**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 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, s/he still has all that growing to do! Regular formula for term babies cannot provide your baby with the protein, vitamins and minerals that s/he needs. Your baby may also need special kinds of proteins, sugars and fats. This will help his or her 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 oil that provides fat needed for skin and brain growth (LCT or long chain polyunsaturated fatty acids) is also used.

Will my baby need a premature formula when s/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 4 to 6 months corrected age.**
- Formula is recommended for your baby until s/he is one year corrected age.

**Corrected age is your baby’s age starting from the day s/he should have been born.
Where can I buy formula?

- Formulas are available at grocery stores, Costco, Toys ‘r’ Us, Wal-Mart and drug 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
- No name brand formula (e.g. President’s Choice, Walmart 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 Walmart or Shoppers Drug Mart. Ask the pharmacist at your store nearest you. Specialty Food Shop at the Hospital for Sick Children also carry 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:

<table>
<thead>
<tr>
<th>Product</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfacare</td>
<td>Mead Johnson</td>
</tr>
<tr>
<td>Similac Neosure</td>
<td>Ross</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Product</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfalac, Enfamil A+</td>
<td>Mead Johnson</td>
</tr>
<tr>
<td>Similac Advance</td>
<td>Ross</td>
</tr>
<tr>
<td>Good Start</td>
<td>Nestle (risk of cow’s milk protein allergy despite label claiming “hypoallergenic”)</td>
</tr>
</tbody>
</table>
What are special formulas?

- Lactose Free Formulas: no milk sugar added
  
<table>
<thead>
<tr>
<th>Product</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfalac LactoFree®</td>
<td>Mead Johnson</td>
</tr>
<tr>
<td>Similac LF</td>
<td>Similac LF</td>
</tr>
</tbody>
</table>

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

- Soy Based:
  
<table>
<thead>
<tr>
<th>Product</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prosobee®</td>
<td>Mead Johnson</td>
</tr>
<tr>
<td>Isomil®</td>
<td>Ross</td>
</tr>
<tr>
<td>Alsoy®</td>
<td>Nestle</td>
</tr>
</tbody>
</table>

*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.

<table>
<thead>
<tr>
<th>Products</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow-up®</td>
<td>Nestle</td>
</tr>
<tr>
<td>Follow-up Soy</td>
<td>Nestle</td>
</tr>
<tr>
<td>Next Step®</td>
<td>Mead Johnson</td>
</tr>
<tr>
<td>Similac Advance 2</td>
<td>Ross</td>
</tr>
</tbody>
</table>
## Formula Preparation

### What form of formula products are available?

There are 3 forms of formula available in the stores:

<table>
<thead>
<tr>
<th></th>
<th>Ready-to-feed</th>
<th>Liquid Concentrate</th>
<th>Powder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mixing</strong></td>
<td>Does not need mixing</td>
<td>1 can of formula to 1 can of water</td>
<td>1 scoop of powder to 2 ounces (60ml) water</td>
</tr>
<tr>
<td><strong>Refrigeration</strong></td>
<td>Does not need to be refrigerated until opened</td>
<td>Refrigerate for 48 hours once open</td>
<td>No refrigeration needed</td>
</tr>
<tr>
<td><strong>Prepared formula</strong></td>
<td>Keep in fridge for 24 hours</td>
<td>Keep in fridge for 24 hours</td>
<td>Keep in fridge for 24 hours</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>Most expensive</td>
<td>Less expensive than ready-to-use</td>
<td>Least expensive</td>
</tr>
</tbody>
</table>

** ALWAYS READ THE LABEL ON THE CAN FOR MIXING INSTRUCTIONS **

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7  
Feeding My Baby
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 rather than replace the specific instructions of the formula you choose.

- 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.

- Before your baby goes home, learn how much and how often s/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, s/he will eat more and you will need to prepare more formula.

- Wash hands. Wash all equipment in hot, soapy water or run through dishwasher. Rinse well.

- Allow bottles to air dry. Nipples should be boiled once when first taken out of the package. It is unnecessary to boil nipples with each use as this will cause them to fall apart. Nipples can be washed well using the brush and squeezing water through the hole, followed by rinsing and air drying.

- Water used to dilute powder or concentrate must be boiled in a saucepan for 5 minutes. Always boil more water than you think you will need, as some will evaporate during boiling. Cool before mixing with formula. Tap water is okay to prepare formula with. Bottled water bought in the store would still need to be boiled before using.

- Wipe the top of the formula can; shake and open with clean can opener.

- If using **ready-to-feed** formula, pour appropriate amount into each bottle.

- If using **liquid concentrate**, pour the measured amount into each bottle and dilute with an equal amount of the cooled, boiled water. Or, pour liquid concentrate into a large sterilized measuring cup or pitcher and dilute with equal amount of cooled boiled water. Pour into bottles.

- If using **powder**, measure the number of scoops into a sterilized large measuring cup or pitcher. Add appropriate amount of cooled (but still warm) boiled water and stir well. Pour into bottles. Or, you can place powder in individual bottles and add the measured amount of water.
• Apply nipples to bottles and screw on rings. Place covers on top of nipples. Shake to mix if using powder or concentrate.

• Refrigerate for use within 24 hours.

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. **Avoid taking 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.

** Corrected age is your baby’s age starting from the day s/he should have been born.

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 unnecessary.
- 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?

<table>
<thead>
<tr>
<th>Corrected Age</th>
<th>New Food Introduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 months</td>
<td>Breast milk or iron fortified infant formula</td>
</tr>
<tr>
<td>4-6 months</td>
<td>Iron-fortified infant cereal mixed with breast milk or formula</td>
</tr>
</tbody>
</table>
| 5-7 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 between 4 to 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 s/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 s/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.
- 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.
- 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.
- Offer 1-2 ounces of boiled, cooled water 1 to 3 times per 24 hours, after feedings.

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.
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.


