Guide to Bottle Feeding

How to prepare infant formula and feed your baby safely
Considerations for feeding baby with infant formula

If for some reason, parents cannot breastfeed or have decided not to give their baby breastmilk, they can only give him infant formula in his first few months of life.

Parents should understand that once the baby is fed with infant formula, the mother’s breast will produce less breastmilk. Mother’s intention to breastfeed may be weakened too.

**Infant formula is costly.** Parents may have to spend a considerable amount of money on the infant formula in the first year (for example, a can of 900 gram infant formula costs $250 and a baby consumes 3 to 4 cans a month. That would cost the parents $9,000 to $12,000 in the first year).

**Infant formula is available in two forms:** the commercially sterile ready-to-feed liquid formula and powdered infant formula. Powdered infant formula is not a sterile product. Safe preparation of formula milk and use of properly sterilized feeding equipment is essential to protect the baby from the risk of getting infection.

Breastmilk is more than the baby’s natural food,…

Breastmilk is the ideal source of nutrients for baby’s growth and development. It also contains antibodies and living immune cells from the mother, enzymes, and other valuable substances that cannot be obtained from infant formula. These ingredients enhance the baby’s immunity and reduce the chance of being admitted to hospital because of chest infection or diarrhea. Breastmilk also helps the digestion and absorption of nutrients.

Breastfeeding is convenient, time-saving, money-saving and environmentally friendly. It enhances bonding between the mother and the baby, and makes the baby feel safe. Breastfeeding benefits mothers too. Breastfeeding mothers have less chance of anaemia and heavy bleeding after delivery. It burns calories and helps the uterus return to normal size, so breastfeeding mothers get back in shape more quickly. Breastfeeding also protects mothers from ovarian and breast cancer.
Content

What is infant formula? P.3
How to choose a suitable infant formula? P.3
What equipment is needed for bottle feeding? P.6
How to choose feeding bottles and teats? P.7
How to clean, sterilize and store feeding equipment? P.8
How to prepare an infant formula feed safely? P.11
How to store a prepared infant formula feed? P.14
How to re-warm a feed? P.14
When should I feed my baby? P.16
How to feed the baby? P.17
How to burp the baby? P.19
What should I do if the baby spits up after feeding? P.19
How much milk a baby needs in a day? P.20
Is my baby getting enough to eat? P.21
What is infant formula?

- Most of the infant formulae are made from cow’s milk that has been treated to make it suitable for babies. There are also infant formulae made from goat’s milk or soy protein.
- The nutritional compositions of infant formulae must meet the standards of the Codex Alimentarius Commission, and provide the nutrients for babies below 12 months old.\(^1\)

How to choose a suitable infant formula?

- Cow’s milk-based infant formulae, often called “Stage 1 formulae”, are suitable for the healthy babies from birth.
- Soy-based infant formulae can be used when the baby has galactosaemia or when he cannot have formulae made from cow’s milk for cultural or religious reasons.
- Nutritional composition of infant formulae are similar. You can make your decision according to the market supply or personal choice. If needed, you can ask your doctor or nurse for advice. In general, switching to another brand should not affect the baby’s health.
- Premature infants and infants with weakened immune systems are more vulnerable to bacterial infections. Where possible, the sterile ready-to-feed liquid infant formulae should be chosen.\(^2\)

Unless advised by a doctor, babies under 6 months should only be given infant formula.

After 6 months, they can continue with infant formula. After 12 months old, they can start to drink full fat cow’s milk.

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\(^1\) Nutritional composition of infant formula sold in Hong Kong is under the legislative regulation. It should provide nutrition label showing the energy and nutrient contents. Visit the webpage of the Centre of Food Safety for details.

\(^2\) Centre for Food Safety, Department of Food and Hygiene. Food Safety Focus (28th Issue, November 2008).
Q. Is there any infant formula that reduces the baby’s risk of getting allergy?

- Breastfeeding is the best way of protecting the babies from developing allergy.
- No infant formula products have been shown having a significant effect in preventing healthy babies from developing allergy. If there is a family member suffering from allergy, it is best to breastfeed your baby. Ask your doctor for advice if you consider feeding your baby infant formula.

Q. What are the choices of infant formula for infants with cow’s milk allergy?

- Consult your doctor if you worry your baby is allergic to cow’s milk. For infants who are diagnosed with cow’s milk protein allergy, doctors may prescribe hypoallergenic infant formula, such as extensively hydrolyzed formula and amino acid formula. It is important to follow doctors’ instructions on choice of products.
- Soy-based formulae or goat’s milk formulae are not suitable for babies with cow’s milk allergy because these babies may also be allergic to soy or goat’s milk.

Q. My baby passes hard stools. Is it related to the infant formula?

- General speaking, it is not common for babies to have constipation in the first six months of age. However, constipation may occur temporarily when they switch from breast milk to infant formula or switch to a new brand of formula. Besides, babies may be constipated if the infant formula is not prepared correctly and less water is added. Check the instructions on the formula package. Make sure the correct amount of water and powdered infant formula are used in making up a feed. Always put water into the feeding bottle first and then add the formula powder. If needed, you can give your baby a small amount of water in between meals.
Q. How do I help my baby switch to another brand of infant formula?

- There is no specific rule on how to switch infant formula brands. If your baby accepts new taste quite easily, parents can simply switch to the new brand in one go. Alternatively, you may increase the number of feeds of the new brand gradually.
- You should not mix two or more brands of milk powder when preparing one feed.
- On switching to another formula brand, you may notice a change in your baby’s stool. This is usually due to a subtle difference in composition of ingredients amongst different brands, and does not affect the baby’s health.

<Follow-on formula> is not suitable for babies under 6 months

Follow-on formula (that is “Stage 2” or “Stage 3 formula”) contains much more protein. The excess protein may overload the immature kidneys of newborn babies and may lead to dehydration, diarrhea or damage to the brain.

Types of milk to avoid in babies under one year old:

- Goats’milk
- Soymilk
- Evaporated milk
- Condensed milk
- Full fat milk or low fat milk
What equipment is needed for bottle feeding?

- Sterilizing equipment (such as a large pot, electric or microwave steam sterilizer)
- Feeding bottles and teats of appropriate size and material
- Bottle brush and teat brush
- Tongs for picking up feeding bottles and teats after sterilizing
How to choose feeding bottles and teats?

**Choosing feeding bottles**

- Use glass bottles or plastic bottles that are bisphenol A (BPA) free.
- The colours of the decorations and markings on the bottles should not chip off easily and should be harmless.
- The bottles are clear with easy to read marking on the side. The inner part of bottles is easily visible.
- They should be easy to clean.
- The bottle sizes should be appropriate.

**Choosing teats**

- The size of the teats should be appropriate for the age of the baby.
- The shape and material of the teat generally do not make a difference in feeding. Latex teats are soft and flexible. Silicone teats are more durable and can stay in shape longer.
- The hole of the teat should be in an appropriate size that the milk will drip at a rate of about one drop per second when the bottle is tilted. If the hole is too small, the baby may get tired from sucking. If it is too big, the baby may choke on the milk because the formula comes out too fast.

- Use bottles and teats which comply with the safety standards (such as the European standard EN 14350). Check that the bottles are bisphenol A (BPA) free.
- Replace the bottles when the markings are blur.
- Throw away broken or damaged bottles and teats.
How to clean feeding equipment?

All feeding equipment for breastmilk or infant formula must be washed thoroughly and sterilized. They include feeding bottles, teats, bottle covers, rings, and other accessories such as tongs and knives.

1. How to clean feeding equipment

- Before cleaning feeding equipment, wash your hands with soap and water. Clean the work surface with hot soapy water.

- Wash feeding bottles, teats and tongs in warm soapy water immediately after feeding by using a clean bottle brush. Ensure that there are no remains of milk left inside. Then rinse the equipment thoroughly in running water.

Bacteria grow at the cracks easily. Check carefully when washing bottles and teats. Discard damaged ones.
2 Sterilizing the feeding equipment

You can choose from the following methods for sterilizing the feeding equipment:

1. Sterilizing by boiling
   - Make sure the equipment can be boiled.
   - Put the cleaned equipment into a large pot. Cover all items with water and make sure no air bubble is trapped.
   - Place the lid on the pot. Boil the feeding equipment for 10 minutes. Then turn off the heat and leave the water to cool.
   - Keep the pot covered until the feeding equipment is needed.

2. Steam sterilizing using electric or microwave sterilizer
   - Follow the manufacturer’s instructions carefully.
   - Make sure that the openings of the bottles and teats face downwards in the sterilizer.
   - Remove the feeding equipment only when you are going to prepare a feed.
   - If the sterilizer has been opened, the content requires to be sterilized again.

* If remove the equipment from the sterilizer before it is needed, please refer to P.10 Storing the sterilized feeding equipment
3. Using chemical sterilizing solution

- Follow the manufacturer’s instructions for sterilization and changing the sterilizing solution. For most products, change the solution every 24 hours.
- Put the feeding equipment into the sterilizing solution. Make sure no air bubbles are trapped inside the bottles and teats. Place a floating cover over the equipment to keep all items in the sterilizing solution.
- Leave all items in the sterilizing solution for at least 30 minutes.

Place a floating cover over the equipment to ensure all items are totally immersed in the sterilizing solution.

3 Storing the sterilized feeding equipment

- To prevent recontamination, it is best to remove the feeding equipment just before it is needed.
- Before removing the equipment from the sterilizer, wash your hands thoroughly with soap and water, and then dry them with a clean towel. (Please refer to the leaflet “Hand Hygiene --- an easy and effective way to prevent infections”.)
- If the sterilized feeding bottles and other equipment are not used straightaway, remove them with sterilized tongs and put the teats and caps back to the bottles. Store everything in a cleaned and covered container.
How to prepare an infant formula feed safely?

Follow these steps:

1. **Boil the water**
   Boil the fresh tap water or distilled water. If you use electric kettle, water should be boiled until the electric supply of the kettle switches off.

2. **Clean the surface for preparing the feed and wash your hands**
   Clean and disinfect the surface on which you are going to make up the infant formula feed. Wash your hands with soap and water, and dry them with a clean towel or tissue paper.

3. **Take out the sterilized bottle**
   Take a sterilized bottle and shake off the water in the bottle and the teat. If the bottle is removed from the sterilizing solution, shake off the excess solution and rinse it with boiled water from the kettle.

**Bottled water**
- Mineral water contains high levels of salt. It should not be used for feeding babies.
- If bottled distilled water is used, boil it before making up infant formula feeds.
Read the instructions on the package of the infant formula. Measure the amount of water and milk powder accurately. Prepare infant formula feeds with correct method. Make up a fresh bottle of formula each time your baby needs a feed. These practices help reducing the risk of infections in your baby.

4. Fill the feeding bottle with the correct amount of hot water
Put the correct amount of hot water into the sterilized bottle. The water should be no cooler than 70ºC, so do not leave water cool down for more than 30 minutes after boiling.

5. Add the correct amount of powdered infant formula
Measure the correct amount of formula powder according to the instructions on the package. Add the exact amount of powdered formula to the water in the bottle.

Measure the formula powder with the scoop coming with the package or can. Fill the scoop with formula powder loosely. Then level off with the straight edge of a knife.

Key facts

- Make up infant formula feeds with hot water of temperature no less than 70ºC. This kills harmful bacteria which may be present in the powdered infant formula. Water will remain at 70ºC or above within 30 minutes after boiling.³

6. **Gently shake the bottle**

Attach the teat, cap and other accessories to the bottle. Shake/swirl until the powder dissolves.

7. **Cool the feed**

Cool the feed to an appropriate temperature by holding the bottle under running tap water or placing the bottle in a container of cold water. Ensure the cooling water is below the cap and does not touch the teat.

8. **Test the temperature**

To prevent scalding of the baby’s mouth, test the temperature of the formula feed on the inner side of your wrist before feeding. Repeat cooling until the feed is lukewarm.

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**Key facts**

- Consume the prepared formula feed within 2 hours to reduce the risk of infection.
How to store a prepared infant formula feed?

- It is best to make up a fresh feed each time your baby needs one, and to consume it immediately.
- If you have to make up a feed in advance, cool the feed immediately after it is prepared and store it in the fridge at temperature of 4°C or below.
- Throw away the refrigerated feeds if they are not used within 24 hours.

How to re-warm a feed?

- Rewarm a refrigerated feed no more than 15 minutes. Rewarm the feed by placing the bottle in a container of warm water. Make sure the water level does not touch the cap or the teat. Swirl the bottle occasionally to ensure the milk warms up evenly.
- Follow the manufacturer’s instructions if you use a bottle warmer.
- Never re-warm leftover feeds.

Key facts

- A formula feed should be consumed within 2 hours of re-warming. Throw it away if it is not consumed within that time.
- Never use a microwave oven to re-warm refrigerated formula feeds. Microwave heats the feeds unevenly. This can scald the baby.
Q. How can I prepare formula feed away from home?

- If you need to feed your baby away from home, you can choose sterile ready-to-feed liquid infant formula. If you choose to make up feed with powdered infant formula away from home, pay special attention to the procedures and ensure all feeding equipment are sterilized.

- As sterilization needs time, parents are advised to prepare in advance to sterilize feeding bottles and containers. Before going out, place the powdered infant formula in a dry container. Pour the water that has just been boiled into a vacuum flask and screw the cap tightly. This help keeping the temperature of water at 70°C or above for making up a formula feed.

Q. Is it OK to prepare the formula feed first before we go out?

- It is the safest to give your baby a freshly prepared feed every time. Make up a fresh feed as your baby needs it. If you have to carry a pre-prepared feed along, cool the feed immediately after it is made up and refrigerate it at temperature of 4°C or below. Shortly before you leaving home, put the prepared feed in a cool bag with an ice pack for delivery. Remember the made-up formula taken out from the fridge must be consumed within two hours.
When should I feed my baby?

Babies show hunger and fullness cues regardless they are breastfed or bottle fed.

- When hungry, your baby will have the behaviour of searching milk.
- Feed your baby when you notice these early hunger cues:
  - Wakes up and moves
  - Licks the lips
  - Turns his head to search with an open mouth
  - Sucks his hand or fist

- Crying and fussiness are usually late hunger cues. The babies are “very hungry” by that time. However, a baby may cry for other reasons.

- Feeding is a time for you and your baby to bond closely. Hold your baby skin-to-skin during feeding. This makes him feel calm, safe and warm.
- When you are unable to feed the baby yourself, get opportunities to cradle him and attend to him in other daily routines. This also helps your baby bond with you.
How to feed the baby?

Relax yourself. Feeding is a special moment when you and your baby can bond with each other. While you are feeding the baby, maintain eye contact and talk to her softly.

Feeding the baby

1. Wash your hands before you feed the baby. Put the bib on her. Get yourself into a comfortable position and a seat with arm support.

2. Hold your baby close to you with her head higher than the rest of the body. Babies are usually more comfortable with breathing and swallowing in this slightly upright posture.

3. Let your baby see the feeding bottle. Gently touch her lips with the teat. She will react and open her mouth, then you place the teat inside.

4. Tilt the bottle. Keep the teat full of milk during feeding, so that your baby does not swallow too much air.

5. When your baby stops or slows her sucking, partially move the teat out. If the baby still wants feeding, she will draw it in again. Take a break to burp your baby if she releases the teat. Offer the bottle again after burping. Stop feeding if she shows fullness cues.
Observe baby during feeding:

- Learn the fullness cues of your baby. Let her decide how much to have at each feeding. Stop feeding when your baby shows signs of being full, such as if the baby:
  - closes the mouth
  - sucking slows down or stops sucking
  - lets go the teat
  - pushes away the feeding bottle
  - arches her back and turns head away
  - relaxes the body and sleep

- Observe the baby breathing and her effort in sucking. Babies need a lot of effort to suck if the hole of teat is too small. Check the teat size if needed. Consult your doctor if you have doubt.

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**Important Notes**

- Do not add or mix any food or medicines into the infant formula to feed your baby.
- Do not force your baby to drink all the formula. Throw away the left-over formula milk.
- During feeding, avoid striking the bottle, or tickling her mouth with the teat. This makes her uncomfortable.
- Never prop up the bottle or leave your baby alone during a feeding. This puts her at risk of choking and suffocation.
- Do not let your baby sleep with the bottle. This may cause tooth decay and result in poor sleeping habit.
How to burp the baby?

Burp your baby after feeding to expel the air he has swallowed during feeding.

- Burp your baby after feeding or when he takes a short break during the feed
- You can burp him in the following ways:
  - Hold your baby upright on your shoulder. Gently pat or rub his back.
  - Sit him on your lap. Support his head and chest.

What should I do if the baby spits up after feeding?

Many newborn babies spit up a little after feeding, during burping, or when lying down because their digestive tracts are immature.

The following helps decrease these spitting episodes:

- Feed your baby when he shows early hunger cues, such as licking the lips, opening the mouth, or putting the hand into mouth. This helps him stay calm and swallow less air during feeding.
- Make sure the teat is filled with milk when feeding.
- Avoid overfeeding. Stop feeding when the baby shows cues of getting full.
- After feeding or burping, keep your baby in an upright position for 10 to 20 minutes. You can either hold him or sit him on your lap.
- If spitting does not improve, consult your doctor.
How much milk a baby needs in a day?

Babies adjust the amount of milk they take to meet their needs for growth and development. Their appetite changes from day to day. Let baby guide you when and how much he needs.

- Every baby is unique. Some babies need small frequent feedings, while some need to be fed less frequently but take more milk each time.
- On the first few days after birth, babies take only small amount of infant formula at a time as their stomach is quite small. They need to be fed every 2 to 3 hours as they wake up. In the following few weeks, they may take around 60 to 90 ml every 3 to 4 hours. Sometimes they may need to be fed more frequently too, so follow their feeding cues.
- One to two months old babies usually settle into their own regular feeding patterns. From the age of two to six months, some babies adjust to a regular night and day pattern. They sleep for 5 to 6 hours at night and consume a greater quantity when they wake up in the early morning.
- The amount of formula milk needed daily varies from baby to baby. Here is a reference for healthy babies in the first few months:

<table>
<thead>
<tr>
<th>Age</th>
<th>Daily consumption of formula milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>About 550 – 970 ml</td>
</tr>
<tr>
<td>2 to 5 months</td>
<td>About 630 – 1110 ml</td>
</tr>
</tbody>
</table>

- Babies know how much they need for their growth and body needs. Some babies may have a big appetite for a few days and eat less in the following days. If they are playful and gaining weight well, a change in appetite should not cause a concern.
- Do not try to make him finish the bottle. Babies’ appetite changes from day to day. Follow his cues and let him decide how much he needs.

Is my baby getting enough to eat?

Your baby is well fed when he has the following signs:

**Wet nappies:**
- Have 1 to 2 wet nappies each day on the first two days after birth.
- Have at least 3 wet nappies each day on the 3rd and 4th days.
- From the 5th day onwards, have at least 5 to 6 heavy nappies (about weight of 3 tablespoons of water in each nappy) and the urine is transparent or pale yellow.

**Baby’s stools:**
- Changes from passing meconium to yellowish stool in the first 5 days.
- Texture changes from loose, pasty, to seedy gradually.

**Baby’s weight:**
- In the first few days after birth, it is normal for your baby to lose a bit of weight.
- By the first to second week, your baby regains birth weight and then puts on weight steadily.
- In the first 4 months, your baby gains at least 0.5 kg each month.
If you have any queries concerning bottle feeding, please consult your doctor or nurse.

For more health information, please visit the Family Health Service webpage: www.fhs.gov.hk
or call the 24-hour Health Information Hotline: 2112 9900.
Key Points for Bottle Feeding

World Health Organization recommends that babies should be exclusively breastfed in the first six months. At about six months old, babies should be given nutritious solid foods and continue breastfeeding up to the age of two years or above. If parents cannot or have chosen not to breastfeed their baby, feeding the baby with infant formula is the only alternative during their first few months.

Choosing the Infant Formula
- Infant formula ("Stage 1 formula") is suitable for newborns and babies below 12 months of age.
- Follow-on formula ("Stage 2 formula") is not suitable for infants below 6 months of age. Switching to follow-on formula is not necessary after 6 months old.

Preparing the Infant Formula Feed
- Feeding bottles, teats and other equipment must be cleaned and sterilized.
- Measure the amount of water and powdered infant formula accurately according to the instructions on the package when making up the feed.
- Put the water in the bottle before adding the powdered infant formula. The temperature of water must be at 70°C or above.
- Offer freshly prepared infant formula feeds to babies. The formula feed should be consumed within 2 hours after being prepared.

Feeding the baby
- Test the milk temperature.
- Support the baby in a slightly upright posture and hold him during feeding.
- Feed the baby according to his feeding cues. Do not force him to feed.
- Discard any left-over milk.