



Fragile Feeder Guide and Diary for Mothers



Montefiore Einstein



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Your Baby Needs Your Milk

At Children's Hospital at Montefiore, we believe that a mother's milk is the best nutrition for ill or premature infants. We ask every mother to pump milk for their babies for at least the time that they are in the Neonatal Intensive Care Unit (NICU). All babies need their mother's milk, but preemies and infants who are ill may benefit even more from it. Preemies that are fed their mother's milk during their NICU stay tend to have:

- Fewer life-threatening infections and feeding problems and a shorter hospital stay
- Lower risk of developing necrotizing enterocolitis (NEC)
- Better brain development and higher IQs when they are older
- Lower risk of having to return to the hospital after they go home

Mother's milk has more than 600 biological factors that contribute to better health in babies. It contains brain-boosting and nutritious fats, sugar and protein to jump-start growth, and hormones that help the baby's intestines move and digest. Mother's milk also has antibodies and live cells that help prevent and fight against infections — no artificial formula can compare!

Making Milk for Your Baby

A full-term baby feeds at the breast eight to 12 times per day during the first few days following birth, which stimulates milk production. Sick or premature babies are usually unable to do this, so mothers of these babies need to use a pump — at least initially — until their babies are ready to breastfeed. It's important to start pumping within six hours of delivery because mothers who pump soon after delivery make twice as much milk as those who wait.



When you first pump, you may see drops of milk or no milk at all. This is normal. Try to be patient, continue pumping and log your milk volume in the NICU Pumping Log in this booklet — you will be surprised how quickly it increases. Be sure to fill out your logbook every day and bring it with you when you visit your baby. Please talk to the lactation consultant if you have questions or concerns. This early milk, called colostrum, is especially important because it contains concentrated antibodies to provide protection from infection—every milliliter of this early milk is a benefit to your baby.

It is very important to have an established milk supply early so that there is always enough milk for your baby. A good goal is to make 500 mL or more of milk each day by the end of the second week. This amount is what your baby will need by the time he or she is ready to go home.



Studies have shown that feeding premature infants mother's milk instead of formula can decrease the chance of babies developing a disease called necrotizing enterocolitis (NEC).

It is a serious intestinal infection that can make babies very ill and unable to feed for weeks at a time. These periods of illness and poor nutrition can lead to long-term problems with growth and development.

How do I pump?

We recommend pumping with a hospital-grade pump after holding your baby. You can pump at the bedside with a privacy screen, with a pumping cover or in the designated pumping room. To pump, follow these steps:

1. Wash your hands (no need to wash your breasts; a daily shower is adequate).
2. Get comfortable.
3. Take a minute to massage your breasts in a circular motion.
4. Center the breast flanges on your nipples.
5. Hold the flanges gently, so you're not pushing them into your breasts.
6. Start the pump at a low suction and increase it slowly as you figure out what is most comfortable for you.
7. Pump both breasts at the same time for about 15 to 20 minutes.
8. Pump until your breasts are softer (this may take longer than 20 minutes).
9. Pay special attention to your flow of milk. When it slows down and your breasts feel softer, you're done.



Fragile Feeders TIPS: Getting Started

- Start pumping within six hours of delivery.
- Pump for 15 to 20 minutes eight or more times a day, including once at night.
- Try to pump after holding your baby.
- These first days after birth and when you go home are **CRITICAL** for good milk production.

What can I do if pumping feels uncomfortable?

If pumping hurts or your nipple doesn't move easily inside the plastic flange, ask for help. You may need a different size flange, or you may be able to reduce the friction by lubricating the flange with a little milk, lanolin, coconut oil or olive oil. Hands-free pumping may make pumping easier. You can buy a special pumping bra or make one out of an old bra by cutting holes for the flanges.



Is it normal for my breasts to feel swollen and lumpy?

When your milk first comes in, your breasts may be full, heavy and large from a combination of swelling and milk production, and you may feel lumps in your breasts caused by the filling of milk glands. This is normal. To help soften the lumps, you can gently massage your breasts prior to pumping and/or during pumping. To help decrease swelling, you can take ibuprofen and use cool compresses. If you are full, it is very important to empty your breasts. This is the key to good milk production.

How often should I pump?

You should pump eight or more times in 24 hours, including once at night. It is important to pump once between 1:00 a.m. and 5:00 a.m., when your hormone levels are the highest. In the first few days following delivery, if your breasts feel very full, you might pump more often to empty your breasts. Full breasts signal the brain to stop producing milk, so emptying your breasts will help with your milk production. The number of times you pump is more important than the length of time you spend doing it. Pumping milk is a lot of work, but your effort will pay off later when you have a good milk supply.





Pumping at Home

If you are eligible, Montefiore Westchester Square WIC (718-829-4401) can help you get a hospital-grade pump. Once you are home:

- **Stay on the pumping regimen that you established** in the hospital.
- **Continue to log your milk volume** in your logbook.
- **Continue taking your prenatal vitamins, and consider taking a DHA supplement** to help further support your baby's brain and visual development.
- **Check in with the NICU lactation consultant within a few days after your discharge**, sooner if you have questions or concerns. The consultant will check on your milk volume, how your pumping is going and your baby's progress with feedings.

To stay motivated, keep a picture of your baby with you while you pump and think about how good your milk is for your baby.

How can I make sure my milk production stays high?

To keep your milk production high, continue to pump until your baby can empty your breast. If your milk volume is a little low, pumping more frequently (every three hours) will help increase your supply. Please ask for help if you have any questions (also see page 14).



How can my partner or spouse help?

Your partner or spouse can help by reminding you when it is time to pump — eight times or more in 24 hours. He or she can also set up the pump for you and prepare the syringes or bottles with labels. Cleaning the pump parts is also a big help. You are the only person who can pump, so anything others can do to make pumping easier is helpful. Remind your partner to do skin-to-skin with the baby, too!



Fragile Feeders TIPS: Cleaning Pumping Equipment

- After each pumping session, clean all pump parts that have been in contact with milk. You can use hot water and soap or the dishwasher.
- Allow the parts to air dry on a clean paper towel.
- Dry any condensation in the pump tubing by pumping air through it while you clean your kit.
- Sterilize your pump kit once a day. While in the hospital, you will receive a micro-steam bag to use to clean your kit.
- Sterilize the pump tubing once a week.



How do I store my milk at home?

Your milk can stay at room temperature for four hours. You can store your milk in the refrigerator for four days. If you plan to store it longer, it can keep in your home freezer for four months or in a deep freezer for one year.

If I get sick, should I stop pumping?

No. When you are sick, your body produces antibodies, which are passed through your milk to protect your baby.

When should I stop pumping?

Please talk to a lactation consultant if you are ever told by anyone to stop pumping. Continue to pump and freeze your milk until you speak with the consultant. You may label your milk with any concerns you have. You are the only one who can make milk specifically for your baby. It is critical that you store as much of your milk as possible. You will be amazed how



quickly your baby uses your stored milk. *Please do not throw away or donate any milk without talking to the lactation staff first.*



NICU Milk Storage

The way milk is stored can be important to ease your workload and to minimize wasted milk. Pump right into the storage bottles — they fit onto the pump — so calories and fat that cling to the plastic are not lost. Fresh (not frozen) milk is best for baby because it contains live cells and milk fat in its most nutritious form.

Pump into the milk storage containers provided in the NICU. Ask for more when you need them.

- Label each bottle with your sticker and the date and time.
- Try to fill each bottle with the same amount of milk.
- You can combine milk from both breasts to fill the bottle.
- You can pour milk from one bottle into another.
- You can add warm milk to cold milk from different pumping sessions.
- Keep your hospital bin full so your baby never runs out of milk.
- Once you make 500 mL of milk, ask us about 24-hour pooling of milk.



Fragile Feeders TIPS: Storing Your First Bottles of Milk

Use the little colostrum containers that come with your pump kit to collect your early colostrum. For the first days, draw your milk into syringes. Once each breast makes more than 10 mL of milk, switch to pumping into the milk storage bottles. Put a yellow sticker on this early milk. We will feed this to your baby first. Bring it in as cold as possible in a cooler with ice or a cold pack.

For babies weighing more than three pounds at birth:

- Try to have each bottle contain 80 mL of milk.
- Ask your baby's nurse if you should bring in fresh or frozen milk. If you need to freeze the milk, do not fill the bottle more than 80 mL, since milk expands when frozen.

For babies weighing less than three pounds at birth:

First two weeks:

- Place a yellow sticker on the cap.
- Try to have each bottle contain about 30 mL (1 ounce) of milk.
- Before you switch to using the big bottle, ask the nurse if more of these smaller amounts are needed for your baby.



After the first two weeks:

- Pump into the big (250 mL) bottle.
- Try to have each bottle contain 200 mL of milk.
- Ask your baby's nurse if you should bring in fresh or frozen milk. If you need to freeze the milk, do not fill the bottle more than 250 mL, since milk expands when frozen. Your baby's nurse will explain how to separate milk into smaller containers.



Holding Your Baby Skin-to-Skin

Having direct skin-to-skin time with your baby provides benefits to both you and your baby in the following ways:

- Stabilizes your baby's heart rate and breathing and helps maintain body temperature
- Improves your baby's weight gain
- Calms, comforts and promotes restful sleep for your baby
- Helps your baby acquire healthy bacteria from your skin
- Improves your milk production
- Promotes attachment and bonding
- Promotes better breastfeeding later



Fragile Feeders TIPS: Skin-to-Skin Care

- Wear a loose-fitting, button-down or zip shirt.
- Encourage your partner to do skin-to-skin also.
- Try to hold your baby skin-to-skin every visit.

How often should I hold my baby skin-to-skin?

We recommend that you hold your baby skin-to-skin every day throughout your baby's NICU stay for at least an hour at a time. Your baby will soon learn it is pleasurable and will relax, settle down and grow. Plan your skin-to-skin time around your pumping schedule. When your baby is little or ill, skin-to-skin time may require some help. Every day is a new day for your baby, so when you call in the morning, remind your baby's nurse that you want to do skin-to-skin. We believe that babies who have skin-to-skin time will be calmer, happier babies. They also learn to breastfeed more quickly.



If your baby is too small or fragile to be picked up, ask your baby's nurse about "resting hands," also called containment. This is when you lightly rest your hands directly on your baby. Because small preemies may be sensitive to too much stimulation, you should avoid stroking or moving your hands for the time being. Premature infants will relax better with just a gentle, steady touch.

What if my baby has a breathing tube or is on nasal CPAP?

Skin-to-skin can be done if your baby has a breathing tube or is on nasal CPAP. Your baby must be stable enough to tolerate being moved to your chest, so ask your nurse when your baby will be ready. Moving your baby can be a little tricky if there are a lot of wires or tubes, so a nurse and respiratory therapist will help you. As your baby matures and you gain confidence, you will learn to do this on your own.



Helping Your Baby Learn to Breastfeed

How do I know when it's time to try putting baby to breast?

You may notice your baby showing interest in feeding by “feeding readiness cues,” such as:

- Rocking her head back and forth
- Sucking or sticking out his tongue
- Smacking or licking her lips
- Putting his hands to his mouth

Feeding readiness cues may signal that your baby is ready to start learning how to breastfeed. Before learning how to breastfeed, your baby must:

- Have the strength and coordination to latch on to the breast
- Be able to coordinate his or her breathing with sucking and swallowing, which can be a lot of work for your baby
- Tolerate being held in a side-lying position

CORRECTED GESTATIONAL AGE	Developmental stages of feeding abilities in the very low birth weight infant
26–28 weeks	Immature sucking of milk in mouth
28–30 weeks	Sticking out tongue May lap milk, lick the nipple or take a few sucks Cannot yet coordinate suck-swallow-breathe
30–32 weeks	May latch and suck Short bursts of sucking with long pauses Not able to drink milk reliably
32–36 weeks	Rooting to breast Longer sucking bursts Starting to drink a little better
36–40 weeks	Rooting to breast Sustained sucking and good suction on breast Learning to transfer milk

Non-nutritive Breastfeeding

Early breastfeeding — where the baby starts to latch and suck but does not drink any milk — is called “non-nutritive breastfeeding.” As your baby gets closer to you, she will begin to smell your milk and may move toward your breast. Position your baby in a “cross-cradle” side-lying position and allow her to explore the breast. If she opens her mouth, bring her to your breast and allow her to suck. We will have you pump first to empty your breasts so your baby can start learning without getting overwhelmed by milk.

If your baby seems ready to start learning to breastfeed or you need guidance, ask a nurse to make an appointment with a lactation consultant to visit you during a feeding.

Nutritive Breastfeeding

When babies are learning to breastfeed, it can be difficult to tell the difference between when they are tired and when they are full. While feeding, look for signs that your baby is drinking or “transferring” milk. As your baby becomes stronger, it will be easier to tell if he is tired or full. Don't worry too much about how much milk your baby drinks. Transferring milk from the breast is more complicated than sucking, and it will improve in time. Right now, it's important to practice and help your baby have a positive experience at the breast.

What are signs that my baby is transferring milk?

- You have a good, comfortable latch.
- You can see and hear your baby swallowing while feeding.
- You can see your baby's jaw moving.
- Milk is visible in your baby's mouth or in the nipple shield.
- Your baby refuses a bottle after breastfeeding.
- Your baby is calm and relaxed after the feeding.
- Your baby sleeps for an hour or more after the feeding.
- Your breasts feel softer after the feeding.
- You pump less milk than usual after the feeding.
- Your baby's weight is higher after the feeding. Weighing your baby before and after a feeding and then subtracting the difference between those weights gives you an idea of how many grams of milk your baby drank.



Improving premature infant nutrition is one of the main goals of the Fragile Feeders Program.

Helping mothers to start pumping and make enough milk for their babies is a great start, but we also aim to help mothers learn to breastfeed their babies. The benefits to baby continue

after NICU discharge, decreasing the rates of infection, crib death, allergy and hospitalization.

How can a nipple shield help my baby transfer milk?

- Nipple shields encourage a wider open-mouth position and help keep the nipple in your baby's mouth, even without much suction.
- They help maintain suction, which helps draw milk out of the breast.
- Nipple shields prevent babies from pushing the nipple out of their mouths with their tongues.
- They help babies attach to a flat or inverted nipple, and help frantic babies realize the nipple is in their mouth.



How many times a day should I breastfeed my baby?

For most premature babies, once or twice a day is best when they are learning. Bigger or full-term babies in the NICU may be able to nurse more.

- Limit the feeding time to 20 minutes if your baby does not seem interested in breastfeeding and then finish the feeding by bottle or nasogastric (NG) tube.
- If your baby is feeding well at the breast and not tiring, you can gradually increase the feeding time.

As you continue to practice each day, you will see that your baby will start to help you by getting into position more easily. There will be days when your baby is interested in breastfeeding, and days when your baby is not. This will improve in time.

Can I breastfeed my baby when I visit the hospital?

Call every morning before you come to the hospital and let us know that you plan to breastfeed when you come in. This way, you can coordinate your visit with your baby's feeding time. The more often you can visit and care for your baby before she goes home, the easier the transition to breastfeeding will be. Most preemies are breastfeeding a few times a day by the time they are ready to go home, but each baby is different.

Should I keep pumping once my baby is breastfeeding?

When your baby is learning to breastfeed, she will probably not be able to empty the breast right away. Until she can, continue to pump after feeding in order to maintain your milk supply. Your baby will find breastfeeding easier if you have a good milk supply and the milk comes easily. After you go home, you will be able to gradually taper off your pumping, typically over four to six weeks. Your pediatrician can help guide you.



Your Milk Supply

How can I increase my milk supply?

If your milk supply is not as high as you would like it to be, here are things you can try to help increase it:

- Make sure you are getting enough to eat. Your body needs an additional 500 to 600 calories per day to produce milk.
- Drink plenty of fluids—six to eight glasses per day is ideal. Drinking water is fine; you do not need to drink milk in order to make milk.
- Massage (gently) or compress your breasts during pumping to help your milk flow.
- Visit newborns.stanford.edu/Breastfeeding/HandExpression.html to learn more about hand massage to improve pumping.
- Pump 8 or more in 24! At the beginning, you should try to wake once overnight to pump.
- Consider increasing your pumping time by five minutes.
- Press the “drops” button to cycle back to the faster stimulation phase one or two times during pumping.
- Try relaxation or meditation exercises when you pump.
- Check to make sure your pump is working well and that the flanges fit you comfortably.
- Speak with a lactation consultant for other recommendations.



Fragile Feeders TIPS: Using the NICU Pumping Log

1. Pump eight or more times a day, including once between 1:00 a.m. and 5:00 a.m.
2. Write down your milk volume every time you pump. For mothers who prefer a smartphone app, we recommend Peekaboo ICU Premie (English only) or Milk Stash (English and Spanish).
3. Add up your 24-hour total milk volume every day. Tell your baby's nurse when you call for your nighttime or early morning update.
4. Keep close track of your milk production — it helps you protect your milk supply!
5. Make notes if you have questions or concerns.

What if I'm making a lot of milk?

If you are making more than 1,000 mL of milk, talk to a lactation consultant about simplifying your pumping regimen. Mothers of twins or triplets will, of course, need more milk, and the lactation staff can give guidelines as to how much they should try to produce.

NICU Pumping Log: Week 1

	SUN	MON	TUES	WED	THUR	FRI	SAT
12 a.m.							
1 a.m.							
2 a.m.							
3 a.m.							
4 a.m.							
5 a.m.							
6 a.m.							
7 a.m.							
8 a.m.							
9 a.m.							
10 a.m.							
11 a.m.							
12 p.m.							
1 p.m.							
2 p.m.							
3 p.m.							
4 p.m.							
5 p.m.							
6 p.m.							
7 p.m.							
8 p.m.							
9 p.m.							
10 p.m.							
11 p.m.							
TOTAL							

NICU Pumping Log: Week 2

	SUN	MON	TUES	WED	THUR	FRI	SAT
12 a.m.							
1 a.m.							
2 a.m.							
3 a.m.							
4 a.m.							
5 a.m.							
6 a.m.							
7 a.m.							
8 a.m.							
9 a.m.							
10 a.m.							
11 a.m.							
12 p.m.							
1 p.m.							
2 p.m.							
3 p.m.							
4 p.m.							
5 p.m.							
6 p.m.							
7 p.m.							
8 p.m.							
9 p.m.							
10 p.m.							
11 p.m.							
TOTAL							

NICU Pumping Log: Week 3

	SUN	MON	TUES	WED	THUR	FRI	SAT
12 a.m.							
1 a.m.							
2 a.m.							
3 a.m.							
4 a.m.							
5 a.m.							
6 a.m.							
7 a.m.							
8 a.m.							
9 a.m.							
10 a.m.							
11 a.m.							
12 p.m.							
1 p.m.							
2 p.m.							
3 p.m.							
4 p.m.							
5 p.m.							
6 p.m.							
7 p.m.							
8 p.m.							
9 p.m.							
10 p.m.							
11 p.m.							
TOTAL							

NICU Pumping Log: Week 4

	SUN	MON	TUES	WED	THUR	FRI	SAT
12 a.m.							
1 a.m.							
2 a.m.							
3 a.m.							
4 a.m.							
5 a.m.							
6 a.m.							
7 a.m.							
8 a.m.							
9 a.m.							
10 a.m.							
11 a.m.							
12 p.m.							
1 p.m.							
2 p.m.							
3 p.m.							
4 p.m.							
5 p.m.							
6 p.m.							
7 p.m.							
8 p.m.							
9 p.m.							
10 p.m.							
11 p.m.							
TOTAL							

NICU Pumping Log: Week 5

	SUN	MON	TUES	WED	THUR	FRI	SAT
12 a.m.							
1 a.m.							
2 a.m.							
3 a.m.							
4 a.m.							
5 a.m.							
6 a.m.							
7 a.m.							
8 a.m.							
9 a.m.							
10 a.m.							
11 a.m.							
12 p.m.							
1 p.m.							
2 p.m.							
3 p.m.							
4 p.m.							
5 p.m.							
6 p.m.							
7 p.m.							
8 p.m.							
9 p.m.							
10 p.m.							
11 p.m.							
TOTAL							

NICU Pumping Log: Week 6

	SUN	MON	TUES	WED	THUR	FRI	SAT
12 a.m.							
1 a.m.							
2 a.m.							
3 a.m.							
4 a.m.							
5 a.m.							
6 a.m.							
7 a.m.							
8 a.m.							
9 a.m.							
10 a.m.							
11 a.m.							
12 p.m.							
1 p.m.							
2 p.m.							
3 p.m.							
4 p.m.							
5 p.m.							
6 p.m.							
7 p.m.							
8 p.m.							
9 p.m.							
10 p.m.							
11 p.m.							
TOTAL							

NICU Pumping Log: Week 7

	SUN	MON	TUES	WED	THUR	FRI	SAT
12 a.m.							
1 a.m.							
2 a.m.							
3 a.m.							
4 a.m.							
5 a.m.							
6 a.m.							
7 a.m.							
8 a.m.							
9 a.m.							
10 a.m.							
11 a.m.							
12 p.m.							
1 p.m.							
2 p.m.							
3 p.m.							
4 p.m.							
5 p.m.							
6 p.m.							
7 p.m.							
8 p.m.							
9 p.m.							
10 p.m.							
11 p.m.							
TOTAL							



Taking Your Baby Home

Every baby who goes home breastfeeding will have an individualized nutrition and feeding plan. Most premature babies — and many full-term babies — who have been sick are not able to fully breastfeed by the time they are ready to go home, but they will learn with you at home. Your plan will help guide you on how and when to advance breastfeeding. Your plan will depend on several factors, including:

- Your baby's adjusted age and growth pattern
- Your baby's energy level and ability to breastfeed
- Your breastfeeding goal and comfort level
- Your milk volume

What if I have questions after discharge?

If you have any medical concerns about your health, call your obstetrician. For your baby's health, talk to your pediatrician.



Breastfeeding Resources

If you have questions about breastfeeding:

- Review patient resources at health.ucsd.edu/pregnancy.
- If your pediatrician is at Montefiore, ask to be referred to Dr. Kelter's breastfeeding clinic.
- Make a private appointment with a lactation consultant (there is usually a fee for services).
- Talk to other mothers who have had a premature baby — it is helpful to hear what has worked for others.

Breastfeeding Support Group:

Our free weekly support group is facilitated by lactation specialists. Babies are welcome. For dates and times, call 718-904-4032.



Montefiore Einstein



Scan code to visit our
Breastfeeding Support page

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