
Feeding and Nutrition for Your Baby

How will my preemie baby get nutrition when s/he is so small?

- If your baby is sick or very tiny, your baby will receive nourishment by vein (I.V.). At first your baby will receive mainly sugar water for calories. However if it appears that your baby will not tolerate feedings (tube feeding into the stomach) within a few days, s/he may be started on total parenteral nutrition (TPN). With TPN, protein, fat, sugar, vitamins and minerals are added to the fluids that the baby receives by vein (I.V.). Your baby can receive complete nutrition and grow on TPN alone. As your baby tolerates other feedings, the TPN will be decreased.
- Your baby may be started on tube feedings. A tube is passed through the mouth or the nose into your baby's stomach. Milk is put through the tube. This may be as a constant slow drip, called continuous infusion or drip feeds, or as prescribed amounts given every few hours, called gavage feeding. Either way, the amounts will be very small at first and gradually increase. There is often a transition period between TPN and tube feedings where the amount of nutrition from TPN slowly decreases as the amount from tube feeding increases.
- Occasionally drip feedings are given into the intestine instead of the stomach. In this case the end of the tube is passed beyond the stomach into the intestine.

When will my baby gain weight?

Almost all babies lose weight before they begin to gain weight. This weight loss typically is 5-15% of the baby's birth weight. Much of the weight loss is loss of water because the baby is no longer surrounded by fluid. Sometimes very sick babies gain weight the first few days. This is not real weight gain; it is retention of water. As the baby's condition improves, the baby will lose weight. Usually a baby does not regain his/her birth weight until two or more weeks of age.

When can my baby breastfeed?

When babies are born prematurely their sucking is not well coordinated with their breathing. This suck-swallow-breathe pattern usually becomes coordinated enough to safely breast or bottle feed at about 34 weeks of gestation. However, there are big differences among babies. Some are ready at 32 weeks; others are not ready at 36 weeks. Nurses can often tell when a baby is getting close to this time by how a baby acts during a tube feeding. Your baby's doctors and nurses and lactation consultants will determine when to start.

At first your baby will have only one or two feeds a day of practice breastfeeding or non-nutritive sucking. This will gradually increase as the baby gets used to the extra work of feeding. Because nipple and breast feeding requires more work, babies who have had severe respiratory problems may be slower to start and slower to advance on feedings.

Before your baby is ready to feed by breast or bottle, s/he may enjoy sucking. A pacifier may be used to encourage sucking. When the baby is being tube fed, s/he may like to suck on a pacifier dipped in breastmilk, or the breast that is empty of milk (after pumping). This is called non-nutritive sucking. Sucking on the empty breast or nuzzling the breast during tube feeding can be combined with kangaroo care (section "My Baby", page 19). This helps the mother with milk production and readies the baby for future breastfeeding. In addition, babies stay warm while held. Regular visiting and handling of the baby is beneficial for milk supply and feeding success.

Your Baby's Parenteral Nutrition

What Is parenteral nutrition?

Parenteral Nutrition (also called TPN or total parenteral nutrition) is a method of feeding your baby through his/her veins. TPN is given through a plastic tube called an IV (intravenous) line or catheter. A pump controls the amount your baby gets. When the catheter is placed in a small vein in the hand, foot or scalp, it is called a peripheral line. When it is placed in a larger blood vessel, it is called a central line.

Why does my baby need TPN?

TPN is used when an infant is not able to eat. It is also used when your baby cannot get enough nutrition through breast milk and/or formula alone. TPN will provide your baby with calories, protein, vitamins, and minerals that are needed for growth.

What does TPN look like?

The bag of yellow or clear fluid hanging by your baby's bed contains sugar (dextrose), protein (amino acids), vitamins (which give the fluid its yellow colour), and minerals. There may also be a bottle or syringe of milky white fluid called a lipid emulsion. This provides fat for calories and additional nutrients your baby needs to grow.

What can I expect while my baby is getting TPN?

His/her doctor will closely follow your baby. Other health professionals, such as dietitians, nurses, and pharmacists will also be working with the doctors. His/her progress and growth will be monitored while on TPN. The nurse, dietitian, or doctor caring for your child will explain what needs to be done. This usually includes measuring growth and checking blood and urine tests.

How long will my baby need TPN?

As your baby takes more calories from breast milk and/or formula fewer calories will be needed from TPN. Your baby's TPN will be stopped once your baby can take enough calories from breast milk and/or formula. Your baby's progress and growth will still be checked to be sure s/he is getting enough nutrition

Is TPN the same for every child?

No. Parenteral nutrition therapy may vary according to your baby's needs. Each baby's bag of TPN is made especially for him/her. Infants receive TPN continuously over the whole day. The way TPN is given may change during your baby's hospital stay. Your doctor, dietician, or nurse will discuss with you what is best for your child.

Your Baby's Tube Feeding

What is a "Tube Feeding"? ¹

A tube feeding is a way to feed your baby until he can take all feedings by mouth. The tube may start in the mouth (OG tube) or nose (NG tube). It is placed into the stomach.

Will this hurt my baby? ¹

No. The placement of an OG or NG tube maybe uncomfortable but painless.

Why is a tube feeding used? ¹

Tube feedings may be used for several reasons. Some babies are born prematurely and are unable to co-ordinate sucking and swallowing. Other babies are too sick to take their feedings by bottle or breast. Babies who are breathing too fast or who are on breathing machines (ventilators) may also need a tube feeding.

What is given in the tube? ¹

Mother's milk or infant formula is given through the tube. Sometimes the tube is used to give medicine.

How is the feeding given? ¹

There are two ways to give the feeding. One way is to give a measured amount of milk every few hours. This is called "bolus" feeding. The other way requires the use of a pump to give the feeding throughout the day and night. This is called "continuous" feeding. Your baby's nurse will check to be sure the tube is in the right place before feeding.

Can my baby suck on a pacifier while being tube fed? ¹

When your baby is ready, your baby will be offered a pacifier to take during tube feedings. This is called "non-nutritive sucking". It will help your baby practice sucking for when s/he is ready to breast feed or bottle feed. Non-nutritive sucking also helps your baby to grow. Your baby can also suck on a pacifier to help settle if fussy,

What can I do while my baby is being tube fed? ¹

You may hold your baby's bolus feedings and when your baby is stable, you may be able to hold your baby during tube feedings. Help your baby to suck on his/her hands/fist during the feeding. If your baby is still unable to be held, your baby will still enjoy your voice and touch during feedings.

Why is your baby's ability to put his/her hands to their mouth so important for feeding? ²

The mouth is very important to an infant because by tasting milk and putting fingers/pacifier in the mouth, healthy full-term babies learn how to breast or bottle-feed.

Your baby's ability to get his/her thumb or hand to mouth to suck is an important developmental milestone. Even in utero, babies practise getting their hands to their faces/mouth. Your baby has been busy sucking from as early as the fifteenth week of gestation. Some babies are even born with calluses on their thumbs from frequent sucking!

Your premature baby already knows how to suck, but gravity now pulls your baby's tiny arms backwards, away from his/her face, making it difficult to get hands to face to suck. You will probably need to help your baby by bringing his/her hands up towards their mouth to suck.

Why is sucking so important for my baby? ²

Sucking helps the development of your baby's oral-motor structures-- the palate, the muscles of his/her cheeks, lips, tongue, etc. Sucking is also extremely important for your baby's speech development.

Importantly, your baby's ability to suck influences his/her ability to soothe or organize him/herself. Sucking on a pacifier will help settle your baby, but it does require a caregiver to intervene. Infants need to be able to soothe themselves independently. It might be better for your baby to be able to soothe him/herself (by sucking thumb/fist) rather than to wait for someone to come to the rescue.

Why is the feeding process different for my baby? ²

With many of the infants in the NICU/Level 2 nurseries, the normal process for feeding can be changed. This can be due to some of the necessary medical and nursing procedures, such as use of a ventilator tube, feeding tube and procedures around the mouth such as suctioning.

Why could this be a problem for my baby? ²

When feeding by mouth is delayed due to prematurity or illness, the amount of positive feeling to the mouth is often decreased. When this occurs over a long period of time, hypersensitivity around the mouth may develop. Hypersensitivity means that the taste and putting fingers/pacifiers in the mouth can be unpleasant. As a result, an infant may avoid using the mouth for the exploration and learning which is important for feeding and development.

What can I do to help my baby learn how to feed? ²

During tube feeding, it is important to stimulate your infant using the suggestions listed below, to reinforce the connection between sucking and the feeling of having a full stomach.

It is recommended that you try to do these simple activities as part of your baby's daily care, as this will help your baby with feeding.

- Put your baby's hands up by the mouth or by give your baby a pacifier to suck.
- Dip the pacifier in the milk so that your baby learns about sucking & taste.

Sucking on baby's own fingers or parents' fingers and sucking on pacifier



For the next 12 months or so, your baby will be bringing everything to his/her mouth for inspection. Don't worry; this too is part of normal development. Because your baby's mouth has so many sense receptors, his/her mouth is the centre for learning about objects.

What is non- nutritive sucking?²

You may hear people talk about "non-nutritive sucking". Non-nutritive sucking means giving your baby the opportunity to suck, as on a pacifier, while s/he is unable to actually receive food by mouth.

What are some of the benefits of non-nutritive sucking?²

- improved oxygenation
- more rapid weight gain
- more time in quiet sleep (sleep is important for weight gain and brain development)
- earlier progress to taking all feeds by mouth
- earlier discharge
- decreased energy expenditure
- improved digestion

Should I plan to breast or bottle-feed my baby?¹

The decision to breastfeed or bottle-feed your baby is entirely up to you. However, there are many advantages to mother's breast milk over formula. These advantages include:

- Fewer infections
- Less risk for necrotizing enterocolitis (NEC)
- Better tolerance of feeds
- Less risk of allergy
- Enhanced development
- Enhanced visual acuity
- Greater physiological stability during breastfeeding

Early breast milk, called colostrum, is especially rich in antibodies and cells that help fight infection. Babies who are too young to suckle at the breast can get your milk in their tube feedings. Even if you planned to bottle-feed or cannot breastfeed long term, you might consider providing breast milk for your preemie while s/he is in the hospital. It is something special that only you can do for your baby.

Are there mothers who can't or shouldn't breastfeed? ¹

Very few mothers are unable to breastfeed. Most drugs are unable to pass to the baby in large enough amounts to prevent breastfeeding. **Be sure you let your baby's doctor know ALL medicines, herbs or other drugs that you are taking.** The following mothers usually should avoid breast feeding:

- Mothers getting chemotherapy and or radiation for cancer
- Mothers with HIV or AIDS
- Mothers on medicines that collect in breast milk in large amounts or are dangerous to the baby

Please check with the baby's doctor, pharmacist and your lactation consultant for further information on your medications.

If you have had surgery or radiation to your breasts (especially near the nipple), it may be difficult to lactate (produce milk). If only one breast has had surgery or radiation, the other should be able to produce enough milk for your baby.

I can't or don't wish to breastfeed. Will I be hurting my baby? ¹

Babies can and do develop normally when fed only formula. Although encouraged, breastfeeding is a personal choice. You and your baby can still benefit from close skin to skin contact.

How is breast milk formed? ¹

The breasts contain many glands, which make milk. They collect nutrients and liquid from the mother's blood and make them into milk. The milk then travels to ducts which help store the milk. The ducts are behind the brown part of the nipple and each duct has a connection to the nipple. When the nipple is stimulated by sucking (or suction), hormones are released in the mother's brain which help bring the milk to the nipple. This is called "let down".

How will my body know to produce milk early? ¹

After delivery, hormones change rapidly, signalling to your breast to begin making milk. With stimulation by the baby's sucking (or by the breast pump) the breasts will continue to make milk.

The more stimulation the more milk the breasts make. Early and frequent double electric pumping will help create more milk for a longer duration.

My baby is sick and not eating. What do I do with my milk? ¹

Pumped milk can be frozen for later use. Unless told otherwise, the milk from an entire pumping should be pooled and then divided into containers for freezing. Freezing retains the nutrients of milk, but frozen milk has less protection against infection.

Your baby's doctor may want to use fresh milk when the baby starts to feed. Fresh milk is (milk that has not been frozen) can be refrigerated for 24 hours. Ask you baby's nurse about the guidelines for your nursery.

Will my milk provide my baby with all the things that s/he needs to grow? ¹

Milk from mothers who deliver early is different from milk from mothers who deliver on time. It has more protein, sodium, calcium and some other nutrients. Even so, breast milk is less rich in some of these things compared to what the baby would have received from the placenta if s/he were born full-term.

Some preemies grow well on their mother's milk alone. Others, especially very small or sick preemies, are unable to handle the amount of milk that it would take to get all the calories and nutrients that they need.

The same is true of formula-- preemie formulas are richer in these things than regular formulas.

Your baby's doctor may decide to enrich your milk to provide your baby with more calories and/or minerals. There are many ways to do this:

- Adding specific nutrients to the milk such as fat, protein or sugars.
- Mixing your milk with preemie formula. This is common if your baby needs more milk than you can currently supply.
- Human milk fortifiers. These are powders or liquids added to your milk before it is given to the baby.
- Giving more "hind" milk to the baby. This is the last portion of milk pumped from the breast. It is richest in fat and calories.

As the baby gets older and no longer needs to be tube fed, his/her need for extra nutrients and calories also decreases. So, by the time the baby can completely breast feed, usually breast milk supplies all the calories that s/he needs. Your baby may still need additional vitamins and iron.

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Breastfeeding Your Preterm Baby

Breastfeeding a baby that is born early presents unique challenges and special rewards. Getting a good start with pumping can make the process easier. The following are some tips to help you get that good start.

Depending on how premature your baby is at the time s/he is born, feeding is often delayed for a period of time while the doctors and nurses monitor him/her and provide the medical care that s/he requires. Your role in breastfeeding him/her begins now!

Breast Pumping Milk for Your Preterm Baby

- Begin pumping your breasts with a **double** electric breast pump as soon after delivery as you are able, and aim to pump every 2-3 hours, or 8 times in 24 hours for 15-20 minutes with the double pump. **Avoid being discouraged if you get nothing or a few drops the first day, this is normal. It all takes time.**
- Early pumping helps to bring the milk in and can stop engorgement (when the breasts become over full, painful and hard).
- Double pumping **is recommended to establish and maintain a long term milk supply. Single pumping with a manual or single electric pump will not establish and maintain a long term milk supply.**
- To begin pumping your breasts, set the “*suction control*” (“*vacuum regulator*”) at the minimum (“MIN”) setting and increase the setting to the highest level **that is most comfortable for you.** If pumping is painful then your setting on the “*suction control*” may be too high.
- Set the “*number dial*” at **6-7** for a few minutes. When the milk starts dripping (“letdown”) turn the dial to **4-5**. These speeds are similar to a baby’s sucking pattern. When the milk flow stops the dial can be raised to **6-7** again to see if another “letdown” can be stimulated. **The dial only controls the speed of the suction.**
- It’s a good idea to talk to the NICU Lactation Consultant after the first few days of pumping to discuss how much milk you are getting and to see if there are any concerns.
- Your first milk, colostrum, has antibodies, which can help protect your baby from infection. Even if your baby is still unable to eat, this milk should be saved for baby’s first feeding.

- Save any milk that you pump and give it to your baby's nurse. A baby's first feeding can be as little as 1ml (one fifth of a teaspoon!) every 12 hours.
- Spend time touching and holding your baby as soon as you are able. This will help to increase your milk supply as well as being a positive experience for you and your baby. It's a good idea to breast pump after you spend time with your baby.
- Using your pump properly will help to ensure a good milk supply. Review proper pump settings with the lactation consultant or your nurse. Refer to the page titled ". **'Tips for pumping and increasing your milk supply.'**
- Frequent pumping may be causing your nipples to become tender. Express some of your breast milk on to your nipples after pumping and allow to air dry for several minutes. Be sure the suction control is on minimum, and only increase the pressure if it is comfortable.
- Try to stick to your pumping schedule of every 2-3 hours but be flexible with your pumping times especially during the day. The most important thing is that you get 7-8 pumpings in 24 hours. Pump at night and be sure to go no longer than 4 hours between pumping sessions at night.
- When timing pumping sessions, it is similar to breastfeeding sessions, therefore time your pumping session from the beginning of one session to the beginning of the next session.
- Pumping sessions should last 15-20 minutes when you are double pumping.
- The team in the NICU/Level II Nursery (Lactation Consultant, nurse, dietician, and doctor) will help you to develop a feeding plan (kangaroo care, non-nutritive sucking, and practice breastfeeding/breastfeeding) for your baby.

Which breast pump is best for me?

There are a variety of breast pumps available on the market today, so it is important to think carefully before you rent or buy a breast pump, as they are different. A good pump can make all the difference. Because your baby was born early, long-term frequent pumping is necessary to maintain your milk supply until your baby is ready to feed totally from the breast.

We suggest that you rent a hospital grade double electric breast pump. For more information, please contact the Breastfeeding Centre at 416-586-4543, press 2 or NICU/Level 2 Lactation Consultant at 416-586-4800, ext. 6373.

Is reimbursement for pumps possible?

It may be possible for some or all of your pump rental expenses to be covered by your personal insurance. A form letter that can be signed by your baby's doctor and submitted to your insurance company is available inside the front cover of this binder.

How do I use the Medela Lactina pump effectively?

The *Lactina* pump made by Medela is the pump used in the NICU and Level 2 nurseries and is the breast pump available for rental in the Breastfeeding Centre, 7th Floor. They will show you how to use the breast pump. There are some important points to remember for successful pumping. See "Breast pumping milk for your preterm baby" Pg. 12.

How many times should I pump a day?

An ideal pumping schedule should begin within a few hours after your baby is born and pumping should be done at least 8 times per day, pumping every 2-3 hours.

Here are a few points to remember:

- You can be flexible with your pumping schedule. You should pump every 2-3 hours in your waking hours and pumping at night is recommended.
- It is important to pump a **minimum of 7 times/day**, but you should increase this to 8-10 times in 24 hours if your milk supply is decreasing.
- Pumping 5-10 minutes is better than missing a pumping session altogether.

What is normal milk supply development?

Many women are discouraged when they begin pumping because they may get very little milk, if any, for all their effort. It is important to remember that this is very normal. It takes several days for the milk supply to be established.

It is important that you continue to keep up with your pumping schedule, as this early and frequent pumping will help you to develop a good milk supply. Pump for the entire length of time, (15 to 20 minutes) even when your milk stops flowing as this will continue to tell your body to produce more milk.

Pump every 2-3 hours to make up 8 times in 24 hours. Remember that any milk you are able to pump is good for your baby! Talk to the NICU Lactation Consultant if you have any concerns about how much milk you are getting when you pump.

What does breast milk look like?

Colostrum is the first milk that you will produce. It is usually more yellow in colour than mature breast milk, which is bluish white.

What resources are there for me in the hospital?

- Lactation Consultant 416-586-4800, Ext. 6373
- Your baby's nurse
- Breastfeeding Centre, 7th Floor, 416-586-4800 Ext.4543 press 2
- Hours for the Breastfeeding Centre: Monday to Friday 10:00 a.m.-1:00 p.m. and 2:00 p.m. – 5:00 p.m. Saturday and Sunday 10:00 a.m-4:00 p.m.

Welcome to the Breast Pump Room

- After your discharge from the hospital, mothers who have infants in NICU or Level II Nursery are welcome to use our Breast Pump Room. Please ask your baby's nurse for the location of this room. **Room 704, code 1254**
- For your privacy, please ensure the door is closed tightly after you enter and leave the room.
- If you have bought a double pump please bring it with you when you visit your baby and you can use it in the pump room.
- If you have rented a "Medela" double electric pump you will need to bring your own **Medela tubing, piston, bottles, flanges, valves and white flaps** to use when you visit your baby as you can use the breast pump in the pump room.
- Please transfer your pumped milk into pink-topped collection bottles. Please ask the nurse caring for your baby for more bottles when you run out. Label the bottle with your baby's name, date and time you pumped.
- Soap for cleaning your breast pump kit is available by the sink in this room.
- Please also wipe off the hospital pump after use and ensure the room is tidy after you have finished pumping.
- To ensure the privacy only women are allowed in the breast pump room.
- A telephone is provided in the parent lounge for your convenience for local calls only.
- Please contact the NICU/Level 2 or the Lactation Consultant if the breast pump is not working satisfactorily or there are any other problems with this room. 416-586-4800, ext. 6373.
- **If you have any questions or concerns about breastfeeding or breast pumping, please contact your baby's nurse or the lactation nurse.**

Handling/Storage/Transportation of Breast Milk

How do I handle expressed breast milk (EBM)?

- It is important to wash your hands carefully with soap and water. Rinse and dry your hands well before expressing and handling your EBM.
- Each time you express milk use clean breast pump equipment and sterile containers (preferably plastic) for milk collection and storage.
- Collect milk in a new container each time you pump your breasts.
- Label the container with your baby's first and last name, the date and time of expression so that the oldest milk can be used first.
- **Avoid filling the container to the top.** Ask your nurse how much would be best to put into each container. Leave about 1 cm (1/2 inch) air space to allow milk to expand during freezing. Make sure the lid is on tight.

How do I store my expressed breast milk?

Milk can be stored as follows:

- EBM should be frozen immediately if you are pumping at home.
- EBM can be stored for 24 hours in a refrigerator, the temperature must be 4°C (35 - 40°F).
- For 2 weeks in a freezer compartment within a single door refrigerator.
- Up to 3-4 months in a freezer, which has a separate door from that of the refrigerator (i.e., a 2 door unit)?
- Up to 6 months in a deep freezer at 18°C (0°F).
- Frozen milk can be thawed in the refrigerator or can be set in a pan of luke warm water. Milk cannot be refrozen. Avoid leaving EBM to thaw at room temperature.
- Before feeding, shake the milk to mix the cream that has risen to the top.

How do I bring my expressed breast milk to the hospital?

- Only bring in a 2-3 day supply of EBM at a time if possible. Be sure to give the milk to your nurse as soon as you get to the NICU. Please check with your baby's nurse to see if there is enough milk to last until your next visit.
- EBM that you bring in from home should be kept frozen. Suggestions to keep it frozen during transport include:
 - a. cooler or container with ice cubes around the bottles;
 - b. freezer packs; or
 - c. insulated bag with ice cubes or freezer packs.

Any milk that is thawed must be used within 24 hours or discarded.



Tips for Pumping and Increasing Milk Supply

- Before starting to pump you can help your milk to “let down” (begin to flow) by placing warm wet washcloths over your breasts. After 10 minutes of warmth, gently massage your breasts using your fingertips in circular motion, working downwards toward the nipple. After massaging, gently place a breast in both your hands and stroke the milk down the ducts, using the base of your hands. Repeat on the other breast. You are now ready to start pumping.
- Try to eat a balanced diet and drink for thirst. You don’t need to drink extra fluids to produce more milk. Have a glass of juice or water to sip while pumping.
- At home have a pumping routine. Set up a comfortable area where you can relax in a well-supported chair. Place a picture of your baby near by or have one your baby’s toys/blanket beside you to help you think of your baby.
- As soon as you can, hold your baby out of the incubator, place your baby’s body close to your chest, skin to skin. This closeness can lead to increased milk production and letdown. Bring your pumping kit to the hospital and use the pump in the pumping room or at your baby’s bedside after holding your baby.
- When your baby is ready to start breastfeeding set up a feeding time with your nurse or the Lactation Consultant. Continue to pump your breasts after each breastfeeding.

Effective Positioning and Latching

How do I latch my baby onto my breast?

It is very important to help your baby learn to latch on to both the nipple and areola of your breast to encourage effective sucking and to prevent sore nipples. It is difficult for a baby to get milk by taking only the nipple into his/her mouth and sucking.

The size of your nipple may sometimes seem too large for your preterm baby when breastfeeding. With time and growth your baby will be able to latch effectively.

Effective sucking occurs when the **nipple and a portion of the areola** are in your baby's mouth, and your baby's gums squeeze the milk out to the sinuses and squirt it into the baby's mouth.

The sucking action of your baby's tongue helps to keep the areola well back in your baby's mouth and massages more milk out of the ducts into the mouth. As your baby draws some milk out, more flows down to fill the sinuses.

If only the nipple is in your baby's mouth, your baby gets very little milk and you will feel a pinching sensation on your nipple instead of pulling/tugging. The pinching will cause your nipple to get sore. A baby who is only latched onto the nipple should be taken off the breast and helped to latch onto both the nipple and the areola. If you are having difficulty please ask your nurse for assistance.

The sucking behaviours of a preterm infant are different than those of a full term baby. Babies that are less than 36 weeks of age may have a "burst -pause" sucking pattern. They suck continuously for several seconds before pausing to rest and may have more rapid breathing in the resting phase.

This is normal for the preterm infant. As your baby gets older you will notice that your baby is able to suck for longer periods and has shorter rest periods between sucking.

Please note: During the early days of breastfeeding a premature infant, the baby may lick and nuzzle at the breast before latching on. This is an important part of learning to breastfeed. It helps them to remember mother's taste and smell.

What are the best positions for feeding my baby?

Make sure you are in a comfortable position before you start to feed your baby. There are two positions that work best for breastfeeding a preterm infant. These are the **cross cradle hold** and the **football hold**.

It is a good idea to try both positions to find out which position is more comfortable for you and your baby. In either position it is important to provide extra support to your baby's head and neck. Preterm babies often seem to have a "heavy head" and need to be well supported to avoid affecting the airway, this will also make breastfeeding easier.

Modified Cradle Hold



Sit in a chair with pillows to support your shoulder and back, or in an armchair with your feet slightly elevated on a stool. Put a pillow on your hip to support your baby.

Hold your baby's head and upper back firmly with the hand opposite of the feeding breast, and your arm to hold your baby's body close to you.

Use your other hand (same side as the breast) to support your breast by cupping your breast with your finger and your thumb behind the areola.

Compress your breast (like a sandwich) and gently stroke your baby's upper lip with the nipple.

When your baby's mouth opens wide, pull your baby to the breast so s/he can get the nipple and as much of the areola in his/her mouth as possible. Try to bring your baby to you instead of moving yourself toward your baby. You will find this more comfortable.

The Football Hold



If possible sit in chair with pillows to support your shoulders and back, or in armchair. Place an additional pillow on the arm of the chair, or on the bed beside you to rest your arm on.

Holding your baby's head firmly in your hand, tuck your baby under your arms so that his feet are at your back.

Use your other hand to support your breast by placing your fingers under your breast and your thumb on top of your breast behind the areola.

Express a small amount of milk and tickle your baby's upper lip with the nipple. When your baby opens his mouth wide, pull the baby onto the breast and tuck him in closely so that he can get as much of the nipple as possible.

These positions give you good control of your baby's head. When positioning your baby make sure his arms are held forward.

Is My Baby Getting Enough From the Breast?

When placing your baby to your breast, you and the nurse will be watching for non-nutritive sucking versus nutritive sucking.

What are the characteristics of non-nutritive sucking (NNS) at the breast?

- no intake of breast milk
- rapid, irregular sucking
- baby may latch onto the breast, "lick and sniff", suck, and then fall off
- this may be repeated several times
- full volumes of tube feeding are required

What are the benefits of non-nutritive sucking?

- aids in digestion
- promotes self-soothing, calmness, longer periods of quiet sleep
- provides pleasant experience around mouth to support successful breast feeding in the future
- aids in milk production

What are the characteristics of nutritive sucking (swallowing)?

- intake of breast milk as demonstrated by swallowing
- slower sucking pattern with more regular rhythm
- visible and/or audible swallowing movements
- bursts of sucks followed by self-regulated pauses
- may range from 10 to 45 minutes

How will I know if my baby is taking any milk?

You and your baby's nurse will be watching for the following:

- swallowing
- the presence and timing of letdown
- milk visible at corners of baby's mouth
- visible pulling of breast tissue
- your feelings of difference in fullness of breasts before and after the feedings
- latching ability
- organization and strength of infant sucking
- infant behaviour after feeding (asleep, won't eat any more, crying)

- weight gain over time (over a week)
- wet diapers (6 times a day)

How do I know if my baby needs a supplement?

The decision of how much to supplement your baby after a breastfeeding session is determined by:

- the length of time your baby breastfed nutritively
- how well your baby is swallowing
- how good your milk supply is.

Note: Your baby may be at your breast for longer than he is sucking nutritively.

There will be a transition from full feeds through the nasogastric tube (NG) tube to full feeds at the breast as your baby grows and learns how to breastfeed.

Your Nurse, Lactation Consultant and Doctor will help you to develop a feeding plan that will help your baby to breastfeed.

Breastfeeding Your Preterm Baby at Home

How will I know my baby is getting enough breast milk when I am home?

Premature babies who are getting enough to eat have frequent, wet diapers, pale urine that does not have a strong smell (6-8 in 24 hours), and regular bowel movements. All babies have different stooling patterns; however the stool should be soft, yellow and seedy looking. Your baby will seem content and happy after nursing and will grow steadily.

Your baby should be fed every 2-3 hours and on cue, (see below) or about 8-12 times a day (24 hours). If your baby is sleepy, you will need to wake your baby regularly (at least 8 times in 24 hours) to feed. Remember crying is a late hunger cue.

How will I know if My Baby is Hungry?

Look for your baby's hunger cues and watch for:

- **Rooting**
 - **Hand to mouth movements**
 - **Sucking movements**
 - **Sucking on fingers and hand**
 - **Opening of mouth in response to touch (tactile stimulation)**
- The key is listening to your baby. If she/he gives you hunger cues, start feeding your baby. If you offer the breast and your baby starts to feed then she/he is hungry.
 - Be sure to watch closely as your baby feeds, to be sure she/he is swallowing and therefore eating well. You may have to keep stimulating your baby to keep her/him actively sucking and swallowing.
 - Call the NICU Lactation Consultant (416-586-4800 x6373), if you have any questions or if your discharge feeding plan needs to be changed.

Do I Still Need to Breast pump after my Baby is Discharged?

That will depend on your milk supply and how well your baby is feeding. This should be reviewed with the Lactation Consultant before discharge.

Sometimes pumping is needed for comfort if you are making more milk than your baby needs, and sometimes pumping is needed to increase milk supply.

Remember if you give some of your previously pumped breast milk, or formula, you will need to continue pumping to maintain your milk supply.

Keep in mind the supply and demand concept, the more milk you remove, the more you make, and the opposite.

What should I do if I am breastfeeding and I am not sure things are going well?

- Call the Breastfeeding Centre, (416-586-4800 Ext. 4543, press 2) or public health nurse to set up an appointment to assess the breastfeeding, and help you to set up a feeding plan. Sometimes you just need to hear that everything is going well.
- Be sure to take your baby to your family doctor for regular visits and weight checks

What should I do if I am breastfeeding but my baby does not want to nurse?

- Be patient and keep trying.
- Be sure your baby is positioned well on your nipple, (refer to section on latching).
- Offer a bottle as a last resort.
- Continue to pump. Give this milk to your baby. If your baby nurses for 5-10 minutes frequently and your breasts remain full after feeding sessions, please call your doctor or Breastfeeding Centre (416-586-4800 Ext. 4543, press 2) for help.

How fast should my baby grow?

- Please take your baby to your doctor within the first week after discharge from the hospital. This helps your doctor get to know your baby. It's good to plan for regular appointments and weight checks for the first few weeks home.
- Your baby should be gaining about 4-8 ounces (120-240 grams) per week after discharge.
- Your baby's weight is always checked when you go to the doctor. Ask for your baby's weight. Your baby's weight gain is one of the best ways to be sure s/he is getting enough to eat.

Medication Use and Breastfeeding Your Baby

As a new mother you may sometimes need to take medications. You may already have a health condition that requires taking medication or you may need an “over the counter” medication to help ease symptoms such as back pain, a stuffy nose or a headache.

If you are breastfeeding, you may be concerned about the effect that medication may have on your baby. This concern is normal. The following information will help you make the best choice about medications for you and your baby.

What should I do if I am taking medications and I am or I want to breastfeed?

- Always tell your baby’s nurse or doctor if you are taking any medicine and are breastfeeding.
- Your doctor, pharmacist and/or lactation consultant can help you make the best choices.

Are medications dangerous/harmful for my breastfeeding baby?

- Most medications are OK to take during breastfeeding. There are very few that actually cause harm to the nursing baby. **Check with your doctor, pharmacist, or Motherisk at 416-813-6780.**
- If you are taking a medication that is considered unsafe for breastfeeding, there is often another choice of medication in the same class that can be used safely. Ask your pharmacist.
- Some medications are OK to take as long as the nursing infant is closely monitored for signs of side effects.

What if the medication gets into the breast milk?

- Most medications do pass into breast milk; however the amount of medication that is transferred to your nursing baby is usually too low to cause any harmful effects.
- With some medications, you can minimize the amount of drug your baby is exposed to by taking the medication at certain times, for example right after you breastfeed your baby. Your doctor or pharmacist can help set up a feeding and medication schedule.

Are “over the counter” medications safe while I am breastfeeding?

- Most “over the counter” medications such as laxatives, pain relievers, cough and cold medicines are safe while breastfeeding. However, it’s a good idea to check with your doctor, pharmacist or lactation consultant before starting any medication while breastfeeding.

Can I take herbal medicine while I am breastfeeding?

- There is very little information about the safety of herbal products during breastfeeding. It’s best to avoid these products during the months when you are nursing your baby. Some caffeine free herbal fruit teas are now considered safe. Ask your pharmacist.

Is it safe to have alcoholic beverages while I am breastfeeding?

- Alcohol passes freely into breast milk. Side effects have been reported in the baby even after only moderate amounts of alcohol taken by the mother. Occasional use of alcohol, such as wine with dinner, does not mean you have to stop breastfeeding. However, you should time breastfeeding your baby so that most of the alcohol is cleared from your breast milk. It generally takes two to three hours per drink for breast milk to be clear of alcohol. Drinking beer will not increase milk supply.

Can I smoke while I am breastfeeding?

- Avoid cigarette smoking while you are nursing. The nicotine in cigarettes passes into milk and may cause infant colic and decrease your milk production. Exposure of children to cigarette smoke before and after birth has been shown to increase the risk for respiratory illnesses such as lung infections and asthma and sudden infant death syndrome (SIDS).
- Breastfeeding mothers are strongly encouraged to stop or to limit their smoking. If this is not possible, avoid smoking two to three hours before and during breastfeeding, and do not smoke while in the same room with the infant. If you are trying to quit smoking, certain products such as the nicotine patch or nicotine gum can be used during breastfeeding. Ask you doctor or pharmacist.

Is it safe to drink coffee while breastfeeding?

- Drinking moderate amounts of coffee (i.e. 1-2 cups per day) during breastfeeding is considered safe. Breastfeeding mothers need to consider the amount of caffeine they take from all sources. Caffeine is found in many food

sources other than coffee including tea, soft drinks, chocolate and in some “over the counter” and prescription medications. A large caffeine intake (i.e. more than 3 cups of coffee per day) while breastfeeding may lead to the baby becoming jittery, colicky, and constipated. Caffeine may also decrease your milk supply.

Can I use street drugs while I am breastfeeding?

- Illegal street drugs such as marijuana, cocaine, heroin and LSD should be avoided while breastfeeding. Toxic effects have been reported among breastfed infants whose mothers abused cocaine. Exposure to marijuana through breast milk may delay nerve development of infants. The use of methadone as part of the treatment of addiction is OK during breastfeeding but must be monitored by a doctor.

Where can I get more information?

- Motherisk Program, The Hospital for Sick Children 416-813-6780
- Perinatal Pharmacy, Mount Sinai Hospital 416-586-4800 Ext. 8303
- Breastfeeding Centre 416-586-4800 Ext. 4543 (option 2)
- NICU Lactation Consultant 416-586-4800 x6373, ask your baby’s nurse
- Your baby’s doctor, your Public health nurse or a lactation consultant.

Nutrition, Your Baby, Breastfeeding and You

You truly are eating for two (or more!) – not quite, but almost. When you are breastfeeding, taking care of yourself and your baby means, getting as much rest as possible, drinking to thirst and eating well. Eating a variety of foods, in moderate amounts, chosen from the four food groups of Canada's Food Guide is a great place to start. Canada's Food Guide is also a good place to review the balance of food's you usually eat. Whatever your needs, the food groups are a guide that help you get important nutrients.

What are the four food groups?

- Grain Products
- Vegetables and Fruit
- Milk Products
- Meat and Alternatives

I'm so tired and don't have time to make big meals. How can I still eat well?

- Some examples of quick nutritious foods are: cheese, yoghurt, whole grain bread or crackers, eggs, raw vegetables, fruits, nuts, cold sliced meats, vegetable juices, pasta, rice or legume salads, milkshakes.

I have been told to drink a lot of fluids when I breastfeed. How much do I need to drink?

- Drink when you are thirsty.
- If your urine is pale yellow, you are drinking enough. If your urine is dark with a strong smell and you have hard, dry stools, you need to drink more. Be sure to drink when you are thirsty as these are late signs of needing more fluids.
- The best choices of fluids are: water, fruit or vegetable juices, milk, or soup

Do I need to take any vitamin or mineral supplements?

- If you are eating a well-balanced diet the use of supplements is not necessary. You may finish your prenatal vitamin/mineral supplements if you want.

What about my weight while I breastfeed?

- Avoid dieting while you are breastfeeding. This includes liquid diets and weight loss medication.

- It is normal to lose weight during the first 6 months of breastfeeding. The average rate of weight loss is 0.5 to 1.0 kg, (1-2 lbs.) per month after the first month postpartum.
- If you have gained more weight than recommended, losing up to 2 kg. (~ 4.5 lbs.) per month is unlikely to affect your volume of milk. Watch for signs that your baby's appetite is not being satisfied – if this happens, you need to eat more.
- If you are losing more than 2 kg. (~ 4.5 lbs) per month after the first month postpartum, you need to eat more.

I don't like milk and I'm sure I don't drink enough. What do I do?

Milk is an excellent source of calcium. If you dislike drinking milk choose foods with milk in other forms or other foods such as:

High Sources	Medium Sources	Low Sources
Yoghurt	Baked beans	Parmesan cheese
Cheese	Soy, white beans	Bread
Milk	Pudding/custard (made with milk)	Broccoli, kale
Buttermilk	Frozen yoghurt	Almonds
Skim milk powder	Ice milk	Ice cream
Salmon with bones	Tofu	Oranges
Processed cheese slices	Feta cheese	Chick peas
		Cottage cheese

Is caffeine bad for my baby?

- A very small amount of caffeine crosses into breast milk. One to two cups of coffee a day is unlikely to cause a problem for you or your baby. Some babies are sensitive, so if your baby is fussy and wakeful, try cutting back on caffeine to see if the baby settles.
- Caffeine is found in coffee, tea, colas, chocolate and many over the counter medications.

I've heard that drinking a beer helps you make more breast milk. Is this true?

There is no clear evidence to suggest that beer increases your milk supply. Alcohol crosses into breast milk, which is harmful for your baby.

I follow a vegetarian diet. How can I best meet my breastfeeding baby's nutritional needs?

Follow Canada's Food Guide, getting protein from meat alternatives. Your needs will depend on the type of vegetarian diet you follow. With careful planning, following Canada's Food Guide, vegetarian diets can meet your nutrition needs during breastfeeding. If you follow a strict vegetarian or vegan diet, speak to your doctor and/or dietitian. You will have to choose foods that provide adequate iron and will have to consider a source of vitamin B₁₂.

Can I eat peanuts or peanut butter while I am breastfeeding?

Pregnant/breastfeeding mothers should avoid eating peanuts or peanut butter if there is a history of allergy or asthma in either your or the baby's father's family, including in your other children.

Key Points

1. Compare the foods you eat to Canada's Food Guide.
2. Drink when you are thirsty.
3. Vitamins are unnecessary if you eat a balanced diet.
4. Reduce your intake of caffeine containing foods and beverages.
5. Avoid alcohol.
6. Avoid dieting and trying to lose weight, too fast.
7. Eat many small snacks if you are too tired or have little time to prepare a big meal.
8. If you are a **strict** vegetarian, you may need vitamin B₁₂ supplements. Ask your doctor or dietician.

Please speak to the lactation consultant or dietician if you would like more information.

Publications Available

- "Canada's Food Guide", 1992. – Health & Welfare Canada
- "Iron" Essential For Good Health, - Beef Information Centre
- "Iron" – Beef Information Centre

- “Calcium Calculator”, 1999, - B.C. Dairy Foundation and the Dairy Farmers of Ontario
- “Calcium” – Dairy Bureau of Canada, 1990
- “Fibre Facts” – 1985, Nutrition Communications, - Kellogg, Canada
- “Peanut Allergy” – Committee on Toxicity of Chemicals in Food, Consumer Products and The Environment. Department of Health, UK, 2000

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- Health and Welfare Canada, Feeding Babies, 1986.
- Health and Welfare Canada, Canada's Food Guide, 1992.
- Nutrition during Lactation; Summary, Conclusions and Recommendations, National Academy of Sciences Press, Washington D.C. 1991.
- Mohrbacher, N. and Stock, J. (1991). LaLeche League International.
- The Breast Feeding Answer Book. LaLeche League International Inc.
- Lauwers, J. and Woessner, C. (1990). Counseling the Nursing Mother.
- Avery Publishing Group, Inc. New York.

Resources for Breastfeeding Mothers

Breastfeeding, Renfru, M., Fisher, C., & Arms, S. California, 1990

The Complete Book of Breastfeeding, Eiger, M., and Olds, S., Workman, New York, 1987

Nursing Your Premature Baby Pamphlet, LaLeche League International, Inc. (416) 486-3368

The Womanly Art of Breastfeeding, Dana, N. and Price, A., Meadowbrook, Egan Mn., 1987

Breastfeeding Twins, Triplets and Quadruplets, Keith, D.M., McInnes, S. and Keith, L.G., Centre for Study of Multiple Births and Parents of Multiple Births Association of Canada, Chicago, 1982

Your local library has many of these books as well as a wide variety of other books available for loan.

WEB Sites you may find helpful

- www.breastfeeding.com
- www.breastfeedingonline.com (this site includes Dr. Jack Newman's handouts)
- www.lalecheleague.org
- www.motherisk.org

Who should I speak to for more information on breastfeeding?

- Your Lactation Consultant in the NICU, or your baby's nurse in the hospital
- Mount Sinai Hospital Maternal Infant Program/Breastfeeding Centre.
7th floor: Monday – Friday 10:00 a.m. - 5:00 p.m.
Saturday & Sunday 10:00 a.m. - 4:00 p.m.
416-586-4800 Ext. 4543 (2)
- Mother Risk, Hospital For Sick Children 416-813-6780
- La Leche League - 24 hours support 416-483-3368
- Public Health Nurses: Toronto, you can arrange for a home visit or find out the nearest Breastfeeding Clinic to you 416-338-7600
- Lactation Consultants: Association of Southern Ontario 416-223-4040

Bottlefeeding My Preterm Baby

Bottlefeeding is a complex process for a preterm infant. It involves learning to coordinate breathing with both sucking and swallowing. To best assist your baby with bottle-feeding, it is helpful to familiarize yourself with a preterm infant's normal feeding behaviour.

At the beginning of a bottle, your baby will suck vigorously and may forget to breathe. This phase of sucking is followed by a pause and breathing is re-established. For a short period of time breathing can be very rapid.

Be available for as many feedings as possible. You are your baby's most consistent caregiver and your baby will know you best. The more comfortable your baby is, and the more consistent the feeding routine, the better your baby will feed.

When can I give my baby a bottle?

The gastric tube will be moved to the nose so the tube in the mouth does not restrict the tongue. You will begin by bottlefeeding your baby once a day and increase this as your baby tolerates.

As your baby becomes stronger s/he will begin to take more of each bottle per try and more bottles per day. This change may take days or weeks depending on the infant. At this time you will be encouraged to be present for feedings. The more opportunity for practice that you and the baby have together, the more successful the feeding experience will be.

Once your baby is taking all feedings by bottle, s/he will be placed on a demand schedule where s/he will be fed upon awakening.

How do I position my baby?

Knowing proper positioning during feeding can play an important role in assisting your baby to bottle-feed. Your baby's head should be held slightly forward and straight-ahead. This flexed position helps your baby obtain a good seal around the nipple and brings the tongue forward in the mouth. These are both important for effective sucking. (It is very difficult to swallow when your head is tilted back-- try it yourself.)

Ensure that your baby's arms are forward, with his hands near the mouth or bottle. It is important to feed your baby in a fairly upright position, with his head tucked slightly forward. This will reduce the risk of choking, which can be frightening to you and your baby.

Your arm should be positioned behind your baby's head. This position is the best for sucking and helps your baby have a better seal around the nipple and this will bring the tongue forward. Remember to turn your baby's head and body towards you. If only the head is turned, feeding is much more difficult.

Avoid feeding your baby lying flat on their back. Milk readily flows to your baby's ear canals and may cause infections.

Avoid propping the bottle and leaving your baby unattended. Propping the bottle is dangerous. The bottle may/will stay in your baby's mouth, milk will continue to flow from the bottle, and your baby may choke.

Will my baby get tired during bottle-feeding?

It is unlikely that your preterm baby will feed like a full term baby. He may require more time and patience during bottle-feeding. Premature infants often tire out during feeding because they tend to initially suck vigorously and "guzzle" their feedings. Signs of fatigue in your infant may include blue colour around the mouth and nose, and the heart rate dips. If your baby experiences fatigue, pace him by pulling the nipple out after a few good sucks as this creates rest periods. Remember to allow sufficient time to bottle feed without rushing your baby.

How do I care for my baby's mouth?

Clean your baby's mouth/teeth after feeding to prevent tooth decay. Even if your baby does not yet have teeth, you can cleanse his gums with a clean wet cloth or an infant toothbrush moistened with water.

Avoid putting put your baby to bed with a bottle of milk, juice or any other sugar-containing fluid. When your baby becomes drowsy and falls asleep saliva flow is decreased or stops completely. The sugar-containing fluid is not cleared away, allowing bacteria to grow quickly and cause your baby's teeth to decay. A bottle of water may comfort your baby while avoiding tooth decay.

Avoid dipping dip soothers in syrup, honey or sweetened liquids.

Remember that one of the functions of baby teeth is to guide the permanent teeth into their proper positions. Early loss of your baby's teeth due to tooth decay may cause crowded or crooked teeth.



Formula Feeding Your Preterm Baby at Home

Why does my baby need a “premature formula”?

During the last three months of pregnancy, babies grow a lot. Even though your baby was born early, she/he still has all that growing to do! Regular formula for term babies cannot provide your baby with the protein, vitamins and minerals that she/he needs. Your baby may also need special kinds of proteins, sugars and fats. This will help her or his stomach and bowels to begin their important jobs of digesting and absorbing.

How are premature formulas different from standard formulas?

Premature formulas contain more protein, vitamins and minerals than standard formulas. Some have extra calories too. Premature formulas are only used while your baby is in the hospital.

The protein used in premature formula has more whey than casein. The whey protein is more similar to breast milk and makes a softer, smaller curd when it reaches your baby's stomach. The formulas contain sugar that is easily digested (glucose polymer). Lactose (the same kind of sugar that is present in breast milk) is also used. They contain oil that is easily digested (MCT or medium chain triglyceride). Other oils that provide fat needed for skin and brain growth (LC-PUFA or long chain polyunsaturated fatty acids) are also used.

Will my baby need a premature formula when she/he comes home?

Most babies are ready to breastfeed or to take standard iron fortified formula by the time they are ready to go home. By that time, they are able to breast or bottle feed enough to satisfy their needs for growth and development. Babies born very small or who were very sick may need special premature discharge formulas. Your baby's doctor or dietitian will let you know if your baby needs a special formula at home.

Why is formula important for my baby?

- All premature babies should go home on an iron-fortified formula. Formulas provide all the nutrients needed for your baby to grow.
- Iron-fortified formula is the only food your baby needs until approximately 6 months corrected age**.
- Formula is recommended as the sole form of liquid for your baby until she/he is one year corrected age**. (age of infant from your due date)

Where can I buy formula?

- Formulas are available at grocery stores, drug stores, Costco, Toys 'r' Us, Wal-Mart, and many other retail stores.
- If the formula you have chosen to use is not available at a store close to you, ask if the store will order it in for you.

How do I know which formula to feed my baby?

- While your baby is still in the hospital, discuss the choice of a formula with your baby's dietitian, nurse or doctor.
- Choose one formula.
- Before changing a formula it is best to discuss this with your doctor or dietitian.
- The concentrated liquid or powder form of formulas is less expensive than the 'ready to feed' formula.

How much formula should my baby take?

- Most bottle-fed premature babies are taking about 2-3 ounces (60ml-90ml), every 3-4 hours when they go home.
- The amount will get bigger as your baby gets bigger.

What if my baby needs a special formula?

- Some babies need special discharge formulas or regular formulas prepared in a different way. Your dietitian or doctor will discuss this with you.
- Some formulas, such as soy or hydrolysate formulas, are used for special reasons. Your dietitian or doctor will discuss this with you.

Not Recommended:

- Goat's milk
 - Soy milk (e.g. So Good)
 - Rice milk (e.g. Rice Dream)
 - Skim, 2% and whole milk
 - Whole evaporated milk (e.g. Carnation)
 - 'Health food' formula
 - Brand formula (e.g. Wal-Mart brand)
- (These lack **all** the nutrients your baby needs).*

Formulas Available In Canada

What is premature formula?

- Premature formulas are only available in hospital. If you have questions about this formula please talk to your dietitian.

What are premature discharge formulas?

- Premature discharge formulas are formulas which have more calories, protein and vitamins/minerals than term formulas. These formulas would be appropriate for premature babies born very small or who were very sick while in hospital. Your dietitian will discuss these formulas with you.
- At the present time, premature discharge formulas are available by ordering from Wal-Mart or Shoppers Drug Mart. Ask the pharmacist at your store nearest you. The Specialty Food Shop at the Hospital for Sick Children also has these formulas. You can order by phone 1-800-737-7976 or online www.SpecialtyFoodShop.com. The shop will deliver to your home if needed.

The following premature discharge formulas are available in Canada:

Product	Company
Enfacare	Mead Johnson
Similac Neosure	Ross

What are term formulas?

- Use an **iron-fortified** formula until your baby is **one year corrected age**.
- Choose one formula. Discuss any change with your doctor or dietitian first, particularly if your dietitian has made a 'recipe' or 'special' formula for your baby.
- All products listed below will provide the nutrients your baby needs.

The following formulas are available in Canada:

Product	Company
Enfalac [®] , Enfamil A ⁺ [®]	Mead Johnson
Similac Advance [®]	Ross
Good Start [®]	Nestle (risk of cow's milk protein allergy despite label claiming "hypoallergenic")

What are special formulas?

- Lactose Free Formulas: no milk sugar added

Product	Company
Enfalac LactoFree®	Mead Johnson
Similac LF	Similac LF

* Only use a lactose free formula on the advice of your doctor or dietitian.

- Soy Based:

Product	Company
Prosobee®	Mead Johnson
Isomil®	Ross
Alsoy®	Nestle

*Only use a soy-based formula on the advice of your doctor or dietitian.

What are follow-up formulas?

- 'Follow-up' formula is **only** for infants **older** than 6 months **corrected age**.
- Infants should be drinking at least 500 ml (2 cups or 16 ounces) of formula each day.
- Infants should be eating a variety of solid foods in sufficient amount.
- Talk to your doctor or dietitian before using a 'follow-up' formula.

Products	Company
Follow-up®	Nestle
Follow-up Soy	Nestle
Next Step®	Mead Johnson
Similac Advance 2	Ross

Formula Preparation

What types of formula products are available?

	1. Ready-to-feed	2. Liquid Concentrate	3. Powder
Mixing	Does not need mixing	1 can of formula to 1 can of sterile water	1 scoop of powder to 2 ounces (60ml) sterile water
Refrigeration	Refrigerate for up to 48 hours once opened	Refrigerate for up to 48 hours once opened	No refrigeration needed
Prepared Formula	Keep in fridge for 24 hours	Keep in fridge for 24 hours	Keep in fridge for 24 hours

Cost	Most expensive	Less expensive	Least expensive
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** ALWAYS READ THE LABEL ON THE CAN FOR MIXING INSTRUCTIONS

***Powdered infant formula is a non-sterile product, proper handling and preparation of the feed from powder is necessary.

How do I prepare formula for my baby?

- Always read the instructions on the formula container carefully. The preparation tips given here are general and are intended to supplement the specific instructions of the formula you choose and/or the recipe your dietitian or doctor send home with you.
- Make enough formula for a 24-hour period at the easiest time of the day for you. Make sure you have enough bottles for all night and the first morning feeding.
- You must always use sterile water when preparing formula from powder for the entire time you are formula feeding your baby (usually until she/he is 1 year corrected).
- It is recommended that you sterilize all equipment and bottles for preparing formula feeds until your baby is approximately 4 months corrected age.
- Information and pictures about sterilization and preparation of formula are included below. Please note the steps for preparing liquid concentrate are very similar to powdered infant formula except make sure to read the label on the can of formula and check that it says “liquid concentrate.” Also, closely follow the recipe as written on the can or prescribed by your dietitian or doctor because giving too much liquid concentrate may be harmful to your baby.
- If your dishwasher has a “sterilizer” setting (the temperature of the cycle is greater than 180° F) then the dishwasher may be used to sterilize equipment. Otherwise commercial sterilizers (follow the manufacturer’s instructions) may also be used for sterilization.
- Before your baby goes home, learn how much and how often she/he eats in 24 hours (a newborn baby will drink **approximately** 17 to 24 ounces per day and will feed **approximately** 6-7 times a day). **Always prepare more formula than the baby takes to allow for changes in appetite with each feed.**
- Remember that as the baby gets older, she/he will eat more and you will need to prepare more formula.

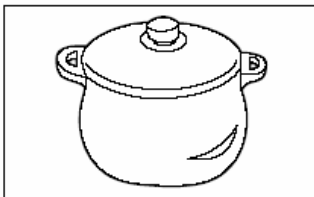
Sterilizing supplies – what you need

Sterilize supplies until your baby is at least 4 months old.

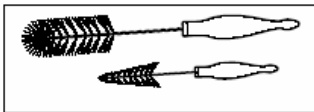
Sterilize all feeding supplies before using them. Sterilizing kills germs that could make your baby sick.



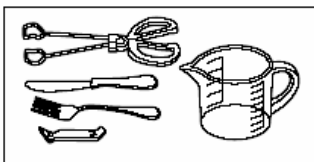
Wash your hands with soap and warm water. Make sure the counter top is clean and dry. Gather your supplies.



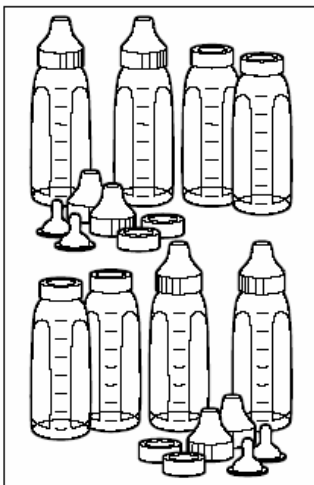
Large pot with lid



Nipple brush and bottlebrush



Tongs and can opener
Glass measuring cup
Fork, if using powdered or liquid concentrate formula
Knife, if using powdered formula



To make just enough bottles to last 1 day, you need 6 to 8 bottles, nipples, caps and rims.

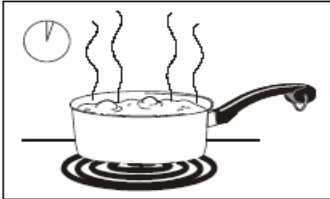
Choose nipples that are right for your baby's age. For the first 3 months, use a "slow flow" nipple. It has 1 hole that lets formula come out about 1 drop a second. Do not make the hole bigger. Throw out nipples when they become sticky or worn.

If using disposable liners, sterilize only the nipples, rings and caps. Throw out plastic liners after one use.

Sterilizing water

Sterilize water until your baby is at least 4 months old.

Always use sterilized, hot water to make powdered formula, because the powder is not sterile.



If you need to mix formula, sterilize the water first. Boiling water makes it sterile and safe to use.

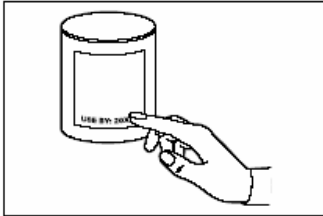
Use water from the cold water tap.

If you use bottled water, it must also be sterilized. Do not use mineral water or carbonated water to make formula.

Boil water in a pot or kettle for at least 2 minutes.

If you are making powdered formula, use the water within 30 minutes. After 30 minutes, the water is not hot enough (over 70° C) to kill harmful germs that may be in the powder.

Preparing powdered formula



Check the “Use By” date.
Do not buy or use formula after that date.

Check the can for dents.
Do not use formula from a can that is dented
or damaged.



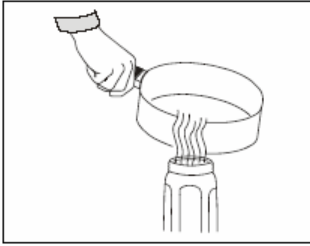
Wash your hands with soap and warm water.

**Always use
sterilized, hot water
to make powdered
formula, because
the powder is not
sterile.**

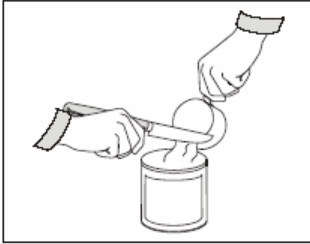
Boil water in a pot or kettle for at least 2 minutes.

The water must be used within 30 minutes of boiling.
After 30 minutes, the water is not hot enough
(over 70° C) to kill harmful germs that may be in
the powder.

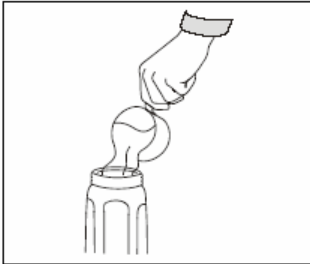
**Use water that was
boiled less than
30 minutes ago.**



Pour the amount of hot, boiled water needed for each feeding into sterilized bottles.



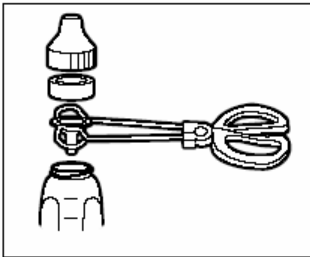
Fill the scoop from the can.
Level the top with the sterilized knife.



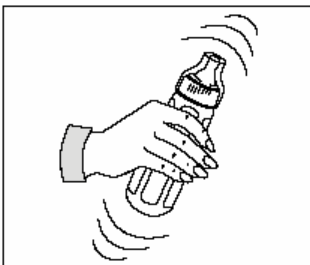
Add the correct number of scoops of powder to the boiled water in the bottle.

It could harm your baby if you add too much or too little water.

Measure carefully.
Using too much or too little water could harm your baby.



Pick up sterilized nipples, rims and caps with sterile tongs and put on bottles. Then tighten the rims with your hands.



Shake each bottle well to mix.

2008. Mount Sinai Hospital would like to acknowledge the team at Hamilton Public Health Services, Hamilton Health Sciences Center and St. Joseph's Healthcare (Hamilton) for sharing the pictures and information about formula feeding your baby.

Formula Feeding Tips

- **Keep formula cold** until the baby is ready to feed, unless you are using ready-to-feed formula. If you are out of the house for **less than 4 hours**, formula can be carried safely at room temperature. For longer trips, use a cooler or insulated bag. **Do not take warmed formula.**
- Most babies like their formula warm. Warm the formula just before feeding. The easiest method is to place the bottle in warm tap water for about 5 minutes. Formula should feel cool to touch (about the same temperature as your body), **not hot**. For travelling, it is easy to carry a plastic container and use warm tap water to warm the bottle. You can also carry warm water in a thermos.
- **Avoid the use of a microwave oven** for warming bottles of formula. This may cause uneven heating, which could burn your baby's mouth and feeding passages. If you do use a microwave, please follow the following recommendations:
 - Take nipple off bottle
 - Use plastic bottles (glass bottles may crack or explode)
 - Always heat 4 ounces or more at a time
 - Only heat refrigerated formula
 - Always stand the bottle up during heating
 - Heat 4 ounce bottles for 30 seconds or less; heat 8 ounce bottles for 45 seconds or less
 - Replace nipple, and invert bottle 10 times to make sure there are not any formula hot spots
 - Always test formula – place several drops on your tongue or on top of your hand
 - Formula should be **cool to the touch** – formula warm to the touch is greater than body temperature and may be too hot to drink.

Questions You May Have About Feeding Your Baby

Can I feed my preterm baby the same as other babies?

- Preterm babies are fed the same foods as other babies when they are at home.
- Use corrected age** when deciding when to start new foods to your baby e.g.: rice cereal, fruit, vegetables and homogenized cow's milk.

What should I feed my baby in the first 6 months of corrected age?

- Your baby only needs breast milk or iron fortified formula.
- Your baby needs an iron supplement if you are breastfeeding. If your baby is feeding iron fortified formula an iron supplement is usually not necessary.
- Vitamin supplements called Tri-Vi-Sol® will be recommended. Tri-Vi-Sol® is vitamin A, vitamin D and vitamin C. Preterm babies need extra amounts of these vitamins.
- A fluoride supplement may be needed after the baby is 6 months corrected age if you are using a “ready-to-feed” infant formula or your house uses well water. Ask your doctor about fluoride supplements.
- Juice or water lack the necessary calories and nutrition that babies need to grow well. They also replace the nutrition of breast milk or formula.

What foods can I give my baby in the first 12 months corrected age?

Corrected Age	New Food Introduced
0-6 months	Breast milk or iron fortified infant formula
6 months	Iron-fortified infant cereal mixed with breast milk or formula
6-7 months	Strained or pureed vegetables Pureed fruits Yoghurt, with at least 5% milk fat (M.F.) Cottage cheese
7-9 months	Strained or pureed meat, poultry, fish Strained or pureed meat and vegetable mixtures Cooked egg yolk Fruit desserts

9-12 months	Mashed table foods Finger foods, finely chopped
12 months	Homo milk Whole egg, cooked

When should I give my baby other foods to eat?

- When your baby is approximately 6 months corrected age, you can begin solid foods.
- Your baby is ready to try solid food if:
 - a. Your baby can turn their head away if food is not wanted
 - b. Your baby opens its mouth wide when sees food coming
 - c. Keeps food in mouth instead of squeezing it out
- Start with iron-fortified RICE baby cereal made with breast milk or formula and feed with a spoon. The cereal should be very runny.
- Expect your baby to “wear” most of the first spoonfuls and make funny faces. This is a new taste and texture and your baby will take some time getting used to it.
- A new food should only be started once every 3 to 4 days to help identify food allergies.
- Solid foods are given to your baby at the appropriate corrected age to allow for normal growth and development
- Solid foods do little to help your baby sleep through the night, or make your baby grow faster.

How do I know my baby is getting enough to eat?

- Your baby is growing. Your doctor will weigh your baby at every check up
- Your baby has 6 or more wet diapers a day
- Your baby has frequent stools
- Your baby is happy and content between feedings

How fast should my baby grow?

- Take your baby to your doctor within the first few days after discharge from the hospital. This helps your doctor get to know your baby.
- Your baby should be gaining about 5-7 ounces (150-210 grams) a week after she/he goes home.
- Your baby’s weight, length, and head circumference are always checked when you go to the doctor.
- If your baby is gaining weight and growing long she/he is getting enough to eat.

What foods should I not give to my baby?

Avoid giving your baby:

- Egg whites until one year corrected age. This reduces the chance of an allergic reaction.
- Peanut butter until two year corrected age. This reduces the chance of an allergic reaction.
- Honey to your baby. Honey may cause botulism, which is a type of food poisoning.
- Citrus fruits (oranges, lemons, limes, and grapefruit) during the first year as they may cause an allergic reaction.
- Cow's milk until your baby is 12 months corrected age
 - a. Only offer homo (homogenized) cow's milk.
 - b. Avoid giving Skim, 1% and 2% milk as babies need the fat in the milk to grow and develop normally.
- Dairy products that are "low fat", "skim" or "light".
- Soy drinks (except soy formula), rice or other drinks or herbal teas.

Your Baby's Constipation

Why does my baby get constipated?

- Your baby may not be getting enough breastmilk or formula.
- Your premature baby's digestive system is still immature.

How will I know if my baby is constipated?

- Your baby may pass stool every day or only pass a stool once every 2-3 days. Each baby is different and you will get to know your baby's regular stooling pattern.
- If your baby's pattern changes and s/he stools less often, s/he may be constipated.
- Your baby may cry, pull up his legs and grunt when trying to have a bowel movement.
- Stools are small, dry and hard.

How can I help my constipated baby who is younger than 6 months corrected age?

CHOOSE ONE of these solutions for 2-3 days. If there is no improvement, talk to your doctor.

- Increase the amount of breastmilk or formula your baby takes.
- If using iron fortified formula, mix ½ and ½ with non-iron fortified formula.
- If you have just started rice cereal, try oatmeal cereal instead.
- Offer 1-2 ounces of boiled, cooled water 1 to 3 times per 24 hours, after feedings.
- Mix 1 tsp. (5 ml) of table sugar with 2 ounces of boiled, cooled water and feed by bottle **no more than 2 times in 24 hours.**
- Mix 1 ounce of prune juice with 1 ounce boiled, cooled water and offer **once every 24 hours.**

Remember, water, sugar water and diluted prune juice contain very few or no calories at all.

How can I help my constipated baby who is older than 6 months corrected age?

- Increase vegetables and fruit.
- Try strained prunes.
- Try full strength prune juice, ½ to 1 ounce, 1 to 2 times per 24 hours.
- Try barley, oatmeal, or mixed cereal instead of rice cereal.
- Offer plain water between feedings if your baby is growing well.

What about using honey or other medicines?

- Avoid feeding your baby honey and corn syrup as they may contain harmful germs.
- Discuss this with your baby's doctor If laxatives or suppository's are needed

Should I use gripe water for my baby's discomfort?

- Avoid using Gripe water as it may contain alcohol. Read the label.
- If alcohol is in the gripe water, avoid using it.

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Reading List for Feeding Children

You can find the following books in most bookstores. Each book is highly recommended. Choose the book(s) best for your needs.

I'm Hungry, Eleanor Brownridge, 2nd edition, Toronto, Random House, 1993

The Hospital for Sick Children Better Baby Food, D. Kalnins and J. Saab, Toronto, Robert Rose Inc., 2001

Feeding Your Preschooler, Louise Lambert-Legace, 1st English ed. Don Mills, Stoddard Publishing Ltd., 1993

Foods to Grow On, S. Mendelson and R. Mendelson, Toronto, Harper Collins, 1994

How to Get Your Kid to Eat... But Not Too Much, E. Satter, Palo Alto, CA., Bull Publishing Co., 1987
