

INFANT FEEDING: 0 - 12 MONTHS - FORMULA FEEDING AND INTRODUCTION OF SOLIDS PRACTICE GUIDELINE[®]

DOCUMENT SUMMARY/KEY POINTS

- This document contains details on issues concerning infant feeding. Details covered include:
 - Formula (bottle) feeding
 - Introduction of solids to an infant

A few points worth noting:

- Every ward where infants are nursed should have a refrigerator specifically for the storage of formula. The temperature of the refrigerator should not exceed 4°C^{1, 2}.
- If a baby who is normally breast fed requires infant formula, **written permission** should be sought from the breastfeeding mother, recorded on the [Consent for Formula/Complementary, Supplementary feeds](#) and placed in the infant's medical record.
- It is not recommended to prepare infant formula on the ward. Infant formula should be ready-to-feed ward stock, or preparation should happen via the Formula Room, except in exceptional circumstances. In such circumstances, staff must follow the guidelines set out in this document.
- **There are a variety of staff who are resources for issues regarding infant feeding. They are**
 - **At CHW:** Child and Family Health CNC, Speech Pathologists, Dietitians and Lactation Specialists
 - **At SCH:** Ward Feeding Champions, Dietitians or Speech Pathologists.

Note: For breastfeeding information, refer to **SCHN Infant Feeding: Breastfeeding Practice Guideline**.

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

Approved by:	SCHN Policy, Procedure and Guideline Committee	
Date Effective:	1 st April 2021	Review Period: 3 years
Team Leader:	Clinical Nurse Consultant	Area/Dept: Child & Family Health

CHANGE SUMMARY

- Appendix A (Teats and specialised bottles Information Guide) has been removed.
- Changes have been made to this document as per the National Health and Medical Research Council Infant feeding Guidelines 2012.
- The order of the document has been changed for improve flow and readability.
- A section has been added for positioning for solids.
- Additional advice has been included on managing bottle feeding.
- Information on hospital stock of specialised or alternative formulas has been updated to reflect current practices.
- Information for cow's milk allergy added with links to guides.
- The reference list has been updated.

READ ACKNOWLEDGEMENT

- This document is relevant for any NSW Health staff members who care for formula feeding babies and their mothers, or who may be called on to do so.
- It is also relevant for any NSW Health staff members who care for babies who are starting to consume food other than infant formula or who may be called on to do so.
- The above mentioned staff should read and acknowledge this document.

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

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Introduction

Health Professionals in the Sydney Children's Hospital Network (SCHN) are committed to providing and supporting optimal health care to promote normal growth and development in all infants. This document relates to feeding an infant aged from birth to one year during hospitalisation.

For further information and support, please contact the following staff – Child & Family Health Clinical Nurse Consultant, Ward Feeding Champions (SCH), Lactation Specialists (CHW), Speech Pathologists and Dietitians via the hospital switchboard.

1 Growth and Development

Bare weight, length and head circumference should be assessed on admission and at regular intervals as dictated by the infant's medical condition during the hospital stay and recorded on growth charts in EMR in PowerChart. The use of the World Health Organisation 2006 growth charts⁸ is recommended for infants and children from birth – 24 months and the CDC 2000 growth curves⁹ for children 2-18 years. Parents or Health Professionals should continue to plot growth and development in the Personal Health Record Book (PHR / blue book) after discharge.

2 General Principles of Infant Feeding

- Staff members should encourage and support breastfeeding.
- If infants are formula fed, mothers should be aware of their options and supported in their choice.
- The chosen formula should meet the standards for quality, composition and labelling as regulated through Standard 2.9.1 of the Australian and New Zealand Food Standards Code^{4, 4a, 4b}. All formulas used in SCHN meet these standards.
- Feeding should be encouraged on demand, both day and night, unless there is a valid reason to do otherwise.
- Demand feeding is preferred when breast milk or formula is the predominant food (i.e. for infants less than 6 months). An infant's intake is normally guided by their appetite, if there is no medical reason to alter frequency or volume of feeds.
- For the first six months of life, breast milk or infant formula provides adequate nutrition. The World Health Organisation³ recommends exclusive breastfeeding for the first six months. Australia supports this recommendation as indicated in the 2013 NHMRC guidelines^{1,2}.
- If a baby who is normally breast fed requires infant formula, written permission should be sought from the breastfeeding mother, recorded on the [Consent for](#)

Formula/Complimentary, Supplementary feeds, and placed in the infant's medical record.

- When additives are used to fortify breast milk feeds then written consent is also required and the **Consent for Formula/Complimentary, Supplementary** feeds form should be filled in and signed and stored in the infant's medical records.
- When appropriate, if a mother has decreased milk supply, is unable to breastfeed or provide expressed breast milk, lactation advice should be provided by ward nursing staff and/or lactation team as required.
- After weaning from breast milk, infant formula is recommended as the main drink until one year of age^{1,2}
- If an infant is known to have a food allergy, and requires infant formula for the first time, a review by a doctor or dietitian is required to determine the most appropriate formula for that infant. On the rare occasion that the infant has an allergic reaction to the infant formula they are given for the first time, stop giving the formula and seek a medical review. Fruit juice and tea (including herbal teas) are not necessary or recommended for infants. Breast milk, formula or water is recommended for infants over 6 months.
- Using a microwave is not recommended for heating infant formula¹.

3 Mode of Feeding

Standard modes of feeding (oral method):

- Standard infant bottles
- Cup (straw, spout, open)

Alternative modes of feeding:

- Enteral feeding such as nasogastric tube/orogastric/transpyloric tube, gastrostomy/jejunostomy
- Specialised bottle feeding systems (e.g. Pigeon Cleft Palate squeeze bottle, Medela Special Needs Feeder). Note these systems are for use in specific patient populations and require assessment by a Speech Pathologist prior to implementation

3.1 Bottle Teat Selection

- Many different teats are available for bottle feeding – it is important to choose a teat based on the infant or child's needs and abilities
- It should be encouraged that infants use their usual feeding equipment from home during their admission in the first instance, as appropriate.
- Teat choice will depend on the infant's needs and abilities. Teat size, shape, material, and flow rate should be considered.

- If a child is presenting with difficulties bottle feeding, referral for further assessment should be made to Speech Pathology.

For more information contact the Speech Pathology Department.

4 Managing Bottle Feeding

When bottle feeding, infants should be held in a similar manner to a breast fed baby. Intake volume should be guided by the baby's cues of engagement and disengagement during feeding. The infant should be fed when he/she shows signs of hunger, or according to medical need. It is important to support and encourage parents with feeding their infant whilst in hospital.

4.1 Preparing the bottle for feeding in ward

- Wash hands thoroughly, ensure the bench is clean and put together the bottle.
- Gloves should be worn when handling sterilised teats, and during bottle/teat assembly.
- Use a teat which is suited to the infant's sucking and swallowing ability.
- Check that the correct formula is selected and that feed is labelled with the correct infant's name and date (if applicable).
- Safely warm the bottle of milk in a container of hot water in the ward kitchen. Bottle warming devices can be used where available.
- Check milk temperature by dripping some milk from the teat onto your skin on the inside of your wrist. It should feel warm, not hot.
- Never use the microwave to heat milk as the milk temperature is uneven and may cause scalding¹.
- If feasible, the use of 'ready to drink' infant formula can be considered in situations where sterilisation is not possible¹.

4.2 Bottle Feeding Position

- Wash your hands and then wrap infant appropriately. Wrapping provides midline support. Consider wrapping the infant's top or bottom half only if level of alertness is an issue.
- Sit comfortably in a quiet area, with the feed ready nearby.
- Ensure optimal feeding performance by emphasising flexion, midline positioning and alignment of the head, trunk and limbs as this enhances safety and efficiency of feeding.
- Make eye contact and talk to the infant whilst feeding.
- Encourage open gape of the infant's mouth and gently insert the teat.
- Allow the infant to determine the pace of feeding, stopping when the baby demonstrates stress or disengagement cues.
- It may be necessary to change the teat if the flow is too fast or slow.

- If an infant is presenting with feeding difficulties, consider referral to Speech Pathology for further assessment.

4.3 Supervision when feeding

- Prop feeding is not recommended. Prop feeding is when a baby's bottle is positioned beside a pillow, rolled-up blanket or other device, instead of the baby being held to feed. Prop feeding increases the risk of choking, aspiration, suffocation, tooth decay and ear infections ^{10, 11}.
- Feeding using a bottle should always be supervised and presents an opportunity for promoting healthy infant attachment and development ^{12, 13}.
- The dangers of unsupervised feeding should be recognised by any NSW Health staff members who care for bottle feeding babies and communicated to parents when feeding their infant whilst in hospital.

5 Infant Formula

Where breastfeeding or use of expressed breast milk is not possible the use of an infant formula is recommended¹.

5.1 Hospital Stock – Ready to Feed Formula (RTF)

There are no clinically significant differences between most brands of standard infant formula on the market, thus for hospital use one brand of standard infant formula in RTF bottles is provided. The RTF bottles are usually 100ml volume and are available on the wards. RTF formula should be stored in the carton or in a closed cupboard to avoid light sensitive vitamins being destroyed. Expiry dates should be checked before use. If an infant refuses the RTF then standard infant formula made from powder may be ordered from the Formula Room.

If the parents do not wish to change their infant's formula during hospitalisation to the standard RTF, the parents can provide powdered infant formula to the Formula Room who will prepare feeds for the infant. The parents need to supply an unopened, within 'use by' date and undented tin of formula labelled with the child's Identification sticker and ward abbreviation. This formula needs to be taken to the Formula Room so that it can be prepared under hygienic conditions.

Sterilised bottles, caps and teats are kept in the ward kitchen

- Caps are ordered via the Formula Room.
- Teats are ordered through Stores.
- Empty sterilised bottles are supplied by Formula Room to wards usually for mothers who are expressing breast milk. These bottles have a 4 day Use By date.

5.2 Hospital Stock - Other Formula

All babies (< 1 year of age) admitted on a standard infant formula are to be offered the RTF bottles of standard infant formula as outlined above.

Please contact the ward Dietitian for the following:

- Specialised or alternative formulas. If a specialised or alternative formula is required, the hospital will supply the formula where possible. For some particularly rare conditions, (e.g. metabolic diseases) the family may need to provide the formula. Please check with the ward Dietitian if unsure.
- Different dilutions/concentrations of formulas
- Feeds requiring additives e.g. energy supplements, feed thickener

5.3 Ordering of Formula from the Formula Room

The Formula Room is open 7 days a week with hours varying at each campus. All formulas (other than the RTF) are to be ordered via the Formula Room. **At CHW** all infants under 12 months of age require feeds to be prepared in a clean environment in the Formula Room.

It is not recommended to prepare infant formula on the ward. Infant formula should be ready-to-feed ward stock, or preparation should happen via the Formula Room, except in exceptional circumstances. In such circumstances, staff must follow the guidelines set out in this document.

Parents should be encouraged to have feeds made up in the Formula Room according to Food Safety Guidelines. If feeds do need to be made up on the wards the following guidelines apply:

1. Prepare feeds in ward kitchen. Ensure the bench area has been well cleaned prior to starting to prepare the formula.
2. Sterilise any utensils required to make up formula (e.g. spoon or knife).
3. Wash hands well before preparing formula.
4. Use sterile bottles from ward kitchen.
5. Use sterile water from the ward stock.
6. Use recipe on the formula can or recipe provided by the Dietitian.
7. Keep prepared and labelled formula in the fridge and use within 24 hours of preparation.

At CHW: Any feeds required prior to 7.00am or after 5.30pm need to be organised through the After Hours Nurse Manager who has access to the Formula Room. A small supply of frozen formulas is kept for use at these times.

At SCH: Spare formulas are available from the Formula Room refrigerator located on Level 2, opposite C2S.

6 Use of Cow's and Goat's Milk

The use of cow's or goat's milk in place of formula for infants under 12 months of age is inappropriate and is to be discouraged. These milks are not nutritionally suitable as infant formulas^{1,2}. Small amounts of cow's or goat's milk may be used in food.

For parents who wish to use cow's milk or goat's milk for their child, a commercially available cow's milk, or goat's milk based infant formula is recommended.

Most infants with cow's milk allergy need to avoid all mammalian milks and infant formulas including goat's milk formula, due to cross reactivity between milk proteins. Please refer to the [ASCIA Guide for Milk Substitutes in Cow's Milk Allergy](#) and the [ASCIA guidelines on infant feeding and allergy prevention](#).

Please refer to the [Infant Feeding 0-12 Months Breastfeeding](#) Policy for advice of the use of pasteurised donor human milk.

7 Introduction of Solids

- Introduction of solids is usually appropriate at around 6 months of age depending on the child's development, but should not be introduced earlier than 4 months of age. This includes infants who were born prematurely. Timing of the introduction of solids for premature infants should be based on their corrected age, interest and readiness cues¹.
- Iron rich foods are recommended as first foods. Other foods can be introduced in any order and at any rate that suits the infant^{5,6,7}. Iron rich foods include iron-enriched infant cereals, meat, chicken, fish, eggs, nut butters, tofu and legumes^{5,6,7}. A variety of vegetables, fruits, grains and dairy products should also be introduced.
- A variety of textures may be offered from puree to finger food as appropriate for the infant's feeding development, oro-motor skills and preference⁶.
- All infants should be given allergenic solid foods including peanut butter, cooked egg and dairy and wheat products in the first year of life^{5,6,7}.
- Initially solids should be offered once a day after milk feeds and increased to three times a day as acceptance increases, usually over several weeks.
- Once the eating of solids has been established, sometime around 8 - 9 months of age parents are encouraged to give solids prior to breastfeeds or formula feeds.
- Honey is not recommended on dummies or teats, or in infant foods, due to risk of botulism¹.
- Salt and sugars are unnecessary in infant foods including formula, unless medically indicated¹. In this case a Dietitian should be consulted.
- Low fat diets are not recommended for infants¹. A Dietitian should be consulted if a low fat diet is medically indicated.

7.1 Infant Foods on the Ward

- While in hospital, all meals are ordered through CBORD (the hospital's computerised Food Service and Dietetics package) in the Patient Management System / eMR. The appropriate diet code needs to be entered into the Patient Management system / eMR on the ward by the Nursing Staff in order for the infant to receive appropriate meals (see table below). Dietary Assistants can assist with any issues with food selection or suitability of the meals provided. They can be contacted by ringing the Diet Office in the Department of Nutrition and Dietetics.
- Food allergies are to be recorded in the patient's eMR on PowerChart, and on the nursing handover sheet. There is a 'High Alert' food service system at CHW which must be implemented for children with immediate type, or IgE-mediated food allergies. These procedures are activated in the diet office, kitchen, and on the ward, and install safeguards around the meal selection, preparation, and delivery for patients with immediate type food allergies.
- Food and drinks provided from outside the hospital need to have been prepared under hygienic conditions and safely transported to the hospital. They should be consumed immediately or labelled and stored in the fridge on the ward if necessary.

Developmental feeding stage	Diet Code in Patient Management System	Description of diet and suggested use
4-6 months	INFANT FIRST FOODS	Smooth puree cereal, fruit and veg for infants' first tastes
4-8 months	INFANT 6 MONTHS +	Puree texture only cereal, fruit, veg, meat/chicken, dairy for infant on early stages of solids
7 – 12 months	INFANT 7-12 MONTHS	Mixed textures: puree – finger foods: cereal, bread, fruit, veg, meat/chicken, egg, dairy
1 – 3 years	TODDLER (1-3 YEARS)	Full diet with finger foods, soft to slightly firm texture easily chewed.

7.2 Positioning For Solids

- Child to be positioned in highchair or equivalent e.g. booster seat. This allows for eye contact with the feeder and facilitates communication, therefore making feeding more enjoyable
- For children with additional postural support needs it is recommended that a referral to Occupational Therapy and/or Physiotherapy be made for comprehensive evaluation, recommendations and assistance in arranging suitable equipment

8 References

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