

Managing feeds for babies who are formula fed

Key Points

- Parents who feed with artificial formula should be offered appropriate and tailored advice on safe feeding.^{1,2,3} The staff should respect the physical, personal and cultural factors affecting infant feeding choices and will support and assist the women in their chosen method of feeding. ^{2,4,5}
- All written information related to formula feeding must include a statement similar to the one below to adhere to the WHO Code of Marketing for Breast-Milk Substitutes.
- Guidance and support for formula feeding families should include information on responsive bottle feeding and promotion of a close and loving relationship.

Version: 3.0

Date Issued: 31 July 2024

Review Date: July 2027

Key words: Baby, formula feed, artificial

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Abbreviations

LBW	Low birth weight
SGA	Small for gestational age

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1. Introduction

It is important that parents who feed with artificial formula should be offered appropriate and tailored advice on safe feeding.^{1,2,3} The staff should respect the physical, personal and cultural factors affecting infant feeding choices and will support and assist the women in their chosen method of feeding.^{2,4,5} Parents who decide to give their baby artificial milk require individual advice on how to make up feeds safely and how to feed their baby.^{1,2,3}

Written information on formula milks and how to formula feed is best provided in the early postnatal period when mothers have made a definite decision to formula feed. All such information should be accurate and effective. The tone and content should be mother friendly and accessible to mothers of varying reading abilities. All written information related to formula feeding must include a statement similar to the one below to adhere to the WHO Code of Marketing for Breast-milk Substitutes⁸:

Breastfeeding is the healthiest way to feed your baby. If you decide not to breastfeed or to stop breastfeeding, it is possible to restart. Giving infant formula to a breastfed baby will reduce your milk supply.

You do not need to eat any special foods while breastfeeding, but it is a good idea for you, just like everyone else, to eat a healthy diet.⁹

Appropriate care during the early postnatal period is vital. Skin-to-skin provides an optimal environment for fetal-neonatal adaptation after birth and early feeding. It can help to maintain body temperature and adequate blood glucose levels in healthy infants, as well as providing an ideal opportunity to establish early bonding behaviour.⁶

Assistance and support will be offered with the first and subsequent feeds. The mother should be the person to offer the first feed to the baby and she should be encouraged to offer this first feed in skin-to-skin contact. Vigilance of the baby's well-being during the first feed should be maintained as there will be less of the baby's body in close contact with the mother's compared to when feeding from the breast.²

The mother should be offered information on how to sterilise the equipment needed for bottle feeding and how to make up a bottle feed safely.⁵

The parents should be aware of the amount of feed to offer the baby appropriate to the age of the baby. All parents requiring further information on infant formula should be directed to the First Steps Nutrition Trust for independent, evidenced based support.⁶

Parents should be informed that their baby will require only 'newborn' or 'first milk' throughout the first year of life, alongside the introduction of food from six months. There is no need for follow-on formula when the baby is six months old.

There is no evidence that other 'special' milks, aimed to help hungry babies, prevent colic, wind, reflux or allergies, are of any benefit. Parents should be asked to seek advice from their midwife or health visitor if they are concerned their baby requires specific milk.

Rarely, infants who are artificially fed may experience problems and in these instances the mother needs to receive the appropriate support in order to ensure that the baby remains well.

2. General guidance and responsive bottle feeding⁷

The parents should be encouraged to be the main carers for the baby. Inform parents that babies will feel more secure if most feeds are given by mum or partner. Keeping the baby close, enjoying skin contact and encouraging paced bottle feeding will promote the loving and responsive relationship between parents and their babies.

How to make up a feed

A demonstration of how to make up a feed should be offered to all bottle feeding parents; if it is declined, there should be documentation of a discussion and leaflet given on Epic. It is advised that a fresh bottle needs to be made up for each feed.

Step 1 - Fill the kettle with at least 1 litre of fresh cold tap water

Step 2 - Boil the kettle and leave for no longer than 30minutes, the temperature of the water should be at least 70 degrees Celsius.

Step 3 - Clean and disinfect the surface areas where the bottle is being prepared and wash hands

Step 4 - Get the bottle ready for assembly without touching the teat.

Step 5 - Follow the manufacturer's instructions on ratio of water to powder, add the correct amount of water to the bottle first, measuring at eye level.

Step 6 - Loosely fill the scoop with the powdered milk, levelling it off with the box leveller or the back edge of a clean knife, add the correct amount of scoops.

Step 7 - Put the teat and cap on without contaminating the teat and swirl/shake the bottle until the powder is completely dissolved.

Step 8 - It is important to cool the milk before feeding to baby; hold the bottle under running cold water to cool it. Check the temp on the inside of your wrist before feeding, it should feel warm/cool not hot.

Step 9 - Feed baby using the paced method as below.

Step 10- Discard any left over milk after the feed. A made up feed needs to be used within 1 hour if not fed from; once fed from, it will need to be discarded immediately.

Paced bottle feeding

Teach parents to hold the baby close, in a semi-upright position and to make eye contact to reassure the baby throughout the feed. Babies should be offered small volume feeds frequently in response to their feeding cues. Guidance on calculating the volume of feed is displayed on the postnatal ward (see Appendix 1). Encourage parents to invite the baby to open their mouth by softly rubbing the teat against the top lip. Show parents how to gently insert the teat, keeping the bottle in a horizontal position (just slightly tipped) to prevent milk flowing too fast. The baby must not be force fed, but allowed to pace him or herself during the feed. Teach parents to watch for cues that their baby is full or needs a break, to prevent overfeeding such as turning their head, splaying the fingers and toes. A thorough discussion regarding responsive feeding with the parents needs to be documented on Epic under the infant feeding tab PN conversations.

Possible problems experienced and action to be taken

Cleft lip/palate

For babies born with cleft lip and/or palate, refer to paediatric registrar and urgent referral to the specialist cleft lip and palate nurse.

Tongue-tie

The baby may be unable to consistently grasp the teat and therefore fail to take the required volume of milk, leading to poor weight gain. Observe a feed and consider using a different teat. Refer to the infant feeding specialist, the paediatrician or general practitioner (GP) for review and possible division of tongue-tie. Parents should be made aware that they can attend the breastfeeding clinic for further review of the tongue-tie and feeding.

Teat aversion, not sucking / slow to feed

A change of teat may assist the baby. Show the mother how to hold her baby and the bottle during feeding. The baby must not be force fed. If problems persist, refer for paediatric or GP review to exclude underlying problem(s).

Monitoring of weight loss from birth/ slow weight gain

Weight loss of $\geq 10\%$ is unusual in an artificially fed baby. Where there is concern about weight loss, the midwife should observe a bottle feed with the mother/parents. Method of feeding should be discussed with the parents and referral to the paediatrician should be made if there is no obvious reason for the weight loss or if concerned.

The amount of feed taken by the baby should be calculated per feed appropriate to the age of the baby and over a 24 hour period. See flowchart on the calculation of volume of feed required (Appendix 1). Once home, refer parents to feeding instructions on the formula packaging.

Persistent vomiting

This should be differentiated from small possets following a feed. If the baby is clinically unwell, refer at the earliest opportunity to the paediatrician or GP for review.

If infant is clinically well, observe a feed and offer assistance to the mother. Consider using a different teat.

Minor colour changes on feeding (pale or blue)

The midwife should review the baby during a feed; reassure the parent if it is diagnosed as 'wind' or refer to the paediatrician or GP as appropriate. Consider a set of saturations and observations if concerns.

Gagging and choking on feeding

Offer assistance to the parents with feeding and examine the mouth for any abnormalities. Consider using a different teat. Reiterate paced feeding.

Please note this list is not exhaustive. The mother should always be involved in the assessment of her infant's feeding. This guideline should be regarded as the minimum standard of care. Specialist advice is available from the infant feeding advisors and the advanced neonatal nurse practitioner on the Neonatal Unit (NNU).

3. Auditable standards

System for reporting newborns re-admitted to hospital with feeding problems during the first 28 days of life

4. Monitoring

This guideline will be monitored through incident reporting for neonatal re-admissions.

5. Communication

If there are communication issues (eg English as a second language, learning difficulties, blindness/partial sightedness, deafness) staff will take appropriate measures to ensure the patient (and her partner, if appropriate) understand the actions and rationale behind them.

6. Equality Impact Assessment

This guideline has been subject to an equality impact assessment.

7. References

1. National Health Service [NHS] (2021) *Bottle feeding advice*. Available at: <https://www.nhs.uk/conditions/baby/breastfeeding-and-bottle-feeding/bottle-feeding/advice/> (Accessed: 02 January 2024).
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2. UNICEF (2017) *Guide to the UNICEF UK Baby Friendly Initiative Standards*. Available at: <https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/implementing-standards-resources/guide-to-the-standards/> (Accessed: 02 January 2024)
3. UNICEF (2022) *Guide to bottle feeding*. Available at: <https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/bottle-feeding-resources/guide-to-bottle-feeding/> (Accessed: 02 January 2024).
4. UNICEF (no date) *Having meaningful conversations with mothers: A guide to using the Baby Friendly signature sheets*. Available at: <https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/implementing-standards-resources/guidance-for-antenatal-and-postnatal-conversations/> (Accessed: 02 January 2024)
5. Frimley Health NHS Foundation Trust (2021) *Skin to Skin Contact and Initiating a Close Relationship for Mothers and Babies in Hospital*. Available at: https://guidelines.fhft.nhs.uk/Obstetrics_and_Gynaecology-Postnatal_Neonatal_Care_and_Infant_Feeding-Skin_to_Skin_Contact_and_Initiating_a_Close_Relationship_for_Mothers_and_Babies_in_Hospital (Accessed: 02 January 2024)
6. First Steps Nutrition Trust (2021) *A simple guide to infant formula, follow-on formula and other infant milks*. Available at: <https://www.firststepsnutrition.org/parents-carers> (Accessed: 02 January 2024).
7. UNICEF (2019) *Infant formula and responsive bottle feeding*. Available at: <https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/bottle-feeding-resources/infant-formula-responsive-bottle-feeding-guide-for-parents/> (Accessed: 02 January 2024).
8. World Health Organisation (1981) *International Code of Marketing of Breast-Milk Substitutes*. Available at: <https://www.who.int/publications/i/item/9241541601> (Accessed: 02 January 2024)
9. UNICEF (2014) *Guidelines on providing information for parents about formula feeding*. Available at: <https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/implementing-standards-resources/providing-information-for-parents-formula-feeding/> (Accessed: 02 January 2024).

Appendix: Calculations of volume of feeds for LBW infants, preterm infants, SGA infants and term formula fed infants.

N.B. This excludes the term healthy breastfed infant who is reluctant to breastfeed.

For ALL babies, assess for:

- Colour
- Tone
- Alertness
- Maintenance of temperature
- General well-being

LBW infants, preterm infants, SGA infants, term formula fed infants

Day 0 60ml/kg/day

Day 1 90ml/kg/day

Day 2 120ml/kg/day

Day 3 150ml/kg/day

Calculation

Volume x BW in kg , number of feeds over 24 hrs

Example: 90ml x 3.237, 8 (3 hourly feeding) = 36.4ml

Example: 120ml x 3.900, 6 (4 hourly feeding) = 78ml

The volume calculated is **an average volume** – some infants will take more, some less.

Always assess each individual infant and observe for clinical signs of well-being.

Monitor urinary output and frequency and colour of bowel movements.

Full version control record

Version:	3.0
Guidelines Lead(s):	Hannah Holland, Infant Feeding Joint Lead Midwife, FPH; Fiona Lewis, Infant Feeding Joint Lead Midwife, FPH
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Lead Director / Chief of Service:	Anne Deans, Chief of Service for Obstetrics and Gynaecology
Library check completed:	2 January 2024
Ratified at:	Cross Site Obstetrics Clinical Governance Meeting, 30 July 2024
Date Issued:	31 July 2024
Review Date:	July 2027
Pharmaceutical dosing advice and formulary compliance checked by:	Chido Mukoko, Lead Pharmacist for Women and Children (FPH), 14.05.2024
Key words:	Baby, formula feed, artificial

This guideline has been registered with the Trust. However, clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt, contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

This guideline is for use in Frimley Health NHS Foundation Trust hospitals only. Any use outside this location will not be supported by the Trust and will be at the risk of the individual using it.

Version History

Version	Date	Guideline Lead(s)	Status	Comment
1.0	March 2017	I Ringers, Infant Feeding Lead Midwife, FPH	Final	Joint guideline development
2.0	June 2020	E Farrant, Infant Feeding Lead Midwife, FPH	Final	
3.0	July 2024	Hannah Holland, Infant Feeding Joint Lead Midwife, FPH; Fiona Lewis, Infant Feeding Joint Lead Midwife, FPH	Final	Schedule review. Ratified at Cross Site Obstetrics Clinical Governance Meeting, 30 July 2024

Related Documents

Document Type	Document Name
Guideline	Skin to Skin Contact and Initiating a Close Relationship for Mothers and Babies in Hospital