Supplementary Feeding of the Breastfed Baby

SCOPE (Area): All Areas
SCOPE (Staff): Medical, Nursing & Midwifery

BACKGROUND/RATIONALE

Research has identified that supplementary feeding reduces the frequency of breastfeeding, contributing to engorgement in the first few days and later to decreased milk production. Additionally, it has been shown to affect the success and duration of exclusive breastfeeding. However, there are times when use of formula as a supplementary feed may be medically required.

DESIRED OUTCOMES/OBJECTIVES

- To avoid the non-medical use of formula and promote confidence that mothers are able to supply adequate nutrition for their baby.
- To implement strategies that will result in the establishment of lactation.
- To prevent hypoglycaemia, excessive weight loss, hypernatraemic dehydration or any other complications related to delayed or suboptimal onset of lactation.
- To provide nutritional support to infants who are unwell while their mother is establishing lactation.

DEFINITIONS

Supplementary feed: where a breastfed infant has been given one or more fluid feeds, including infant formula. Expressed breast milk is considered a supplementary feed.

Hypoallergenic / Hydrolysed formula: cow’s milk based formula that has been processed to break down most of the proteins which cause symptoms in cow’s milk allergic children.

EBM: expressed breast milk

INDICATIONS

Expressed Breast Milk (EBM) is the first choice to provide extra nutritional support.

Use of formula as a supplementary feed may occur in the following situations:

- Baby is unwell eg. Signs of dehydration
- Mother is unwell and/or unable to provide breastmilk
- Weight loss > 10%
- Jaundice / Phototherapy
- Hypoglycaemia

There is no evidence to support routine supplementary feeding for healthy, term newborns.
ISSUES TO CONSIDER

This guideline is not relevant when an infant is being exclusively formula fed.

### Initiation of supplementary feeds

Supplementary feeding may be initiated for medical reasons, as outlined previously. The mother should be provided with appropriate support to commence/continue with breastfeeding. A proper assessment of breastfeeding should be undertaken.

On occasions supplementary feeding may be initiated for non-medical reasons at the parents’ request. Non-medically indicated supplementary feeds should not be instigated until a proper assessment of breastfeeding has been undertaken and other options considered.

### Use of hypoallergenic formulas.

If infant formula is required in the first few months of life there is some evidence that hydrolysed formulas may reduce the risk of allergic disease in high risk infants – infants with a history of allergy in their parents or siblings. In Australia only partially hydrolysed formulas – usually labelled as HA or hypoallergenic – are recommended for allergy prevention. Therefore, whenever a parent indicates an immediate family history of asthma, hay fever, eczema, food allergies or anaphylaxis the use of a hypoallergenic formula should be recommended and discussed with the family.

(Extensively hydrolysed formulas (EHFs) are only available on prescription for treatment of cow’s milk allergic children after a medical consultation with a paediatrician.)

### Use of water or glucose as a supplementary feed

Ideally, infants should not be given water or glucose. When a supplementary feed is required formula is considered the better option as it will provide a caloric benefit. However, it is important to note that babies that receive formula in the newborn period are at greater risk of becoming sensitised to cow’s milk and going on to develop cow’s milk allergy or intolerance during their first year.

### PROCEDURE

1. **Assess baby, mother and breastfeeding**

2. **Implement strategies to increase breastmilk supply**

3. **Obtain written consent for use of formula**

   The use of any formula should be discussed with the parents prior to use.

   - Provide the parents with the pamphlet *Supplementary Feeds For Breastfed Babies*
   - Discuss the information outlined on the pamphlet and the specific indications for introducing formula.
   - Complete the history on the front of the *Consent - Supplementary Feeding* (MR055.0)
   - Identify the type of formula and method of feeding on the back of the form and get the consent signed by the mother. (When the mother is unwell and unable to sign the form the father may sign.)
4. Select type of formula

- Ensure that the history section of the consent form has been completed.
- If there are any risk factors identified then recommend that a hypoallergenic formula be used. NAN HA is available in the Special Care Nursery at all times.
- If no risk factors are identified then the current formula on rotation through the Special Care Nursery may be used for the supplementary feeds.
- However, parents have the right to choose which type of formula their baby receives. If parents do not wish to use the type of formula on offer they will be required to provide a tin of the formula that they wish to use.
  -> Parents of babies on the postnatal ward, who have initiated frequent supplementary feeds for their babies, will be required to provide their own formula.

5. Calculate volumes of supplementary feeds

- The volume of formula required for a supplementary feed depends on a number of factors including:
  -> gestation, age, weight, output
  -> medical condition
  -> feed tolerance
  -> accurate assessment of breastfeeding and maternal milk supply
  -> availability of expressed breast milk
- Volumes for medically indicated supplementary feeds will often follow the recommended volumes for exclusively formula fed babies. (Refer to Appendix 1).
- Volumes for non-medically indicated supplementary feeds (eg. Maternal request) should be enough to satisfy the baby while avoiding large volumes which may affect a baby’s desire to breastfeed and may negatively impact on the successful establishment of breastfeeding. Consideration should also be given to the usual volume a baby would receive when exclusively breastfeeding; this ranges from about 7ml per feed on day 1 to about 70 ml per feed on day five. (Refer to Appendix 1).

6. Consider method of supplementary feeds

- When women are establishing breastfeeding it is recommended that their baby is not given a bottle or teat. Research has shown that it may impact on the success of breastfeeding. Therefore, to optimise breastfeeding success it is preferable to give any expressed breast milk or formula to a baby by cup, spoon, pipette or nasogastric tube.**

*Please refer to Breastfeeding Challenges – Low Supply (CPG/032) for assessment outline and strategies to implement.

**Please refer to the guideline Expressed Breast Milk – Feeding Methods (CPG/E018) for specific information relating to feeding methods.
RELATED DOCUMENTS

Internal

CPG/B032: Breastfeeding Challenges – Low Supply
CPG/E018: Expressed Breast Milk – Feeding Methods
Supplementary Feeding of the Breastfed Baby – Parent information pamphlet
MR 055.0 Consent Supplementary Feeding

Appendix

Appendix 1: Supplementary Feeding of the Breastfed Baby
Appendix 2: BFHI Acceptable Medical Reasons for Supplementation

REFERENCES


Clinical Director – Women & Children’s Health, Director of Nursing – Women & Children’s Health
Review Responsibility: Maternity Unit

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Updated by: ----

Keys Words: breastfeeding, supplementary, hypoallergenic, formula
### Table 1  Milk Production from birth

<table>
<thead>
<tr>
<th>Age of baby</th>
<th>Average (range) volume per day (ml)</th>
<th>Average volume per feed (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1 (0-24h)</td>
<td>37 (7-123)</td>
<td>7</td>
</tr>
<tr>
<td>Day 2 (24-48h)</td>
<td>84 (44-335)</td>
<td>14</td>
</tr>
<tr>
<td>Day 3 (48-72h)</td>
<td>408 (98-775)</td>
<td>38</td>
</tr>
<tr>
<td>Day 4 (72-96h)</td>
<td>625 (378-876)</td>
<td>58</td>
</tr>
<tr>
<td>Day 5 (96-120h)</td>
<td>700 (452-876)</td>
<td>70</td>
</tr>
</tbody>
</table>

(Adapted from RCM, 2002, Successful Breastfeeding, p26)

### Table 2  Calculation of fluid requirements for formula fed babies

<table>
<thead>
<tr>
<th>Age of baby</th>
<th>Term</th>
<th>Preterm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>60ml/kg</td>
<td>60ml/kg</td>
</tr>
<tr>
<td>Day 2</td>
<td>90ml/kg</td>
<td>80ml/kg</td>
</tr>
<tr>
<td>Day 3</td>
<td>120ml/kg</td>
<td>100ml/kg</td>
</tr>
<tr>
<td>Day 4</td>
<td>150ml/kg and thereafter</td>
<td>120ml/kg</td>
</tr>
<tr>
<td>Day 5</td>
<td></td>
<td>140ml/kg</td>
</tr>
<tr>
<td>Day 6</td>
<td></td>
<td>160ml/kg</td>
</tr>
<tr>
<td>Day 7</td>
<td></td>
<td>180ml/kg</td>
</tr>
</tbody>
</table>

- Babies under phototherapy require an extra 10ml/kg /day
- Birth weight is used to calculate total volumes until baby is above birth weight
- To calculate feeds: \[ \text{weight (gms)} \times \frac{\text{volume/kg/day}}{1000} = \frac{\text{volume/feed}}{\text{number of feeds/day}} \]

These values are used to calculate feeding volumes for bottle fed babies. Please take into consideration the fact that a baby is breastfeeding and the need to balance the volume of supplementary feed with the continuation of breastfeeding.
Appendix 2
BFHI Acceptable Medical Reasons for Supplementation

Acceptable Medical Reasons for Use of Breastmilk Substitutes

Introduction
Almost all mothers can breastfeed successfully, which includes initiating breastfeeding within the first hour of life, breastfeeding exclusively for the first 6 months and continuing breastfeeding (along with giving appropriate complementary foods) up to 2 years of age or beyond.

Exclusive breastfeeding in the first six months of life is particularly beneficial for mothers and infants.

Positive effects of breastfeeding on the health of infants and mothers are observed in all settings. Breastfeeding reduces the risk of acute infections such as diarrhoea, pneumonia, ear infection, \textit{Haemophilus influenzae}, meningitis and urinary tract infection\cite{1}. It also protects against chronic conditions in the future such as type-1 diabetes, ulcerative colitis, and Crohn’s disease. Breastfeeding during infancy is associated with lower mean blood pressure and total serum cholesterol, and with lower prevalence of type-2 diabetes, overweight and obesity during adolescence and adult life\cite{2}. Breastfeeding delays the return of a woman's fertility and reduces the risks of post-partum haemorrhage, pre-menopausal breast cancer and ovarian cancer\cite{3}.

Nevertheless, a small number of health conditions of the infant or the mother may justify recommending that she does not breastfeed temporarily or permanently\cite{4}. These conditions, which concern very few mothers and their infants, are listed below together with some health conditions of the mother that, although serious, are not medical reasons for using breast-milk substitutes.

Whenever stopping breastfeeding is considered, the benefits of breastfeeding should be weighed against the risks posed by the presence of the specific conditions listed.

Infant Conditions

\textbf{Infants who should not receive breast milk or any other milk except specialized formula}

- Classic galactosemia: a special galactose-free formula is needed;
- Maple syrup urine disease: a special formula free of leucine, isoleucine and valine is needed;
- Phenylketonuria: a special phenylalanine-free formula is needed (some breastfeeding is possible, under careful monitoring).

\textbf{Infants for whom breast milk remains the best feeding option but who may need other food in addition to breast milk for a limited period}

- very low birth weight infants (those born weighing less than 1500g);
- very preterm infants, i.e. those born less than 32 weeks gestational age;
- newborn infants who are at risk of hypoglycaemia by virtue of impaired metabolic adaptation or increased glucose demand (such as those who are preterm, small for gestational age or who have experienced significant intrapartum hypoxic/ischaemic stress, those who are ill and those whose mothers are diabetic\cite{5}) if their blood sugar fails to respond to optimal breastfeeding or breast milk feeding.

Maternal Conditions

Mothers who are affected by any of the conditions mentioned below should receive treatment according to standard guidelines.

\textbf{Mothers who may need to avoid breastfeeding}

- HIV infection: if replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS). The most appropriate infant feeding option for an HIV-infected mother depends on her and her infant's individual circumstances, including her health status, but should take consideration of the health services available and the counselling and support she is likely to receive. When replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS), avoidance of all breastfeeding by HIV-infected women is recommended. Mixed feeding in the first 6 months of life (that is, breastfeeding while also giving other fluids, formula or foods) should always be avoided by HIV-infected mothers.

\textbf{Mothers who may need to avoid breastfeeding temporarily}

- Severe illness that prevents a mother from caring for her infant, for example sepsis;
- Herpes simplex virus type 1 (HSV-1): direct contact between lesions on the mother's breasts and the infant's mouth should be avoided until all active lesions have resolved;
• Maternal medication:
  o sedating psychotherapeutic drugs, anti-epileptic drugs and opioids and their combinations may cause side effects such as drowsiness and respiratory depression and are better avoided if a safer alternative is available;
  o radioactive iodine-131 is better avoided given that safer alternatives are available - a mother can resume breastfeeding about two months after receiving this substance;
  o excessive use of topical iodine or iodophors (e.g., povidone-iodine), especially on o pen wounds or mucous membranes, can result in thyroid suppression or electrolyte abnormalities in the breastfed infant and should be avoided;
  o cytotoxic chemotherapy requires that a mother stops breastfeeding during therapy.

_Mothers who can continue breastfeeding, although health problems may be of concern_

• Breast abscess: breastfeeding should continue on the unaffected breast; feeding from the affected breast can resume once treatment has started;
• Hepatitis B: infants should be given hepatitis B vaccine, within the first 48 hours or as soon as possible thereafter;
• Hepatitis C;
• Mastitis: if breastfeeding is very painful, milk must be removed by expression to prevent progression of the condition;
• Tuberculosis: mother and baby should be managed according to national tuberculosis guidelines;
• Substance use:
  o maternal use of nicotine, alcohol, ecstasy, amphetamines, cocaine and related stimulants has been demonstrated to have harmful effects on breastfed babies;
  o alcohol, opioids, benzodiazepines and cannabis can cause sedation in both the mother and the baby.

_Mothers should be encouraged not to use these substances and given opportunities and support to abstain. Mothers who choose not to cease their use of these substances or who are unable to do so should seek individual advice on the risks and benefits of breastfeeding depending on their individual circumstances. For mothers who use these substances in short episodes, consideration may be given to avoiding breastfeeding temporarily during this time._

References


