.
- Improved feeding tolerance.
- Lower risk of allergy.
- Better brain development and higher IQ (*intelligence quotient*).
- Lower risk of *respiratory syncytial virus* (RSV), which infects the lungs and breathing passages.
- Better eye development.

Getting Started

You can breastfeed your preterm baby, but the way you get started will be different for a while. This is because preterm infants are often not strong enough or mature enough to nurse for many days or weeks after birth.
Soon after your baby’s birth, you will be taught to use a hospital-grade electric breast pump. Learning to *express* (release) your milk with a double-capacity pump helps you build and maintain your milk supply while your baby is small. The milk you collect will be given to your baby during their stay in the NICU.

**Medicines**

Be sure to tell your lactation consultant or doctor about any medicines you are taking while providing breast milk for your baby. Over-the-counter medicines, prescription medicines, and other drugs can get into your breast milk. Most medicines will not cause problems for your growing baby. But, it is still wise to review them with your health care team.

**Common Question**

Q. Is it possible for me to make milk even though my baby was born early?

Yes. Your breasts can produce milk by 22 weeks gestation.
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.
Lactation Services
Expressing Breast Milk for Your Preterm Baby

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.
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

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

- 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.

Common Questions

Q. 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?

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 colostrum 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.

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.
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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.
We know that breastfeeding is not more stressful for the preterm infant than bottle-feeding, even though getting your baby to nurse might be difficult. In fact, while breastfeeding, preterm infants can maintain body temperature and oxygen saturation and coordinate sucking, swallowing, and breathing better than during bottle-feeding.

Knowing When Your Baby Is Ready

Every mother-baby pair is different when it comes to being ready to breastfeed. The way breastfeeding is managed for each preterm infant and mom pair is also unique to them. Some premature infants start showing signs of being ready to breastfeed as early as 32 weeks (adjusted age), while others are not ready until about 37 weeks (adjusted age). The adjusted age is gestational age at birth plus the number of weeks since birth.

There are no set guidelines for the best time to start breastfeeding, since each baby develops at a different rate. In general, you can start breastfeeding when your baby:

- Can coordinate sucking, swallowing, and breathing.
- Swallows without choking.
- Makes mouthing behaviors such as sucking attempts, licking, searching, or rooting with a wide mouth.
- Sucks a pacifier.
- Has wakeful, alert periods.
- Tolerates kangaroo care.

When You Start to Breastfeed

No matter when you and your baby are ready, early breastfeeding involves ongoing kangaroo care and closeness of mother and baby. Kangaroo care is key to learning to breastfeed! See Section 2, “Expressing Breast Milk for Your Preterm Baby,” for more information about kangaroo care.
First tries at breastfeeding are usually rooting at breast and licking drops of milk from the nipple. Over time, your baby will begin to latch and transfer some milk. The amount transferred will slowly increase as your baby becomes stronger and more efficient at the breast.

At first, learning to position and latch may seem overwhelming. Ask the lactation consultant or your baby’s nurse for help. They can give you helpful positioning and latching tips. Soon, these parts of breastfeeding won’t seem so complicated.

Remember that pumping will be the primary way to maintain your milk supply even though your baby is learning to breastfeed. Pump after every feeding attempt until your baby masters breastfeeding.

**Positions**

Good positioning of your preterm infant is helpful for breastfeeding success. Also refer to the “Position and Latch for Breastfeeding” section in the booklet *Caring for Yourself and Your New Baby*.

- Although not required, skin-to-skin contact can be helpful for early breastfeeding attempts.
- Sit up straight in a chair with good back support. A small footstool might be helpful to support your lower back.
- Make sure that your baby’s body, shoulders, and head are well-supported for the best latching success. This support is essential for the premature infant so they don’t lose their latch when they pause between sucks.
- Use pillows to support your baby at the breast.
- Always position your baby so that the nose, belly button, and knees are lined up and facing you. Also, be sure that your baby’s head is not flexed too far forward or extended too far back.
- Football-hold and cross-cradle hold are the best breastfeeding positions for the preterm infant. They are described on the next pages.

**Football Hold**

- Place a pillow along your side.
- Tuck your baby under your arm so that their legs and feet are under your armpit. Your baby’s nose and mouth should be close to your nipple and lined up with where your nipple naturally points.
- When baby is at the right breast, your right hand should be placed around the back of baby’s neck with your palm supporting head, neck, and shoulders. Your fingers should wrap around to touch each ear. Your forearm can be used to support your baby’s torso. Your left hand will support the right breast. (Reverse this hand placement for feeding at the left breast.)
• With your other hand, place your thumb on the areola across from your baby’s nose and your index finger across from your baby’s chin. Make sure your baby’s body is tucked in close to the side of your body and breast.

An infant breastfeeding in football hold.

**Cross-Cradle Hold**

• Place a pillow across your lap (two pillows might be needed for mothers with long torsos). Place your baby on the pillow with their nose, belly button, and knees lined up and facing you.

• If your baby is at your right breast, use your left hand to support your baby and your right hand to support your breast. In this case, you will rotate your right hand to form a “U” shape to support the breast. Your left hand will be around baby’s neck with palm supporting the infant’s head, neck, and shoulders. Your fingers should wrap around to touch each ear. Your forearm can be used to support baby’s torso.
• This position allows for good support of your small baby and better control to help with latching. Cradling your baby in the crook of your elbow does not provide enough support for your small baby during breastfeeding.

An infant breastfeeding in cross-cradle position

**Latch**

Your first attempts at latching may be as simple as promoting a rooting reflex and letting your baby lick a few drops of milk off your nipple. These are very successful early breastfeeding tries for a preterm baby. As preterm babies grow and become stronger, they will develop the ability to grasp the nipple and hold it in their mouth. Also, your baby’s ability to transfer milk out of the breast will slowly improve.
Getting Started

- Use gentle waking techniques – such as changing a diaper, sitting upright, talking, or massage – to bring your baby to a quiet alert state. Latching will be easier if your baby is awake and ready to feed. If your baby does not fully wake, do not be discouraged. This is common. Just hold your baby skin-to-skin this time and try again later.

- Hold your breast with your thumb and index finger on opposite sides of your areola. Apply pressure with fingers to form a “sandwich.” This will help shape the nipple and breast tissue so your baby can latch well.

- Hand-express a drop of milk on your nipple to place on your baby’s lip.

- Brush the nipple from your baby’s upper lip to lower lip to encourage a wide mouth. This response is called the rooting reflex. You may need to do this several times to get your baby to root.

- When your baby’s mouth opens wide (roots) with the tongue down, pull your baby’s body to the breast and quickly put the nipple and a portion of the areola into the baby’s mouth.

- Maintain the compression or “sandwich” of the nipple and areola until baby is well latched and sucking. You might find it helpful to hold this “sandwich” throughout the entire feeding to help your baby keep the latch.

- When your baby is latched on correctly, you will feel a firm pull and your nipple will not easily fall out of the baby’s mouth.

- For other helpful positioning and latching tips, refer to the section “Position and Latch for Breastfeeding” in your Caring for Yourself and Your New Baby booklet.

Nipple Shields

A nipple shield is a thin, silicone, nipple-shaped device that fits over a woman’s nipple. Nipple shields have many uses for both full-term and preterm infants. There are several benefits for preterm infants:

- Premature babies often have low muscle tone, which makes it difficult for them to create the suction needed to latch well, hold the latch, and breastfeed well (transfer milk). The nipple shield helps the infant create the suction pressure needed to nurse well. As preterm infants develop and become stronger, they outgrow the need for the shield.

- Research shows that preterm infants can transfer larger milk volumes when using a shield for nursing.

- The nipple shield also helps the small preterm infant fit the mother’s nipple and areola into their small mouth.
Using a nipple shield for nursing.

**Test Weights**

Weighing your baby before and after breastfeeding helps us see how much milk your baby is able to transfer from your breast. We use a special scale that measures your baby’s weight in grams. A weight gain of 1 gram is equal to 1 milliliter of milk volume.

When breastfeeding begins to progress, you can start checking feeding weights. You will do this many times before your baby is discharged from the hospital. Ask your nurse or lactation consultant to show you how to use the scale. Then you will feel comfortable using a scale at home after your baby is discharged.

A baby scale measures weight in grams.
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**Common Questions**

**Q.** My baby has been given pacifiers in the NICU. Will this affect my baby’s ability to latch properly at my breast?

Maybe. But keep in mind that while pacifier use is often not recommended for full-term infants, it is a medical need for preterm infants. The pacifier allows the infant to suck in moments of stress, such as during blood draws. The sucking releases hormones to help with pain and stress. This benefit outweighs the possible negative effect it can have on breastfeeding. But, when you can, offer your own nipple as a pacifier.

**Q.** My baby is showing signs of being ready to breastfeed but cannot yet have large volumes of milk. What can I do?

Talk with someone on the NICU team. It might be possible to empty your breast just before nursing. This is called **non-nutritive sucking**. It gives your baby the benefits of pacifying at the breast without drinking much milk. This is also helpful for early breastfeeding attempts, where fast flow might make it hard for your baby to coordinate sucking, swallowing, and breathing.
Low Milk Production
Causes, treatment, and prevention

Low milk production is when the mother’s body makes less than 16 ounces of milk a day at 1 week after birth, or less than 24 ounces a day at 2 weeks after birth. The most common reason for low milk production is not emptying the breasts often enough.

Milk production sometimes stays low even if the mother breastfeeds often or is pumping 8 times a day or more. Sometimes this is due to a physical cause. Other times, we do not know the cause.

What causes low milk production?
These are some possible causes for low milk production:

Maternal Endocrine (Hormonal) Disorders
- Hypothyroidism
- Polycystic ovarian syndrome
- Infertility (maternal endocrine cause)*
- Pituitary disorders*

Maternal Physical Conditions
- Anemia
- Postpartum hemorrhage, which can lead to anemia or Sheehan's syndrome, a pituitary hormone deficiency
- Retained placenta
- Eating disorder, or too much dieting
- Obesity or high body mass index (BMI)
- Gastric bypass surgery
- Infection*
- Other maternal illness*
- First delivery and over 40 years old*

*This possible cause has been seen but has not been proven scientifically.
Maternal Breast Problems (Primary or Secondary)

- Abnormal or *asymmetric* (irregular) appearance, size, or shape; or little or no growth in puberty
- Little or no growth in pregnancy
- Breast surgery, biopsy, or other trauma to the breast
- Radiation to the chest
- No fullness by the 6th day after birth or prolonged, unrelieved engorgement

Medicines or Drugs Taken by the Mother

- Alcohol
- Diuretics such as Lasix
- Decongestants such as Sudafed
- Birth control medicines with hormones, especially estrogen
- Nicotine

Infant Conditions

These conditions in the baby can lead to low milk production if the mother is not pumping 8 times a day:

- Cleft of the hard or soft palate
- Very small chin (*micrognathia*) or other disorders of the bones in the skull and face (*craniofacial abnormalities*)
- Immature or disorganized suck
- Prematurity (less than 37 weeks gestation)
- “Tongue-tie” (*ankyloglossia*), caused by a short *frenulum*, the tissue that connects the bottom of the tongue to the floor of the mouth
Tips to Help Milk Production

Here are some tips to help protect and increase your milk production:

- **Express milk from your breasts 8 or more times a day.** The best way to increase milk production is the way nursing babies do it—they empty the breasts more fully and more often. If your baby isn’t able to breastfeed, try pumping every 2 hours during the day, and at least once during the night. Keep pumping for 1 to 2 minutes after the milk stops flowing. Make sure you are using a hospital-quality, double electric pump. Don’t depend on anything less.

- **Do "kangaroo care"** (skin-to-skin holding of your baby) for at least 1 hour every day. This is very important if you are only pumping. Early skin contact may help you keep your milk production from drying up around 4 weeks after birth. See Section 3, “Nursing Your Preterm Baby,” for more details.

- **Massage your breasts** and hand-express your milk every time you pump. When the milk stops flowing, use your hands to express the milk that the pump didn’t remove. See page 3 of Section 2, “Expressing Breast Milk for Your Preterm Baby.”

- **Eat something while you pump.** Eating releases the hormone *cholecystokinin*, and that releases the hormone *oxytocin*, which makes your breasts empty more completely.

- **Listen to relaxing music** while pumping.

- **Try a different pump funnel.** There are different sizes and different kinds of plastic. Some women respond very well to a larger funnel. We have samples you can try. This may or may not make a difference.

- **Talk to your health care provider about drugs to increase milk production.** Metoclopramide (Reglan) is prescribed in the United States. Domperidone has fewer side effects but has to be made by a specially trained pharmacist, so it isn’t easy to get. See the sections on these medicines for more details.

- **Try fenugreek.** This is an herbal supplement you can get without a prescription. See the “Fenugreek” section for more details.

- **Try acupuncture.** Acupuncturists know which points on the body help milk production, and they can teach you how to massage these points yourself. You can also read about it in Michael Reed Gach’s book, *Acupressure's Potent Points*, pages 158 to 160. According to another author, Steven Clavey, 1 p.m. is the best time of day for acupuncture.
• **Try special foods.** In many cultures, people bring gifts of special foods to new mothers – foods that are high in protein, nutrients, and calories. Here are some foods that “folk wisdom” says increase milk production:
  - Oatmeal gruel (Africa)
  - Red plums, chicken soup with ginger (China)
  - Fried ginger or black pepper (India)
  - Azuki beans, rice gruel, soup and vegetables, lotus roots (Japan)
  - Seaweed soup (Korea)
  - Cotton seeds (Mexico)
  - Anise (The Netherlands and Sweden)
  - Cumin, cotton seeds, goat’s stomach (Pakistan)
  - Clams or ginger broth (Philippines)
  - Banana flower soup (Thailand)
  - Brewer’s yeast and alfalfa (USA)
  - Pork feet soup with hearty vegetables (Vietnam)
Preparing for Discharge and Going Home

Leaving the NICU

Congratulations! You are almost ready to take your baby home. Here are some tips for discharge planning and transition to direct breastfeeding at home.

Discharge

By now, you have probably practiced breastfeeding your baby many times. During the next few weeks, while you and your baby work to make a full transition to direct breastfeeding, you may need to rent a breast pump to use at home. You may need the pump for 2 or 3 weeks beyond your baby’s original due date.

Most insurance companies will not cover the cost of renting a breast pump once your baby is no longer staying at the hospital. So, it is wise to plan now how you will pay for the rental on your own. Call your insurance provider to check your plan benefits. If you live outside the Seattle area, it might be helpful to rent a pump from a place that is closer to your home. And, if you receive WIC services, now is the time to call your WIC office to ask about a pump you can borrow.

If your baby has ongoing special nutrition needs, a member of your health care team will discuss them with you. A specific feeding plan will be in place before your baby’s discharge.

In the days before discharge, you may be offered a “guest room” in the hospital, if a room is open. This lets you stay close by and practice caring for your baby before you go home. This is a good time to work on breastfeeding.

This practice time also allows us to check test weights (see page 6 of Section 3, “Nursing Your Preterm Baby”). Weighing your baby before and after breastfeeding shows how much milk your baby is getting directly from the breast. This information will help us create your discharge feeding plan. The lactation consultants will be happy to help you with this part of getting ready to leave the hospital.
What to Expect at Home

Most times, preterm babies are ready for discharge before their original due dates. Because of this, your baby may still have immature feeding behaviors when you leave the hospital. Some immature feeding behaviors are:

- Not waking or giving feeding cues.
- Falling asleep at breast.
- Slipping off the nipple.

With this in mind, try these tips:

- Plan to continue pumping often. This will protect your milk supply until your baby is an expert at breastfeeding.
- Offer the breast when your baby is fully awake and cueing. In the first week or two at home, your baby might not be able or ready to try breastfeeding every time. As your baby gets bigger and older they will be able to breastfeed more. We do not advise on-demand feeding for a premature infant until the baby shows regular, adequate milk transfer and consistent growth.
- If a breastfeeding session is working – your baby is well latched, sucking in rhythm, and you can hear swallowing – then let your baby feed for 20 to 30 minutes. If feeding is not working, move on to supplementing and pumping within 10 minutes of starting the feeding session.
- Use the nipple shield as needed to help your baby latch in these early days and weeks at home. In time, your baby will no longer need the shield. There is no hurry to stop using the shield. Some babies will wean from the shield around the time of their original due date. Others may use the shield for a longer time.
- Use your pumped breast milk to supplement your baby. You might also need more formula if your milk supply is low.
- Between feedings, offer your baby your breast for comforting and pacifying. This is called non-nutritive sucking.
- Continue kangaroo care at home while you work toward full breastfeeding.
- Use a baby scale at home as you and your baby get close to full breastfeeding. Checking your baby’s weight before and after feeding will help safely guide you and your baby to full breastfeeding without supplement. It is important to closely monitor your baby’s weight. Your baby should gain about 15 to 30 grams each day.
Questions?

Call 206-598-4628

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC clinic staff are also available to help.

Lactation Services: 206-598-4628

Weekdays:
9 a.m. to 9 p.m.

Weekends and holidays:
9 a.m. to 1 p.m.

- Your baby will slowly become more efficient at breastfeeding as immature feeding behaviors are replaced with more mature ones. Your baby will probably be fully breastfeeding by 2 or 3 weeks after your original due date.

We Are Here to Help

Even after your baby leaves the hospital, you are welcome to return for a visit with a lactation consultant. We will meet with you and your baby to help work toward your breastfeeding goals. To schedule an appointment, call 206-598-4628.

Your commitment to pumping, kangaroo care, and breastfeeding is a gift to your baby that only you can give. And, this special gift will bring long-lasting health benefits to both your baby and you.
Fenugreek

What is fenugreek?
Fenugreek is an herb. It is sold as dry seeds or capsules. The greens and seeds are often used in East Indian cooking. It is also used as an artificial maple flavoring. Fenugreek can be made into a tea, and it is one of the ingredients in “Mother’s Milk Tea.” It is a member of the legume family (soybeans, peanuts, and garbanzo beans). It is known for increasing milk supply in breastfeeding women.

When is it needed?
If your milk supply is low, we strongly advise that you talk with a lactation consultant. She will try to find out why your supply is low and will suggest treatments based on your situation. If these treatments do not work within 3 to 5 days, fenugreek may help.

Fenugreek is NOT the first choice, and perhaps not even the best way to improve milk supply. It NEVER replaces the need for emptying the breasts often by nursing or pumping at least 8 times a day.

Where do I get it?
You can buy fenugreek without a prescription in stores that sell vitamin and nutritional supplements or herbal remedies, such as General Nutrition Centers or Fresh Vitamins (800-216-1412). The closest source to University of Washington Medical Center is a vitamin shop called Super Supplements (206-633-4428) on the southeast corner of 45th and Roosevelt.

What is the dose?
To increase their milk supply, mothers usually take 2 to 3 capsules 3 times a day. The capsules are not regulated by the U.S. Food and Drug Administration (FDA), and they come in different strengths, from 125 to 600 mg per capsule.
Questions?

Call 206-598-4628

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC clinic staff are also available to help.

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**Weekdays:** 9 a.m. to 9 p.m.

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It may be best to start with the strongest dose so that you can see within 3 to 5 days if it’s working for you. Most women take fenugreek only for a few weeks, but some mothers report that they need to keep using it to keep their milk supply high.

**How do I take it?**

Take fenugreek capsules with water 3 times a day: in the morning, at midday, and at bedtime.

**Are there any side effects?**

When taken in moderation, fenugreek is generally regarded as safe. No studies have been done to see if it has any effect on babies or on how much gets into breast milk.

If you take fenugreek, keep these things in mind:

- You may notice that your urine and sweat smell like maple syrup. Your baby may also smell like maple syrup.
- Some mothers get diarrhea, but this goes away when they stop taking the capsules.
- Doses of 5 grams (5,000 mg) a day have been found to lower blood sugar and cholesterol levels.
- Fenugreek has an oxytocin effect, so it is not advisable in pregnancy.
- It is possible to have an allergic reaction to fenugreek.
- Fenugreek is NOT advised if you are taking *anticoagulant* (blood-thinning) medicines.

**NOTE:** You should always tell your doctor and your baby’s doctor about this and any other medicines you are taking while breastfeeding.

**To Learn More**


Reglan (Metoclopramide)

**What is Reglan?**

Reglan (Metoclopramide) is a prescription drug that is used most often to improve esophagus and stomach function. Reglan also increases prolactin, the hormone responsible for milk production. Normally, a woman’s prolactin increases during pregnancy and stays high after birth if the baby breastfeeds often (8 times a day or more).

**When is it needed?**

Reglan can be useful for mothers who have been unable to make enough breast milk, even if they are breastfeeding or pumping often.

Before using Reglan, talk with a lactation consultant. She will look for other factors that might be causing your low supply and will usually suggest other ways to boost your milk supply. If your supply doesn’t improve within 5 days, you may decide to try Reglan. Remember that even while taking Reglan, you must continue to breastfeed or pump at least 8 times a day.

Reglan works best for women who have low prolactin levels even when they are pumping or breastfeeding often. It is not yet common practice, but a blood draw to check your prolactin level might help determine if Reglan will work for you. Prolactin levels should be checked 3 hours after nursing or pumping.

**Where do I get it?**

You need to get a prescription for Reglan from your primary care provider, such as your obstetrician, family medicine provider, or nurse practitioner. Most pharmacies carry Reglan.
What is the dose?

Most women take one 10 mg tablet, 3 times a day for the first week. If your milk supply improves, you will take 1 tablet 2 times a day for the second week, 1 tablet once a day for the third week, then 1 tablet every other day for the fourth week, for a total of 46 tablets.

4-Week Course of Reglan

<table>
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<tr>
<th>Week 1</th>
<th>10 mg 3 times a day</th>
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<tbody>
<tr>
<td>Week 2</td>
<td>10 mg 2 times a day</td>
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<tr>
<td>Week 3</td>
<td>10 mg 1 time a day</td>
</tr>
<tr>
<td>Week 4</td>
<td>10 mg every other day</td>
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</table>

How do I take it?

Take Reglan with water. It can be taken with or without food. You will usually see an increase in your milk supply within the first week.

Are there any side effects?

Some side effects for the mother may be:

- Drowsiness.
- Diarrhea.
- Stomach upset and nausea.
- Depression.

Rarely, long-term and/or high-dose use of Reglan has been linked to tardive dyskinesia. Symptoms include involuntary and repetitive movements of the extremities or face. These symptoms may continue even after you are no longer taking the drug. They are rarely reversible, and they have no known treatment. The Food and Drug Administration (FDA) recommends that no one use Reglan longer than 3 months.

Some women have no improvement in their milk supply when they take Reglan. For others, their supply drops when they stop taking it.

Reglan peaks in breast milk 1 to 2 hours after an oral dose. The amount that a baby may get through the milk is minimal, and no side effects have been reported in babies.

To Learn More


**Medications and Mothers’ Milk**, by Thomas W. Hale (2008).
Domperidone (Motilium)

What is Domperidone?
Domperidone (Motilium) is a prescription drug often used to treat disorders of the gastrointestinal (GI) tract, but it also increases prolactin. Prolactin is the hormone needed for milk production. Usually, a woman’s prolactin increases during pregnancy and stays high after birth if the baby breastfeeds often (8 times a day or more).

When is it needed?
Domperidone can be useful for mothers who have been unable to produce enough breast milk, even if they are breastfeeding or pumping often.

Before using Domperidone, talk with a lactation consultant. She will look for factors that might be causing your low supply and will usually suggest other ways to boost your milk supply. If your supply doesn’t improve within 5 days, you may decide to try Domperidone. Remember that even while taking Domperidone, you must continue to breastfeed or pump at least 8 times a day.

Domperidone works best for women who have low prolactin levels even when they are pumping or breastfeeding often. It is not yet common practice, but a blood draw to check your prolactin level might help determine if Domperidone will work for you. Prolactin levels should be checked 3 hours after nursing or pumping.

Where do I get it?
You will need a prescription for Domperidone. Your obstetrician, midwife, primary care provider, or nurse practitioner can write a prescription for you. As of now, only compounding pharmacies can fill this prescription. Custom Prescriptions (425-289-0347) is one of the pharmacies that has filled this prescription for our patients.

Using Domperidone
The dose is 10 to 20 mg (1 to 2 capsules of 10 mg each), 3 to 4 times a day for the first week. It may take 3 to 5 days before you see an effect. Some mothers notice an effect within 24 hours.
If your milk supply improves with the Domperidone, you will cut back to 3 times a day for the second week, 2 times a day for the third week, 1 time a day for the fourth week, then once every other day for the fifth week (see table).

**Side Effects**

The amount of Domperidone that gets into the breast milk is tiny. Side effects in the baby have not been reported.

Side effects for the mother are rare. They may include:

- Dry mouth and thirst.
- Rash and itching.
- Headache.
- Abdominal cramps or diarrhea.
- Drowsiness.
- Possible arrhythmias (irregular heartbeats) in patients with low potassium or in patients who are prone to arrhythmias.
- Seizures (very rarely).

In 2004, the Food and Drug Administration (FDA) issued a warning that cautioned women against using Domperidone for increasing milk supply. The warning was based on old information where this medicine was used intravenously in cancer patients who were receiving chemotherapy. The dose caused arrhythmia in these patients. At this time, there is no published research that shows that Domperidone taken by mouth causes arrhythmia in otherwise healthy breastfeeding mothers.

**To Learn More**

**Books**


**Web Sites**

*Breastfeeding Online* (Jack Newman, M.D.)

www.breastfeedingonline.com/domperidone.shtml

*Breastfeeding Pharmacology* (Texas Tech University Health Sciences Center, Thomas W. Hale, R.Ph, Ph.D.)

http://neonatal.ttuhsc.edu/lact
Oxytocin Nasal Spray

**What is oxytocin?**

Oxytocin is a hormone that makes smooth muscles contract. It also works in the brain to help with bonding and feelings of love and caring for others.

During breastfeeding, nerves in the nipple carry a message to the brain to release oxytocin from the pituitary gland every time the baby suck. Oxytocin causes muscles around the milk glands to squeeze milk into the ducts. When this “let-down” happens, some women feel “pins and needles” or a tingling sensation in the breasts. Sometimes milk drips from your other breast. Sometimes you feel thirsty.

Oxytocin also makes the uterus contract, so in the first week after birth, you might feel menstrual-like cramps or an increase in your lochia flow. Lochia is the fluid that leaves the vagina after childbirth. It is mostly blood.

**When is oxytocin nasal spray needed?**

Oxytocin nasal spray is a synthetic form of the hormone. If your breasts are so full and firm that nursing, massage, warmth, and pumping cannot relieve the pressure after 24 hours, oxytocin nasal spray may help. It can also boost milk supply by helping to empty the breasts more completely.

**Where do I get it?**

You will need a prescription for oxytocin. Your obstetrician, midwife, primary care provider, or nurse practitioner can write a prescription for you. Oxytocin nasal spray is prepared in the pharmacy at University of Washington Medical Center (UWMC) and in some drugstore pharmacies. Not all drugstores carry it.
Lactation Services

Oxytocin Nasal Spray

What is the dose?
UWMC’s pharmacy prepares oxytocin in a 5 ml nasal spray bottle. The concentration is 10 units/ml. The original “Syntocinon” was 40 units/ml. This stronger dose can be made by a compounding pharmacist. Some local compounding pharmacies are:

- Maple Leaf (206-729-7514)
- Kelly Ross (206-622-3565)
- Lloyd Center (800-358-8974)
- Belgrove (425-455-2123)

How do I take it?
- Because oxytocin is not absorbed by the body when it is taken by mouth, you must take it as nasal spray. Begin with 1 or 2 sprays in each nostril before breastfeeding or pumping.
- You can spray each nostril again every few minutes as needed while you breastfeed or pump.
- If you do not like the spray method, you can drip oxytocin into your nostril with your head tipped backward (1 drop = 1 spray). You can also spray the back of your throat or under your tongue, although the enzymes in your saliva may make it less effective.

Are there any side effects?
Some women get headaches when they use oxytocin. Stopping oxytocin will make the headaches go away.

To Learn More
Medications and Mothers’ Milk, by Thomas W. Hale (2008).
Breastfeeding Resources

Here are some resources for breast pumps, books, and other information you may find helpful.

Breast Pumps and Supplies

Birth and Beyond
www.birthandbeyond.com
206-324-4831
In Madison Valley, 10 minutes southeast of UWMC.

Medela
www.medela.us
For families living outside the Seattle area, visit Medela’s Web site. They have a product locator that will search for rental stations in or near your zip code. The Web site also offers basic breastfeeding information.

Optimum Wellness, LLC
www.optimumwellnessllc.com
206-763-2733
Optimum Wellness delivers pumps to UWMC and in the greater Seattle area. Their staff assists with 3rd-payer billing for many insurance plans and medical coupons.

Village Maternity
www.villagematernity.com
206-523-5167
In University Village, 10 minutes north of UWMC.

WIC (Women, Infants and Children)
www.doh.wa.gov/cfh/wic/breastfeeding.htm
Throughout Washington state. Many WIC offices have breast pump loaner programs for their clients. Call your local WIC office for information.
Books


*The Preemie Parents’ Companion: The essential guide to caring for your premature baby in the hospital, at home, and through the first years*, by Susan L. Madden, M.S. (2000).

Breastfeeding Information and Organizations

Academy of Breastfeeding Medicine
www.bfmed.org
800-990-4ABM (800-990-4226)

American Academy of Pediatrics Policy Statements
http://aappolicy.aappublications.org

**Breastfeeding.com**
(Breastfeeding information and support)
www.breastfeeding.com

**Breastfeeding Online**
Jack Newman, M.D.
www.breastfeedingonline.com/newman.shtml

**Bright Future Lactation Resource Centre**
www.bflrc.com

**LaLeche League**
www.llusa.org
877-4-LA LECH (877-452-5324)

**National Breastfeeding Helpline**
www.womenshealth.gov/breastfeeding
800-994-9662

**Seattle King County Department of Public Health**
www.kingcounty.gov/healthservices/health/personal/breastfeeding.aspx
206-296-4786

**WithinReach and Breastfeeding Coalition of Washington State**
http://withinreachwa.org
206-284-2465
Medicines

**Breastfeeding Pharmacology**
Texas Tech University Health Sciences Center,
Thomas W. Hale, R.Ph., Ph.D.
http://neonatal.ttuhsc.edu/lact

**CARE Northwest**
(CARE stands for Counseling and Advice on Reproductive Exposures)
Provides information on the effects of drugs, chemicals, and other agents
during pregnancy and breastfeeding.
http://depts.washington.edu/terisweb/teris/cnw.htm
888-616-8484

**Herbals and Breastfeeding**
www.uspharmacist.com

**Toxnet**
Toxicology data network Web site has a “LactMed” search.

Milk Banks

**Human Milk Banking Association of North America**
www.hmbana.org

Preterm Babies

**Breastfeeding Your Premature Baby Using a Nipple Shield**
www.medelabreastfeedingus.com/tips-and-solutions/132/breastfeeding-
your-premature-baby-using-a-nipple-shield

**Family Village**
www.familyvillage.wisc.edu/lib_prem.htm

**Gaining and Growing: Assuring Nutritional Care of Preterm Infants**
http://depts.washington.edu/growing

**Kangaroo Care for Our Little Miracles**
www.geocities.com/roopage

**National Institute of Child Health and Human Development**
www.nichd.nih.gov
800-370-2943

**Parents of Premature Babies (Preemie-L)**
www.preemie-l.org

**Vermont Oxford Network**
www.vtoxford.org
Questions?

Call 206-598-4628

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC clinic staff are also available to help.

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Pumping

Pumping Moms Information Exchange
www.pumpingmoms.org/index.html

Twins, Triplets, and Quadruplets

National Organization of Mothers of Twins Clubs
www.nomotc.org

Triplet Connection
www.tripletconnection.org

Double Blessings
Resource for nursing pillows for twins: E-Z 2 Nurse and NurseMate.
www.doubleblessings.com

(See also UWMC’s Expecting Multiples Resource Guide, available from Perinatal Education at 206-598-4003.)

Web Pages with Breastfeeding Links

Breastfeeding Resources (International)
www.borstvoeding.com/abon/bf-resources.html

Getting Started with Breastfeeding
http://newborns.stanford.edu/Breastfeeding

Jane's Breastfeeding Resources
www.breastfeeding.co.uk
Breast-Pumping Record

- Use this form to keep track of how often you pump.
- In each hour box, write in the amount you pumped.
- Pump 8 times a day. A good plan is to pump every 3 hours during the day and a little less often at night. Pump during the night so that no more than 4 to 5 hours pass between 2 pumping sessions.

- If you pump less than 5 times a day, you risk losing your milk supply. Milk production improves with 8 or more pumping sessions a day.
- You can also use this form to track how much milk your baby is taking. Ask your NICU nurse how much your baby should have in a 24-hour period.

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