



Woman's

exceptional care,
centered on you

breastfeeding your special baby

**Newborn and Infant
Intensive Care Unit**

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Woman's Hospital Resources

Breastfeeding Warmline

If you have questions or need help after you go home, call our "Warmline" at 225-924-8239. You may leave a message on our answering machine. For an emergency after hours, call the nursery at 225-924-8286.

Community Education

Our Community Education Department offers "Breastfeeding Basics" classes. For more information and to register for classes, call 225-231-5475 or visit womans.org, and select "Classes & Events."

Perinatal Services (Obstetrical Services)

While in the hospital, the perinatal staff nurse will answer questions and help with breastfeeding problems.

Lactation (Breastfeeding) Department

Our lactation nurses offer a number of services during pregnancy, while you are in the hospital, and after you go home. They can also help you choose breast pumps and supplies you can use while breastfeeding. Call 225-924-8239.

Breastfeeding Consultations

Prenatal Consultations

A member of the lactation team is available to talk to you before delivery to assist with any personal questions or concerns. You may schedule an appointment by calling the Lactation Department Warmline at 225-924-8239. Your visit will last approximately 30 minutes. There is a charge for this service.

Hospital Consultations

A member of the lactation team will visit you before you leave the hospital. She can help you with any particular breastfeeding problems. In addition, the Mother/Baby nurses have received education training in breastfeeding and can assist you as well. There may be a charge for supplies if needed.

Follow-Up Consultations

If you have any problems after you go home, a member of the lactation team is available for follow-up consultations. To schedule a consultation, call the Lactation Department Warmline at 225-924-8239. There is a charge for this service.

Equipment and Supplies

The Mom & Baby Boutique is located on the first floor of the Physician Office Building next to Woman's Hospital and offers a wide selection of breastfeeding equipment and supplies. For information on items to purchase or rent, please call the Mom & Baby Boutique at 225-231-5578.

The boutique is open Monday through Friday from 9:00 AM to 5:00 PM. For emergencies after hours, call the Warmline at 225-924-8239.

Additional Community Resources

- La Leche League International
1-800-LALECHE or www.lalecheleague.org
- Family Road of Greater Baton Rouge
225-201-8888 or www.familyroadgbr.org
- Louisiana WIC (Women, Infants & Children) State Agency,
Louisiana Office of Public Health. 225-342-7893 or www.wic.dhh.louisiana.gov
- Louisiana Zipmilk: www.zipmilk.org

Breastfeeding The Special Care Infant



Making the Decision to Provide Breast Milk

Few parents expect or are prepared when their newborn baby is admitted to our Newborn and Infant Intensive Care Unit (NICU). If you had planned on breastfeeding your baby, you may have imagined peaceful nursing sessions with you and your baby snuggled together. Now, you may feel this vision is no longer possible to achieve.

Giving birth to a premature or ill baby (or babies) does not mean you cannot breastfeed. Actually, the opposite is true. If your baby is premature or ill, there is even more reason for you to provide your own milk and eventually breastfeed, if you desire. Providing milk for your baby allows you to contribute to your baby's care in a very special and unique way. The benefits of your milk can be crucial to your high-risk or preterm baby. Neonatologists and nursing staff encourage mothers to initially provide their own milk for an ill or premature newborn, even if those mothers do not intend to breastfeed later.

Your baby will receive the best start possible with your milk. You have several options for providing milk for your baby. You may choose to provide breast milk for your baby's most critical time, for the first few weeks when your baby is smaller and more ill, and then switch to formula. You may also choose to provide breast milk for your baby over an extended period of time even if you do not plan to actually "breast" feed your baby from your breast. Your milk will be fed to your baby initially through a tube, and then through a bottle. You can continue to provide breast milk in this way after you leave the hospital, if you wish. You may also choose to feed your baby a combination of breast and bottle feedings. This may include feedings consisting of all breast milk or a combination of breast milk and formula. Many mothers of twins and other multiples find the combination approach to be a good solution.

You may desire to eventually breastfeed your baby directly from the breast. This is called nursing. It is still possible to do this even though your baby has been taking a bottle. With patience, persistence, and flexibility, you and your baby can learn to nurse. Your baby's maturity level and medical condition will influence when nursing can begin.

Until your baby is able to nurse directly from your breast, you will need to express your milk (pump milk from your breasts) to start and maintain breast milk production. Milk expression allows your high-risk baby to get the benefits of your milk as soon as his stomach is ready to handle feedings. You should expect to express your milk until your baby is able to breastfeed well. Generally, the smaller or more ill your baby is, the longer you will need to express your milk before you can actually nurse your baby. This will differ for each individual baby.

This booklet was designed as a reference for you to use in addition to the support you receive from our NICU staff and lactation consultants.

Benefits of Breast Milk for the Special Care Infant

Providing breast milk for your high-risk infant takes time and commitment. You may already feel overwhelmed because you have a baby in the NICU. It may be easier for you to commit to providing breast milk if you understand just how much receiving your milk can help your baby. Nature designed human milk especially for human babies. It is the ideal food for your baby's first months of life and throughout the first year of life and beyond. Your breast milk contains just the right balance of nutrients. It also contains them in the form that is most easily used by your baby's immature body organs. Some benefits of breast milk include the following:

Quick Reference Phone Numbers

Lactation
Department
Warmline:
225-924-8239

Mom & Baby
Boutique
225-231-5578

Ease of Digestion

Because breast milk is digested faster than formula, your baby may have fewer problems with incomplete digestion or residuals. For example, when a baby is eating every 3 hours, any milk still in the stomach from the previous feeding is called a “residual,” meaning that some of the milk from the last feeding was not digested. Babies that are feeding continuously will have more milk in the stomach than they are receiving. This means less milk is being digested. A baby’s digestive system can break down breast milk more completely into its basic ingredients and absorb these nutrients from breast milk more efficiently than it can from formula. Therefore, babies who receive breast milk have fewer problems with constipation or infrequent stools. Premature babies who receive their mother’s milk are more likely to reach full feedings earlier than premature babies who receive formula.

Anti-infective Properties

Only human milk has many different disease-fighting qualities that help prevent mild-to-severe infections in babies. The milk a mother produces for her preterm baby has even higher levels of the qualities that fight infection. Antibodies in human milk can directly protect against infections. Other anti-infective factors create an environment that is friendly to the “good” bacteria and unfriendly to “bad” bacteria or viruses. Human milk also appears to have properties that help a baby’s own immune system work better. The anti-infective properties in mother’s milk are especially helpful for premature and other high-risk babies, since these babies are more likely to have problems with infections. Babies who receive their own mother’s milk are less likely to develop diarrhea and a severe intestinal illness called necrotizing enterocolitis during their hospital stay. If any of these problems do occur, they are usually less severe in the breastfed baby. Babies who are receiving breast milk have fewer gastrointestinal, respiratory, ear and urinary tract infections.

Visual and Intelligence Benefits

Generally, premature babies who receive breast milk develop better eye function and may perform better on different kinds of intelligence tests as they grow older. This is mostly due to certain types of fats (fatty acid chains) in human milk, which are available in some artificial formulas, but not equal to that of human breast milk. These fats have been shown to be especially important for the growth and development of a high-risk baby’s eyes, brain and nervous system.

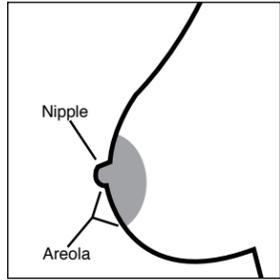
Breast Changes to Expect

Breast tissue is formed by the skin, chest muscles, blood vessels, nerves, fatty tissue and milk-producing tissue. The areola is the darkened, circular area surrounding the nipple. Inside the breast, milk glands (lobes, lobules) contain the alveoli that make and secrete breast milk. Milk ducts transport the milk from the alveoli to the duct openings in the nipple. Montgomery glands, noticed as bumps on the areola, secrete a protective lubricant that prepares the breast for breastfeeding and keeps it clean.

Even before you thought about becoming a mother, your breasts were getting ready to someday breastfeed a baby. Milk production glands begin to develop during puberty. During pregnancy, hormones develop the breast tissue even further, although the size of your breasts does not affect your ability to breastfeed.

The breast, areola and nipple increase in size and the nipple and areola also become darker. Veins may be more noticeable as breast tissue grows, and milk glands and ducts increase in number and grow in size. Beginning in the second trimester of pregnancy, your breasts produce colostrum. You may notice a few drops of this thick, golden fluid that is also called the “pre-milk” or “first milk.”

Once your baby is born and the placenta is delivered, hormones make the alveoli produce milk. Additional blood and lymph fluid also go to the breasts to help produce milk. Your breasts will swell as milk begins to fill the ducts. This usually happens by the third day after delivery and normally lessens around day 7 to 10. This decrease in swelling is NOT a sign of decreased milk supply.



Getting Started

Milk Expression, Collection, and Storage

You will have to depend on a breast pump to both tell your body to start producing milk and to keep producing milk. You will have to continue to use the pump until your high-risk baby can nurse regularly and is able to maintain a plentiful milk supply by nursing effectively at each feeding. The most effective type of breast pump for this purpose is a hospital-grade, electric breast pump with a double-collection kit. Most mothers find it takes less time to get more milk when using this type of pump. The automatic suction and release action of this type of pump more closely imitates the way a baby sucks than do other pumps.

You will find other types of breast pumps on the market, such as small manual or battery-powered pumps. While these pumps work well for mothers who only need to pump once or twice a week, they are not enough to start and keep producing enough milk for a high-risk baby. If you have questions about the type of pump to purchase or rent, or have questions about a breast pump you are considering, talk with our lactation consultants.

The most important part of starting and keeping a milk supply is to express your milk frequently and completely. The most important time for you to establish a milk supply that will be enough to feed your baby as he grows is the first 3 to 4 weeks after your baby is born. If you want to have enough milk for your baby for 6 weeks or longer after delivery, you must pump frequently for the first 3 to 4 weeks using the following recommended pumping schedule. This is important even if your baby is not taking all of your milk.

- You will need to pump at least 8 to 12 times in a 24-hour period.
- This is about every 2-1/2 to 3 hours when you are awake and at least once at night.
- Do not go longer than 4 hours without pumping at night.
- Make sure you have at least 1 pumping session between the hours of 10 PM and 2 AM.
- Pump for a total of at least 100 minutes of pumping in every 24-hour period.

The length of the time between your pumping sessions at night is especially important. If your breasts are very full when you wake to pump during the night, you need to shorten the amount of time you sleep between pumping sessions. You should also wake earlier in the morning to pump. When your breasts stay full for an extended time, at night or during the day, your body will decrease its production of prolactin. This, in turn, decreases your milk production. If you do not keep a frequent pumping schedule during the first 3 to 4 weeks, you may not have enough breast milk to feed your baby after 6 to 8 weeks. This means you will need to supplement breast milk with formula to give your baby the amount of milk he needs.

If you are able to express at least 24 ounces of milk in a 24-hour period, after pumping your breasts for 3 to 4 weeks, you may relax your pumping schedule somewhat. You can slightly lengthen the amount of time you go without pumping at night up to

5 hours. However, do not entirely drop the nighttime pumpings, or your milk supply will diminish. Make sure to continue to pump for a total of 8 times each day. Keep track of your daily milk totals. Your average daily supply should not decrease because you have changed your pumping times. If you notice a decrease in your daily milk totals when changing your pumping times, return to a more frequent pumping schedule.

Many mothers find it helpful to set up a milk collection schedule and pump at set times throughout the day. You may also find it helpful to keep a pumping diary of the times and amounts you pump throughout the day and night. The diary will allow you to easily track your supply and be able to spot a decreasing supply early so you can try ways to increase your supply. Your lactation consultants or nurses can give you copies of the diary.

The amount of milk you will be able to express will change over time. Do not be discouraged by the small amount of milk produced in the first 3 to 5 days after delivery. You may not see any milk during the first several sessions, and then you may see only drops for several sessions or days after delivery until your milk comes in. The milk produced in these first days after your baby's birth is called colostrum. Although it is normally produced in small amounts, colostrum is especially high in the properties that help protect your high-risk baby against infections. If you are able to pump only a few drops of colostrum, it can still be saved and fed to your baby.

Finding a Pump

Ideally, you may begin expressing your milk within 6 hours after the birth of your baby. The hospital has appropriate breast pumps available for you to use before you leave the hospital. We can provide you with a double-collection kit for the type of pump you will be using. The collection kit includes tubing, breast flanges and collection bottles. The tubing attaches to the pump itself and transfers suction to the breast flange. The flange is the piece that is in direct contact with the breast. It will be centered over the nipple and areola of the breast. The collection bottle then attaches to the flange to collect the milk as it is expressed from your breast. This collection kit is yours to take with you when you leave the hospital.

You can rent breast pumps on a weekly or monthly basis. If you decide to rent a pump, be sure that it is a hospital-grade pump and that it will work with the collection kit you already have. Breast pumps can be rented through the Mom & Baby Boutique located on the first floor of the Physician Office Building, next to Woman's Hospital. Mothers who qualify for the WIC program may also be able to get a breast pump from their parish health unit. If you plan to get a pump from WIC, it may be a good idea to rent a pump for the first week to allow you some time to get the pump from WIC and ensure that you will not miss any pumping sessions.

Information WIC needs to know when calling for postpartum appointment includes:

- Your delivery date
- Gestational age of your baby
- Plans to provide breast milk for infant while in the NICU
- Your availability to schedule an appointment to be certified as a postpartum breastfeeding mother.

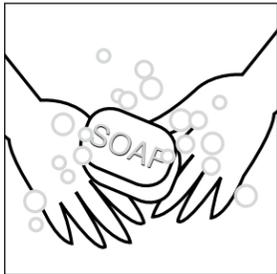
Preparing to Pump

Your first pumping session will be performed while you are still in the hospital. Either your nurse or one of the lactation consultants will help you set up the pump and position it on your breast. Make sure to ask any questions you have about the procedure. You will need to follow the same process after you have been discharged from the hospital. Make sure you read all the instructions about your pump before using it. To make your pumping session more effective and comfortable, pump in a place where you can relax. Make yourself comfortable before pumping by sitting with your shoulders and back relaxed. Have everything you need within reach, including something to drink. The following tips may also help stimulate let-down:

- Gently stimulate the nipples before you begin.
- Have something to eat or drink just before pumping and while pumping.
- Massage your breasts before you begin and periodically during the pumping session.
- Think of your baby, pump in your baby's room, look at a picture of your baby while pumping or smell an article of clothing your baby has recently worn.

Pumping Procedure

- Wash your hands with soap and water before you begin.
- Assemble all pump parts. Plug the pump in and check the suction setting before placing it on the breast.
- Before you turn the pump on, center the shield over your nipple so the nipple can move freely without rubbing against the sides.
- Always begin pumping with the suction regulator set on a level that is comfortable for you. Use this setting for the first few minutes of pumping. Gradually increase to the setting that removes milk completely in the shortest time. You should not feel any pinching or pain.
- You should pump each breast for 10 to 15 minutes and for at least 2 full minutes after the milk flow stops.
- Mothers using a single-collection kit will need to pump each breast for about 10 to 15 minutes or until you completely empty your breast and for at least 2 full minutes after the milk flow stops. You may want to switch the pump from side to side occasionally during the pumping session, massaging the breast gently each time you switch sides. This may help the milk to flow more easily.
- Mothers using a double-collection kit will need to pump both breasts for a total of 10 to 15 minutes and for at least 2 full minutes after the milk flow stops. You may find that massaging the breasts from time to time during the pumping session will help milk flow more easily. You will find double-pumping is much faster than single-pumping. Double-pumping will also help increase your prolactin levels and may in turn help increase your milk supply.
- Milk should be pumped into sterile plastic bottles. You may pump into either the collection bottles supplied with your pumping kit or directly into the graduated bottles given to you by the staff. If you express more than 2 oz per side at each pumping session, you will need to pump into the larger collection bottles first, then pour the milk into the smaller graduated bottles, adding no more than 60cc per bottle to allow for expansion as milk sterilizes.
- The graduated markings are on the side of the feeders:
 - 1 oz = 30cc
 - 2 oz = 60cc



- If you are pumping more than 2 oz per side at each session, it is important for your baby that you pump into the larger collection bottle first so that all of the milk will be equal in calories. Milk pumped early in the session is very low in calories and fat. This is called foremilk. Milk pumped later in the session is higher in calories and fat. This is called hindmilk.
- If your baby is just getting started on feedings, you may want to pour only 1 oz per bottle to waste as little breast milk as possible. Talk with your baby's nurse for suggestions on amounts to store.
- Recap each bottle. Try not to handle the caps too much so that they stay sterile.
- Attach a label onto each bottle of breast milk opposite the graduated markings. We will also give you labels. You can ask for more whenever you need them. Be sure to fill in the date and time the milk is pumped and any medicine you are taking.
- Place the milk in the refrigerator or freezer (not in the door). If your milk is not going to be used within 24 hours and your baby is still in the hospital, you should immediately place the milk in the freezer. DO NOT add freshly pumped milk to milk that has already been refrigerated or frozen.
- When you have finished pumping, allow your nipples to air dry. If you experience sore nipples, it may help to pump more often but for shorter times or to use a lower setting. Expressed breast milk can be massaged into sore nipples after pumping. A small amount of pure hydrous lanolin can be applied to the nipples after pumping. Lanolin does not have to be washed off before the next pumping.
- Transport your milk to the hospital in a small cooler-carrier. Wrap the cold or frozen milk in a soft cloth and place a frozen reusable cold pack into the cooler-carrier with the milk. Do not put ice cubes around your containers of frozen milk. Ice will cause your milk to thaw more quickly.

Cleaning your Pump

- After each use, rinse the breast flange in cold water first, then use hot, soapy water to wash all pump parts that touch milk. Rinse the pieces with hot water, and allow them to air-dry upside down on a clean towel.
- Sterilize all pump parts that touch milk and all reusable bottles once a day by boiling for 20 minutes. Allow them to air dry upside down on a clean towel. There is no need to boil the prepackaged bottles unless they have been contaminated after they have been opened or before you use them. You can also use a bottle sterilizer or a microwave sterilizer made especially for bottles.

Storing Your Milk For Your Hospitalized Infant

Freshly pumped breast milk that has never been refrigerated can remain at room temperature for only 1 hour before it must either be fed to your baby or stored for future use. If your baby will not receive the milk within 1 hour, it should be refrigerated or frozen immediately. Your milk can be stored for:

- 2 to 4 weeks in a freezer section that is inside a refrigerator
- 4 to 6 months in a freezer that is not frost-free
- 12 months in a deep-freeze freezer set at 0°F

Thawed breast milk should be used within 24 hours and should never be refrozen.

How Will My Baby Be Fed My Milk?

Initially, your baby may be too immature or ill to receive any feedings. Your milk will be stored in the freezer in the newborn and infant care center until it is needed for feedings. Early feedings will most likely be given to your baby through a small tube that is inserted into your baby's mouth and advanced into the stomach. This tube will be necessary until your baby is mature enough and well enough to actually suck to receive feedings by mouth. Some babies, especially smaller babies, receive their feedings continuously through this tube, similar to the way intravenous fluids are given through a tube inserted into a vein. Other babies receive feedings every 2 to 4 hours, depending on the status of their medical condition.

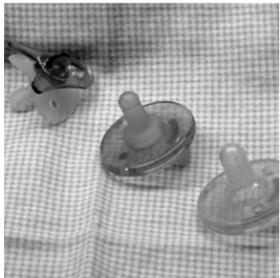
When your milk is needed for feedings, it will be thawed, either in the refrigerator, at room temperature, or in a milk warmer. Once thawed, your milk will be prepared with any necessary additives and used within 24 hours. If breast milk is given by continuous infusion, only 4 hours of milk will be removed from the refrigerator at a time, and all tubing and syringes will be changed every 4 hours. This minimizes any bacterial growth in the milk or tubing. As your baby matures and improves, he will slowly start to receive a combination of feedings from the tube, bottle and breast, depending on his or her medical condition.

A special pacifier will be offered to your baby during these "tube" feedings to prepare your baby for oral feedings at a later date. This pacifier will help your baby associate sucking with a fullness in the stomach, as well as strengthen muscles in the mouth for later oral feedings. It is fine to give premature and ill babies a pacifier. It offers a way for your baby to calm himself.

Is My Milk Enough?

Nutrients occur at the same or higher levels in milk from mothers that deliver premature babies as they do in mothers who deliver full-term babies. Also, the overall calorie count is usually the same for both, especially after the first few weeks. Human milk contains lower levels of some nutrients than artificial formulas contain. However, these nutrients are better absorbed by your baby's body from breast milk than from formula. The nutrient levels and the available calories in breast milk are often enough for older or bigger premature babies, and for many other high-risk babies. However, higher nutrient and calorie needs may create problems for babies weighing less than 3-1/2 lbs or for babies with certain health conditions affecting digestion or the use of nutrients. These babies may not get enough of the minerals such as calcium, phosphorous and iron from their mothers' milk alone. They also may need additional calories.

Although your milk is best, it is not always complete for the nutritional needs of very small or sick babies. Fortunately, adding nutrients and calories to, or "fortifying," a mother's milk does not appear to lessen the nutritional benefits and extra protection against infection that your baby will gain from receiving your milk. Fortifying your milk will make sure your high-risk baby receives ALL of the nutrients he needs at this time. How long your baby receives added nutrients and calories will depend on your baby's age, weight, physical condition and ability to breastfeed well. Here are the most common ways nutrients and calories are added to breast milk.



NICU Premature Pacifiers

Common Ways to Fortify Breast Milk

- Human milk fortifier (HMF): Human milk fortifier contains several nutrients, especially certain minerals, that are needed for proper bone development in low birth weight babies. It also increases your milk's overall calorie content. Human milk fortifier is a powder that is added directly to breast milk.
- Premature infant formulas: If your milk supply is not enough to provide all of your baby's feedings, the milk will be mixed with liquid formula as needed. Occasionally, your baby may also have powdered formula mixed with breast milk.
- Single-nutrient supplements: Occasionally your breast milk may be supplemented with a single nutrient to increase a specific component of your milk, such as a carbohydrate or fat supplement, to increase calories.
- Hindmilk supplementation: If you have a large supply of breast milk well in excess of your baby's needs, you may be asked to separate your milk into milk pumped early in the session and milk pumped later in the session. The milk pumped later in a single pumping session, called hindmilk, is very high in fat content compared to the first milk you express in that session. If your baby only receives hindmilk, the overall calories your baby consumes will be higher. You will be instructed about separating your milk if this is needed.

How Much Milk Should I Be Pumping?

The amount of milk you produce will vary from day to day and, sometimes, within a single day. In the first few days after your baby's birth, you may not be able to express more than a few drops to a tablespoon or so of milk at each pumping session. This is normal production of the early milk or colostrum. About 3 to 5 days after birth, you will probably start to notice a steady increase in the amount of milk you are able to express at each session. After 7 to 10 days of frequent pumping sessions—at least 8 times and for a total of 100 minutes or more each day—expect to produce about 16 to 32 oz, or about 500 to 1000cc, of breast milk a day. Another way to look at this volume is approximately 1 oz every hour. If you are pumping every 2 to 3 hours, this means you should expect to get 2 to 3 oz or more at each pumping.

This may be more milk than your baby needs just now, but you will be glad to have extra milk in the freezer. Milk production usually drops at some point, especially 4 to 6 weeks after the birth of your baby. Do not be discouraged with this drop in your milk production. Continue to pump frequently and you may resume normal milk production in a few days to a week. Occasionally, a mother must also take a medicine or receive a treatment that may make milk unusable for a few days. Stored milk can be used at that time. Do not be surprised if you pump more milk at some pumping sessions than during others. Expect some variation in the total amount pumped from day to day. Talk to your lactation consultant if you find the daily milk total keeps dropping for several days in a row or if you are not expressing at least 16 oz a day by the middle of the second week after your baby's birth.

Maintaining Your Milk Supply

The most important factor for keeping your milk supply steady is frequent and complete emptying of the breast. It is normal for the amount of milk you express to vary from day to day and from one pumping session to another. Many mothers produce more milk at the beginning of the day and less at the end of the day. Some mothers also produce different amounts of milk from each breast. There are many factors that can affect your milk supply.

Factors That Increase and Decrease Milk Supply

Factors that may increase milk supply are:

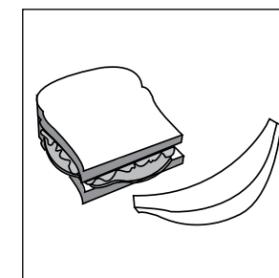
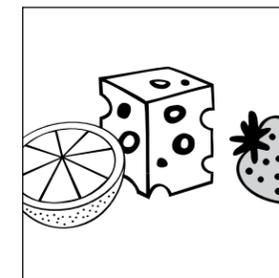
- Frequent milk expression
- Hospital grade breast pump
- Complete breast emptying (pumping for two minutes after milk flow stops)
- Adequate rest and relaxation in the mother
- Improvements in your baby's condition
- Touching and holding your baby
- Beginning to nurse your baby / Kangaroo care
- Correct flange fit
- Adequate hydration.

Factors that may decrease milk supply are:

- Infrequent or missed pumpings
- Incomplete breast emptying
- Fatigue, anxiety or stress in the mother
- Worsening of your baby's condition
- Some medicine, for example, like long-acting antihistamines and some birth control pills
- Illness in the mother; most of the time your milk is safe when you are sick and have a fever, but your supply may decrease
- Cigarette-smoking and alcohol or drug use by the mother.

Your Nutrition Matters

Your body prepares for lactation during your pregnancy. It stores 4 to 8 lbs of body fat that are used for extra energy and nutrients. While providing milk for your baby, it is still important to practice healthy eating habits and to consume a well-balanced diet. Your estimated needs increase by 500 calories per day during lactation. If you are providing breast milk to more than one baby, additional calories are necessary. This is sometimes difficult to do with the busy schedule of a new mother. You may find it easier and more realistic to consume small, frequent meals and snacks. Including more snacks that contain extra nutrients may help you do this. See the list at right for some ideas.



High-Nutrient Snacks

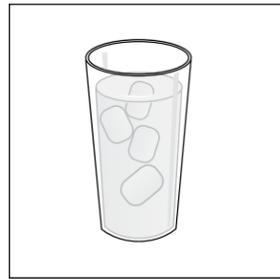
1 oz cheese,
6 saltine crackers,
8 oz low fat milk

OR

2 slices of bread,
2 tbsp peanut butter,
1 tbsp jam, 4 oz juice

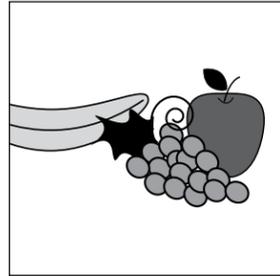
OR

1 medium banana,
8 oz yogurt



Recommendations for Good Nutrition in Lactating Mothers

- Incorporate a variety of foods in your diet, eating different grains, fruits, vegetables, dairy products, meat and meat alternatives. There are no foods that you need to avoid when your breasts are producing milk (lactating). However, some spicy or strong-flavored foods may change the flavor of breast milk. This may make some babies fussy, but other babies will not even notice. If certain foods seem to upset your baby, just decrease the amount or frequency that you eat those foods.
- It is possible that your baby could be allergic to foods in your diet. If you feel this is the case, eliminate that food from your diet for a week. When you add the food back into your diet, watch for your baby's reaction to return. Remember that it takes 4 to 6 hours for food to affect breast milk.
- Drink plenty of fluids, approximately 8 to 10 8-oz glasses per day. Sipping from a glass while nursing and drinking when thirsty should be sufficient. Fluids may be in the form of water, fruit or vegetable juice, milk or soup. You should not need to force fluids. Drink to thirst and enough to keep your urine a pale yellow color.
- Include fruits, vegetables and other foods high in vitamin A. These include carrots, liver, eggs, milk, green and yellow vegetables and sweet potatoes.
- Limit caffeinated drinks to 2 cups per day. Caffeine passes through breast milk, and it may cause your baby to become fussy.
- Do not use any products or diets suggesting rapid weight loss.
- Avoid alcohol. It passes through breast milk and can be detrimental to your baby.
- Avoid smoking or allowing any smoke around your baby. This may decrease your milk supply and cause respiratory problems for your baby.
- Check with your doctor before taking any medicine (prescribed or "over-the-counter"). Some medicine can pass through your breast milk.
- Avoid herbal products and supplements. They may have side effects such as nausea, vomiting and convulsions. These effects may be passed on to your baby through breast milk.
- If you are a vegetarian, it is especially necessary for you to eat enough protein, calcium, vitamin B12 and vitamin D. The following are good, nonmeat sources of these nutrients:
 - Protein sources:** dairy products, eggs, peanut butter, legumes, nuts, tofu and enriched grains
 - Calcium sources:** dairy products, dark leafy green vegetables, nuts, calcium-processed tofu, calcium-fortified orange juice, legumes and enriched grains
 - Vitamin B12 sources:** dairy products, eggs, soy products and B12-fortified grains
 - Vitamin D sources:** vitamin D-fortified soymilk, regular sun exposure
- Take prenatal vitamins and iron if prescribed during pregnancy.



Breastfeeding Twins, Triplets and More

Pumping milk for and breastfeeding more than one baby at a time can seem like an impossible task. However, it is quite possible to breastfeed twins, triplets or even quadruplets or higher multiple-birth babies. Multiple-birth babies receive the same benefits of human milk that single-birth babies receive, but there are additional benefits to the mother that are enhanced when she provides milk for multiples. The hormones released during breastfeeding or pumping will help to contract an overly stretched uterus and even provide some relaxation hormones in a mother who is stressed about having babies in the intensive care nursery or about having more than one baby at home. Breastfeeding multiples can promote and ensure a mother is able to bond and feel close with each baby. Once your babies are actually nursing, you may find you save a significant amount of time from not having to prepare formula and bottles. There is also a significant cost savings from not having to buy formula for more than one baby. A family of twins may save more than \$1600 in formula and bottle costs during the first year.

When your babies begin to nurse, you will probably find you are more comfortable nursing the babies separately. As you and your babies become better at this, nursing two babies at once is possible. The lactation consultants can help you with positions and strategies for nursing multiples as you progress with breastfeeding and after discharge.



Beginning to Breastfeed

The Early Nursings Kangaroo Care

There is no “one size fits all” method to learn how to breastfeed a high-risk baby. Each baby and each situation is different. Learning to breastfeed well may take days or weeks for premature and other high-risk babies. However, you and your baby can become a breastfeeding team if you are patient, persistent and flexible. Before your baby is ready to practice breastfeeding, he or she can feel what it is like to be close to your skin and hear your heartbeat. This happens when you hold your baby skin-to-skin against your chest. This is also called Kangaroo Care.

Kangaroo Care is actually the first phase of learning to breastfeed for you and your baby. When you hold your baby skin-to-skin, dress your baby only in a diaper. Position your baby upright on your chest directly on your skin between your breasts. Cover both you and your baby with a blanket by placing the blanket across your baby’s back. You can sit with your baby in this position for as long as you desire and as long as your baby is calm.

Some of the many advantages of Kangaroo Care for both mother and baby are:

- Babies stay warmer when warmed by their mother’s body than when held wrapped only in blankets
- Mother and baby begin to bond earlier
- Babies have a more regular heartbeat
- Babies sleep for longer periods
- Babies cry less often
- Mother’s milk supply increases
- Babies gain more weight

You may begin to notice signs that your baby is ready to feed directly from the breast. Some of the signs are that your baby is awake for short periods, your baby is rooting or nuzzling at your breast during Kangaroo Care, and your baby is sucking on feeding tubes and pacifiers more often.

Your baby will most likely be between 32 and 34 gestational weeks before the reflexes he needs to be fed by mouth, such as the suck/swallow/breathe coordination and gag reflexes, are present and coordinated. Breastfeeding is usually less stressful than bottle feeding for a high-risk baby because the baby sets the pace, both for an individual feeding and for the process of learning to feed well. A baby’s heart and respiratory rates, oxygen saturation level and body temperature tend to remain more stable and often improve during breastfeeding. This stability of physiologic systems means breastfeeding can take less energy and be less work for a high-risk baby. Of course, a baby must actually latch on and actively suck to get milk during breastfeeding. This may take time for a baby to learn. When bottle feeding, milk drips in the baby’s mouth and a baby must swallow it, ready or not.

“Empty Breast” Feedings

The purpose of these early or non-nutritive feeds is for you and your baby to work on positioning and latching on without worrying about milk transfer. You will want to pump before skin-to-skin holding sessions once you notice the baby is rooting and nuzzling. Then, the baby can latch on and practice without being overwhelmed by the milk “let down.” If your baby becomes overwhelmed by a rapid and large milk flow, you may hear or see your baby cough or gag, both of which can frighten you. Pumping prior to Kangaroo Care will prevent this.

For these early feedings, sit in a comfortable chair. A chair with arms will give you more support. Use pillows on your lap or sides to help support your baby. You may also want a pillow behind your back or to sit on, to make yourself more comfortable. There are different positions that you can use to try to hold your baby while nursing. Usually, you will need to use a type of hold that gives you control over your baby’s head. The image most women have is that of a nursing baby cradled in the crook of his mother’s arm. However, this position usually does not work well for early breastfeeding sessions. You do not have a lot of control over your baby’s head position, and your baby will often not have enough strength to remain on your nipple. This is especially true of the premature baby.

The breastfeeding positions most women find best are the clutch or “football” hold and the cross-cradle hold. In both methods, you use your hand to support your baby’s head. This allows you to have more control as you guide your baby to your breast. In the clutch hold, your baby’s head and shoulders are held in your hand and his body is tucked under your shoulder and arm. In the cross-cradle hold, his head and shoulders are held up in your hand, but your baby’s body lies across your chest with your baby’s face and body facing your chest. Regardless of the hold you use, your baby’s head, shoulders, and hips should be in a straight line. Your baby should not have to turn his head to reach your breast. The pictures on page 14 show premature babies in each type of hold.

Once you decide which hold is most comfortable for you, you can begin to help your baby latch on to your nipple. You will need to support and position your breast with the hand you are not using to support your baby’s head. Cup your breast in your hand with 4 fingers underneath and your thumb on top, keeping your fingers behind the areola. Gently squeeze your breast to narrow the area where your baby will latch onto the nipple. Once your baby is latched on, you will need to keep your hand in this position so your nipple will not slide out of your baby’s mouth.

Once you have your baby and your breast positioned, you will need to encourage your baby to open his mouth. To do this, tickle your baby’s lips with your nipple. This should make your baby open his mouth wide. Wait until his mouth is open wide, like a yawn, then quickly pull your baby towards your nipple, with his chin touching your breast first. Your goal is to have your baby’s lips and gums grasp the areola behind your nipple, with at least 1/4 to 1/2 inch of the areola drawn into his mouth. His lower lip should be turned out and his tongue should be under your nipple. With his mouth positioned this far on the areola, your baby can better express milk from your breast. Proper positioning at the breast will help prevent sore nipples. Remember to bring your baby to your breast, not your breast to your baby. If you move yourself forward to put your breast in your baby’s mouth, there will be more stress on your back. This may be uncomfortable.

How you feel while your baby is sucking will let you know if your baby has a good latch. A tugging or pulling feeling usually means your baby has a good latch, whereas a pinching or biting feeling can mean he or she does not. If your baby does not latch on or if you feel pain, take your baby off your breast and repeat the latch-on procedure.

To take your baby off your breast, you should insert your little finger into the corner of your baby’s mouth. This should break the suction and allow you to gently remove your breast from your baby’s mouth. Never pull your baby from your breast without first breaking the suction. You could damage your nipple.



Skin-to-Skin Holding
(Kangaroo Care)



Football or Clutch Hold



Cross Cradle Hold



Cradle Hold



Alignment

- Baby’s head is tilted slightly back, in the drinking position
- Align the baby’s nose to the nipple with the baby’s chin and lips lightly touching the areola below the nipple
- Wait for a wide open mouth



The Latch

- The mother assists the baby to the breast with gentle pressure across the shoulders
- Baby’s chin touches the breast first
- The top lip and gum just clear the nipple as the baby latches to the breast



The Latch

- The latch is asymmetrical
- The lips are flared, like a wide “V”
- The chin is buried in the breast
- The cheeks rest against the breast
- The lower jaw drives into the breast with each suck
- Mother experiences a pulling or tugging sensation, but no pain



Transition to Nutritive Feeds

Preparing for Discharge

As your baby grows and matures, his ability to coordinate the suck/swallow/breathe reflex matures as well. Once your baby has developed the ability to coordinate these reflexes, he can safely swallow milk and may have even had some bottle feeds. This is called nutritive feeding. You can begin nutritive feeds at the breast when your baby is bottle feeding 3 times per day. Talk with your baby's nurses and doctors and your lactation consultants about when you can begin to attempt to nurse. Once your baby is stable enough to attempt swallowing milk from your breast, you will need to decrease or stop pumping for 2 to 3 hours before a nursing session.

The goals of early nutritive feedings at the breast are to assess your baby with small amounts of milk transfer. After latch on, you may begin to hear your baby swallowing milk, which sounds like a "kaa" in the back of his or her throat. You will need to continue to pump your breasts after each nursing session during these early "practice" feedings and regularly when you are away from your baby. This is because these early feedings will not remove enough milk from your breasts to keep up your milk supply. Therefore, milk production will fall if pumping does not continue. The amount of milk removed while nursing increases as your baby becomes stronger, more efficient, and is able to nurse for longer periods of time.

How Do I Know My Baby is Getting Milk?

The most frustrating part of breastfeeding for any mother is knowing whether the baby is getting enough milk. The unknown amount of milk consumed worries mothers of preterm and full-term infants alike. This uncertainty is one of the main reasons mothers of preterm infants may stop attempting to breastfeed after the baby leaves the hospital. The more practice you have at breastfeeding your baby, the more comfortable you will become in determining if your baby is "getting enough."

There are several ways that you can guess how much milk your baby is getting:

- Watch how well and how long your baby sucks and swallows. A baby who is nursing well has a regular sucking pattern for long periods. You can also hear the baby swallow after every suck or every other suck.
- Follow the time your baby is able to nurse. This will vary from baby to baby. A preterm baby may take longer or nurse on only one breast at a feeding if there is a large supply of milk.
- Notice how full your breasts are at the beginning and end of each feeding. Your breasts should be softer after the feeding. However, if you have a milk supply much larger than your baby is taking, your breasts may stay so full that you may not notice a difference after feedings. To compare your supply with how much milk your baby is taking, compare how much you are able to pump at each session with the amount of milk your baby usually takes during a bottle feeding.
- Test weights may be performed on your baby before and after a single breastfeeding. Your baby will be weighed fully clothed immediately before and after the feeding using an electronic scale that can measure a very small amount of weight. It is important that you not change any of your baby's clothing or diapers until the feeding is finished and your baby has been weighed at the end of the feeding. The difference between the two weights will estimate how much milk your baby got at that feeding.

The length of time from the start of nutritive breastfeedings until a baby is ready for discharge will differ for every baby. The smaller or more ill your baby is, the longer this process will take. Your baby may also go home with a combination of breast and bottle feeds until he has a stronger suck and has fewer problems breastfeeding.

Breastfeeding at Home

Your baby still may be giving you the "I'm hungry" signals or be breastfeeding well by the time he leaves the hospital, but the NICU staff and lactation consultants will be able to work with you to develop a discharge breastfeeding plan. Your discharge plan will be designed with you and your baby's unique situation in mind. However, the plan may include all, or some, of the features listed.

Common Features of a Breastfeeding Plan

- Wake your baby to breastfeed every 3 hours or at least 8 to 10 times per day if he or she has not yet mastered signals that tell you "I'm hungry." Some of the "I'm hungry" signals include rooting, sucking on hands, fussiness, and crying. Crying is a late sign of hunger.
- Nurse your baby whenever he does give you the "I'm hungry" signals, even if it has not been 3 hours since the last feeding.
- Monitor latch on, nutritive versus non-nutritive sucking patterns before, during and after milk let-down, and the length of feedings.
- Chart the number, amount and color of your baby's urine and stools for wet and dirty diapers on a daily record. Your baby should produce six or more soaking wet diapers in 24 hours with a bowel movement following two or more feedings each day.
- Test weigh your baby before and after some feedings.
- Use breastfeeding devices such as a nipple shield to encourage nutritive sucking or supplemental bottles with formula or breastmilk to provide your baby with additional nutrition during the "learning to breastfeed" process.
- Offer additional expressed breast milk or a prescribed infant formula. This additional amount should be based on your baby's progress at breast and changed as sucking ability improves. Supplementing should be expected if your milk supply at discharge was not fully meeting your baby's needs or if your baby was not yet nursing well at every feeding. As your baby nurses more often and more effectively, your milk supply will most likely increase naturally, and your baby's need for extra feedings will decrease. Pumping after feedings will also help to increase your milk supply.
- Pump to remove milk until you and your baby's doctor are satisfied that your baby no longer needs additional expressed breast milk. Your baby should completely empty your breasts during each nursing.
- Continue a schedule of follow-up care by your baby's doctor and your lactation consultant to help you monitor breastfeeding progress and revise the plan as needed.
- If you still have problems with breastfeeding after you are home, the hints listed on page 18 may help.

Hints for Breastfeeding at Home

- Skin-to-skin contact is not just something you do with your baby in the hospital. It continues to benefit you and your baby at home, too. Many mothers report that it seems to help them continue to produce milk. Also, it just feels good to cuddle this way.
- If your baby sometimes chokes during breastfeeding, he or she may be having difficulty controlling the milk flow during let-down. Most babies do learn to handle milk let-down as they mature. Until then, you might try pumping through the let-down immediately before a feeding. Another option is to take your baby off your breast until the milk flow slows.
- When your baby has the basic idea of nutritive sucking but cannot seem to do it every time, try pumping one breast while nursing your baby on the other.
- You may want to stop a breastfeeding session if you or your baby gets too frustrated or when feedings are taking longer than 40 to 45 minutes. Often a high-risk baby will latch on and then let go of the breast repeatedly. You may also need to keep waking your baby if he quickly falls asleep after sucking for only 2 or 3 minutes. By stopping when frustrated or limiting the time of feedings, you will have more time to pump and remove milk well.
- You may want to let your baby's father or other family members and friends help with the supplemental bottle feedings. This will free you to concentrate on the breastfeeding and pumping sessions.
- Stay in touch with the hospital lactation consultants who can describe and demonstrate alternative feeding methods and help you figure out which ones to try. Consultants can also help you revise your breastfeeding plan as often as needed as your baby's nutritive sucking continues to improve. It may help to keep a daily feeding diary. The diary should include the number of breastfeedings, the amount and kind of supplement used, the number of diapers that are wet and the number of bowel movements for each day. Also include the time, length and amount of milk obtained from additional pumping sessions.
- You may want to consider temporarily renting a scale at home to monitor your baby's weight and intake. Talk with your breast pump rental station to find out if they have scales to rent as well. Medela® offers a rental scale for use with breastfeeding at home called the BabyWeigh™ Scale.
- Keep thinking positively. It is normal to get frustrated and think your high-risk baby will never learn to breastfeed well. It is normal if some days seem like a never-ending cycle of breastfeeding practice, bottle-feedings and breast-pumping sessions. It is also normal for your confidence with breastfeeding to rise and fall.
- Get support by staying in touch with the hospital lactation consultants and contacting a local breastfeeding support group. Some of these groups are listed in the *Mother Baby Care Guide*.

When Can I Relax?

You can relax and breastfeed without having to worry about pumps, devices or bottles when your baby can get enough milk from the breast alone using the appropriate suck/swallow/breathe action associated with effective nursing and when your baby demonstrates good weight gain. Your baby should be doing well and getting enough from nursing when he:

- Wakes and signals to breastfeed at least 8, and up to 12, times in a 24-hour period
- Seems content for at least 1 to 2 hours after most feedings (Most babies will have a fussy period sometime during the day.)
- Produces 6 or more soaking wet diapers in 24 hours
- Passes a small yellow bowel movement after 2 to 5 feedings per day until several weeks beyond his due date. Your baby may have stools with every feeding. At discharge, ask your baby's nurse about the times and instances when your baby normally has bowel movements during the day. Use this as your guide.
- Gains at least 4 to 8 oz each week for the first 3 to 4 months after your due date

Many breastfeeding women experience problems or difficulties during the time they are expressing breast milk or breastfeeding their baby. Some of the most common problems are discussed below.

Problem-Solving Guide

Sore Nipples

Sore nipples are common for many women during the first few days as they begin pumping for their hospitalized baby. The following measures may be helpful:

- Place a clean, warm, wet washcloth on your breasts just before pumping. This will help stimulate your milk flow.
- Massage both breasts and gently roll your nipples between your fingertips just before you pump. This will help your milk flow more readily, hopefully allowing you to use a lower suction setting.
- Gently hand-express a small amount of milk just before you pump. This will stimulate milk to flow more easily because of the hormones your body releases in response to the hand expression.
- Try a different size flange or a different brand of pump if your nipples do not fit comfortably within the flange.
- Use the lowest suction setting that removes milk.
- Place a warm, wet washcloth on your nipples for a few minutes after pumping sessions to soothe sore nipples.
- Massage breast milk into your nipples and allow them to air-dry after pumping. Apply a small amount of hydrous lanolin onto your nipples after they are dry. Hydrous lanolin is extremely pure lanolin. Lanolin brands that are safe for use with breastfeeding include Lansinoh® or PurLan™.
- Wear breast shells between pumping sessions during the day to keep clothing from rubbing your nipples and irritating them. Do not wear the breast shells while sleeping. The shell may shift during sleep and cause pressure on tender breast tissue.

- Nipple or breast pain that lasts throughout the feeding and does not improve after baby has a better latch or changes position may be due to a yeast infection called thrush. If you have thrush, your nipples may itch or burn, appear pink or red, and may have a rash. If your baby has thrush, creamy white patches may appear inside your baby's mouth or on your baby's tongue. Babies often also get a red, bumpy diaper rash. If you suspect a yeast infection or thrush, contact your doctor and your baby's doctor. This condition requires special medicine to treat both you and your baby.

Engorgement

About 2 or 3 days after the birth of your baby, your breasts will increase in size and feel much fuller and heavier. This is normal engorgement and is caused not only by an increase in the volume of milk in your breasts but also by increased blood flow and tissue swelling. They may feel slightly warm when you touch them and may be slightly reddened. This is the beginning of milk production. The following list includes techniques that will help you manage engorgement so it will end in 2 to 3 days.

- Pump often, at least every 2-1/2 to 3 hours. Pump for at least 2 full minutes after your milk stops flowing.
- Before pumping, apply a cold compress to your breasts for 10 to 15 minutes. This can remove inflammation and allow the milk to flow.
- Massage your breasts and gently roll your nipples between your fingertips before pumping. This will stimulate milk flow.
- Massage both breasts during the pumping session. This will also help the milk flow.
- Be sure not to skip any pumping sessions, even at night.
- **Cold compresses or "icy diapers" applied to your breasts between pumping sessions will be soothing and may help reduce swelling. To make "icy diapers," fill disposable diapers with water and place the diapers in your refrigerator or freezer for 20 to 30 minutes. These cold, wet diapers can be tucked and worn inside your bra until they lose their chill.**
- Pumping often will help relieve your engorgement, not make it worse!

Plugged Ducts and Mastitis

Occasionally, a hard, painful knot may develop inside a breast. This is usually caused by a milk duct that is not draining well or is plugged. The area may be slightly reddened and warm when you touch it. It is important to unblock a plugged duct as soon as you become aware of it. If a plugged duct is not corrected, it can lead to an infection called mastitis.

If you have a plugged duct, try following the strategies listed to help relieve a plugged duct.

Relieving a Plugged Duct

- Apply a clean, warm, wet washcloth to the sore breast or take a warm bath or shower just before pumping.
- Massage your breasts gently, especially over the sore, hardened area, stroking gently toward your nipple.
- Massage your breast during the pumping session, gently stroking down toward your nipple.
- Pump more often during the day and at night until you can no longer feel the knot.
- Position your baby's chin toward the plugged duct if feeding at your breast.
- Begin feeding on the affected breast until resolved.

Symptoms of mastitis include headache, fever, chills, backache, body aches and a flu-like feeling in addition to those symptoms experienced with a plugged duct. If you have the symptoms of mastitis, call your OB doctor. He or she will likely prescribe antibiotics. If you have mastitis, it is important that you rest in bed, drink plenty of fluids, take your prescribed medicine and follow the suggestions listed for relieving a plugged duct. Inform your nurse if you have mastitis and are taking antibiotics for this condition. Continue to pump or nurse frequently.

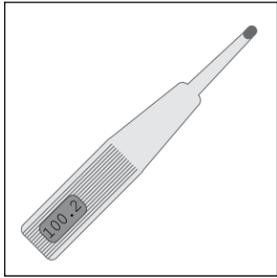
Decrease in Milk Supply

It is normal for your milk supply to rise and fall somewhat day to day. If you notice a significant or persistent decrease in supply, ask yourself the following questions. They will give you an idea of what you can change.

- Are you eating a well-balanced diet with plenty of calories and are you drinking water and other fluids?
- Has your return to work or an increase in outside commitments led to a decrease in the number of times each day that you pump?
- Are you pumping at least 8 to 12 times in a 24-hour period and going no longer than 4 hours at night without pumping?
- Are you getting enough rest? Pamper yourself and schedule rest periods during the day.
- Are you pumping for at least 100 minutes every day? It helps to keep a written log of your pumping sessions. It may be easier to keep a workable schedule if you write it down.
- Do you pump for several minutes after your milk flow has stopped?
- Do you hand-express a small amount of milk just before pumping and use breast massage during your pumping session? This can help your body to release the hormones that stimulate your milk to flow.
- Do you feel relaxed when you pump? A relaxation audio or videotape played before and during pumping sessions can stimulate milk flow.
- Do you think of your baby when you pump? Try looking at a picture of your baby or holding and smelling a piece of your baby's clothes while you pump.
- How long have you been pumping your current number of pumpings each day? Add 2 pumping sessions for the next several days. It takes this long for your breast to respond by making more milk.
- Can you spend longer periods of time holding your baby skin-to-skin (STS) each day? Sessions of STS holding can help your body produce the hormones needed to make milk. Go to the bathroom and have something to eat or drink before sitting down with your baby. This way you can spend more time with your baby.
- What brand of pump are you using? A different brand of pump may empty your breasts more quickly and completely. Remember that emptying your breasts is an important part of stimulating milk production.
- Are you taking birth control pills? Studies show that birth control pills, especially those that contain estrogen, can cause a reduction in milk supply.
- Do you smoke? Research shows that mothers who smoke produce less milk than mothers who do not smoke. If you feel you must continue to smoke, keep the number of cigarettes you smoke to a minimum and do not smoke for at least 1 hour before you pump or while you are pumping.



Engorged Breast
With Nipple Shield



Latch-on Difficulties

For your baby to nurse well while breastfeeding, he must first be able to latch on to the nipple and areola correctly. Then, he must be able to suck, swallow and breathe in the proper sequence. Occasionally, a preterm baby or baby that has been ill may not have a suck that is strong enough to draw his mother's nipple into his mouth. He may also lack the proper sequence of suck/swallow/breathe that is necessary to latch on to the breast and nurse well. The baby may find it especially difficult to latch on correctly if the mother's breasts are full and heavy or if the areola is puffy or the nipple is short and difficult to grasp. If your baby is unable to latch on after several tries, your lactation consultant may suggest that you use breast shells or nipple shields.



Application of a Nipple Shield.



Flat or Inverted Nipples

Flat or inverted nipples are nipples that do not protrude, or stick out, when stimulated or cold. One or both nipples may be affected. Flat or inverted nipples may make it difficult for your baby to latch on to your nipple. Using a pump may gradually help the nipples protrude. Also, wearing breast shells between feeding attempts may also help to draw out the nipple. Breast shells are hard plastic domes with ventilation holes that are worn inside the bra between breastfeedings. The breast shell has a center hole under the shell that fits over your nipple with the surrounding flat surface placing gentle pressure on your areola. The gentle pressure on the areola causes your nipple to protrude into the center hole. When the shell is removed for a feeding, your nipple may keep this shape and may make it easier for your baby to latch on to your breast. If you are having difficulty getting your nipple to protrude or your baby continues to have difficulty latching on, even after you use breast shells between feedings, you should talk with the lactation consultants. You may need to use a nipple shield.

A nipple shield is a soft, silicone shield that is placed over the nipple and areola. It is worn on the breast throughout the feeding. The baby is able to take the longer, firmer "nipple" part of the nipple shield into his mouth and coordinate his sucking, swallowing and breathing to nurse well. If your lactation consultant suggests using a nipple shield during nursing sessions, the instructions on the next page will help make your nursing sessions more successful.

Instructions for Using the Nipple Shield

Before Nursing:

- Pump your breast for 2 to 3 minutes or hand-express milk just before nursing with a nipple shield. This will help the milk flow more freely.

During Nursing:

- Hand-express milk into the "nipple" part of the nipple shield. This will help your baby get started.
- Position your baby correctly and comfortably using either the cross-cradle or "football" hold.
- Stroke your baby's lip with the shield. Wait for your baby to open his mouth wide, like a yawn.
- When your baby's mouth is wide open with his tongue down, move his wide open mouth quickly onto the nipple shield, allowing him to take as much of the nipple shield into his mouth as possible. The nipple shield should be on top of his tongue just as a bottle nipple would be on top of the tongue.
- Your baby should begin sucking within 2 to 3 minutes. If he does not or if he falls asleep, take him off your breast and try again.
- Allow your baby to nurse at his own pace. He will suck several times, take a short rest, and then begin sucking again.
- Listen for your baby to make swallowing sounds during the nursing just like the sounds he makes while feeding from a bottle.
- Allow your baby to nurse as long as your lactation consultant recommends. Your lactation consultant may recommend nursing on either one side or both sides at a feeding. Your baby's condition and skill at nursing will decide this.

After Nursing:

- It is important that you have a very good milk supply when using a nipple shield. Most babies are not able to completely empty the breasts when a nipple shield is used. Over time, this can cause your milk supply to decrease. Pumping both breasts after most feedings where a nipple shield is used will help you maintain your milk supply. Remember, it is necessary to completely empty your breasts in order for you to continue to produce milk and to prevent plugged ducts and mastitis.
- Wash the shield in hot, soapy water after each use. Boil the shield with your breast pump parts once a day.
- Monitor your baby's weight and the number of wet and dirty diapers closely while using a nipple shield.

Nursing with a nipple shield is usually only temporary. Most babies will eventually learn to latch on and nurse well without a nipple shield. How soon this happens will differ with each individual baby. Your baby will be closely monitored while still in the hospital, especially if you are using a nipple shield. This will help determine whether your baby is getting enough milk from nursing sessions and ensure that your baby is gaining enough weight.

If you are still using a nipple shield for breastfeeding when your baby is discharged from the hospital, it is important that you be familiar with and continue to follow special guidelines your lactation consultant has reviewed with you.



Latch with the use of a Nipple Shield.





Guidelines for Nursing Your Baby When Using a Nipple Shield at Home

You must closely monitor how well your baby nurses as long as you are using a nipple shield. Some ways to tell whether your baby is getting enough milk include:

- Watch how well and how long your baby sucks and swallows. A baby who is nursing well will suck deeply and rhythmically, using his whole jaw from the ear forward when he sucks. He will suck 6 to 10 times or more, take a short pause, and then suck again 6 to 10 times or more and then take a short pause. This pattern will be repeated over and over again for at least 10 minutes and hopefully longer.
- Listen for your baby to swallow after every suck or every other suck. Swallowing makes a soft “kaa, kaa” sound in the back of the baby’s throat.
- Observe if your baby nurses adequately before falling asleep. For some babies this is 10 minutes on each breast before he falls asleep, for others it may be longer on the first breast and shorter on the second breast. If you need help to determine an adequate nursing time at the breast, talk with the lactation consultants.
- Notice if your breasts feel full before the feeding and softer after the feeding.
- Monitor your baby’s diapers closely. A baby who is nursing well will have 6 or more soaking wet diapers and a small yellow bowel movement with every feeding, or every other feeding, every day. If your baby is not wetting enough diapers or having frequent bowel movements, you will need to contact your baby’s doctor.
- Pump your breasts after feedings to keep your milk supply steady. Remember your milk supply can decrease when you use a nipple shield.
- Continue to take your baby to the doctor to monitor your baby’s weight after he leaves the hospital. Incorrect use of a nipple shield can cause your baby to not gain weight and also significantly decrease your milk production. In extreme cases, babies can become dehydrated, fail to grow or die.
- Set a goal to be able to eventually nurse your baby on the breast without using a nipple shield. Your lactation consultant will discuss this with you.
- The shields are available to purchase in the Mom & Baby Boutique as well as other Medela® retailers after discharge.



Community and Internet Resources

- La Leche League International
1-800-LALECHE or www.lalecheleague.org
- Family Road of Greater Baton Rouge
225-201-8888 or www.familyroadgbr.org
- Louisiana WIC (Women, Infants & Children) State Agency,
Louisiana Office of Public Health. 225-342-7893 or
www.wic.dhh.louisiana.gov
- Louisiana Zipmilk: www.zipmilk.org

Glossary

Alveoli: tiny glands in the breast that produce milk.

Areola: the dark, circular area surrounding the nipple.

Blue ice: reusable cold pack that can be frozen and thawed many times.

Breast massage: using your hands, massage or knead the breasts using a circular or rolling motion beginning at the chest wall or armpit and moving towards the nipple.

Breast milk: milk that comes from your breast either by expressing it by hand, pumping it out with a machine or by nursing your baby directly from your breast.

Breast pads: cloth or disposable paper pads worn inside the bra to protect clothing from leaking milk.

Breast shell: a wide flange made of hard, lightweight plastic that attaches to the collection cup and is worn inside the bra between breastfeedings. Sometimes recommended for women with sore, flat or inverted nipples.

Breastfeeding: feeding a baby with breast milk that is either (1) pumped out with a machine called a breast pump and fed through a bottle or tube or (2) by nursing your baby directly from your breast.

Breastfeeding plan: a discharge plan recommending the number of and frequency of breastfeedings per day, amount and schedule of any additional supplements, and recommended supplemental pumping sessions.

Collection kit: the kit that is used with a breast pump to help collect milk from your breasts. It includes tubing, breast flanges or shields, and collection bottles, and is available as a single-collection or double-collection kit.

Colostrum: the first milk: a yellow, sticky fluid secreted in the first few days after delivery. It contains more protein and less sugar and fat than mature milk and has important immunity properties.

Cracked nipple: an injured nipple, which has a crack, or “fissure.”

Cross-cradle hold: positioning for breastfeeding with the baby in a horizontal or semi-upright position across your chest. The baby’s mouth will be at the level of the nipple with the whole body facing the breast. The baby’s head will be supported by the hand opposite the breast being latched onto, the breast will be supported by the hand on the side being latched onto.

Demand feeding: feeding a baby whenever he is hungry, rather than making the baby wait for a set time.

Empty Breastfeeds: early breastfeeding sessions immediately after a pumping session. Also called non-nutritive feedings.

Engorgement: excess fullness of the breast caused by the “coming in” of the milk or when the breasts are not emptied frequently and completely.

Expression (of milk): pumping or hand-expressing milk from your breasts.

Flange: part of a collection kit which is placed over the breast to express breast milk.

Flat nipple: a nipple which is flat with the contour of the breast and protrudes, or sticks out, only slightly when it is stimulated.

Football hold: positioning your baby for breastfeeding with his head supported by your hand and his body at your side, tucked under your arm. Your baby’s face will be looking directly up at you in this position, essentially laying on his back on a pillow.

Foremilk: the milk that is released during the first minutes of pumping or nursing. It has less fat and fewer calories than the hindmilk.

Fortify: to add nutrients and calories to breast milk.

Gavage tube: a small feeding tube inserted into the mouth or nose and advanced down the esophagus to the stomach.

Hindmilk: the milk that is released after the first few minutes of pumping or nursing. Hindmilk has more calories and fat than foremilk.

Human milk fortifier (HMF): a milk powder that is added directly to breast milk that contains several nutrients, especially certain minerals, that are needed for proper bone development in low birth-weight babies. It also increases the overall calories of the milk.



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