

BREASTFEEDING: Best Practice Guidelines



Section 1: Introduction

Section 2: During pregnancy

Breastfeeding education	8
How breastfeeding works	9
Antenatal advice and taking lactation history	11
Role of the father, the family and support people	14
Breastfeeding and the young woman	15

Section 3: Care of the breastfeeding woman

The first breastfeed	18
Natural patterns of breastfeeding	19
Assessing a breastfeed	19
Exclusive breastfeeding	23
Methods to increase breastmilk supply	25
Rooming in	25
Attaching and positioning at the breast	26
Care of the breastfeeding mother after cesarean or difficult vaginal birth	29
Breastfeeding multiples	30
Establishing breastfeeding	31
Monitoring baby's progress	32
Discharge advice	34

Section 4: Breastfeeding and extra care

Management of breastfeeding problems	38
Breastfeeding babies with special needs	50
Premature babies	53

Section 5: Expressed breastmilk feeding

Cup feeding	58
Nipple shields	59
Breastmilk expression – frequency and volume	60
Hand or pump expression	63
Storage and transport of expressed breastmilk	64

Section 6: Maternal diet and medications

Drugs and breastfeeding	68
Dietary advice	73
The midwife – occupational safety	76
Support services	77
Reading list	78
Bibliography	80

Breastfeeding is an art and a science, a skill to be learned and a subtle choreography between a mother and her baby. For some women, breastfeeding is also a vulnerable experience that can be enhanced, determined or damaged by what her supporters say or do and by her own experiences, beliefs and understandings. In an era where infant formula is often promoted as ‘the next best thing’ to breastmilk, it becomes essential for all who support pregnant women and new mothers to assist them to prepare for, understand and become confident with breastfeeding and avoid or manage the common early problems.

These guidelines present a framework to assist all providers to facilitate the successful initiation of breastfeeding within the early postnatal setting.

The Royal Women’s Breastfeeding Guidelines 2004 have been developed by a multidisciplinary team of health professionals including Heather Harris (IBCLC); Dr Lisa Amir (IBCLC); Dr Julie Quinliven; Dr Inez Rio; Dr Helen McLachlan; Dr Sue Jacobs; Ms Jan Cornfoot; BESS staff, and Team midwives. On behalf of The Royal Women’s Hospital, I thank you all for your time and commitment to enhancing lactation support and education for women. I am confident that the guidelines will provide readers with a valuable resource.

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Section 1 – Introduction

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Philosophy

The Royal Women's Hospital (RWH) recognises that breastfeeding is the best method of infant feeding. Breastfeeding positively influences the physical and emotional health of both mother and infant. Breastfeeding provides species-specific nutrition for normal growth and development of infants. The unique anti-infective properties of breastmilk provide protection against many diseases and infections for both mother and baby.

The long-term health benefits for mother and baby are a strong incentive for all health professionals to protect, promote and support breastfeeding.

Background

This hospital promotes breastfeeding by providing education to medical, midwifery and nursing staff, pregnant women and their families. It is imperative that all pregnant women are provided with unbiased, current research-based information to enable them to make an informed decision regarding their infant feeding choice. It is the responsibility of all health professionals to ensure that this information is available and communicated effectively to women at appropriate stages during pregnancy and beyond.

Hospital staff recognise the right of the mother to make an informed choice about her infant's nutrition and will support her in her decision. The Hospital co-operates with other health professionals and community groups to support, promote and protect breastfeeding.

The guidelines will aid in the successful implementation of The Royal Women's Hospital Breastfeeding Policy. All staff are expected to be familiar with, and adhere to, this policy.

The intention of the policy is to:

- meet the requirements of the 'Baby Friendly Hospital Initiative' (BFHI) as stipulated in the '10 Steps to Successful Breastfeeding'
- provide research-based evidence on breastfeeding management
- reduce the potential for breastfeeding mothers to receive conflicting advice from doctors, midwives and other allied health professionals
- increase both the breastfeeding initiation and duration rate of women who give birth at the RWH
- minimise breastfeeding initiation problems
- provide workable solutions for dealing with breastfeeding problems.

Evaluation

A hospital policy for breastfeeding that is clear and research-based should contribute to an increase in the initiation of breastfeeding and reduce early breastfeeding problems.

Evaluation of its effectiveness should include the following points:

- Can staff readily identify/locate the guidelines? (Assessed by questionnaire)
- Have staff read and understood the guidelines? (Assessed by questionnaire)
- Are the guidelines displayed prominently for staff and public?
- Have the guidelines been implemented? (Assessed by BFHI accreditation process.)

Annual data analysis will determine:

- breastfeeding initiation rates of hospital patients – through electronic discharge summary, chart audit and regular discussions with clients to identify their experience
- the proportion of women breastfeeding at discharge from hospital care – through electronic discharge summary and chart audit
- major breastfeeding problems encountered in the hospital – through team audit and review of patients referred to the lactation consultant/service
- major problems experienced in the first three months – through review of hospital patients seen in the Breastfeeding Education and Support Service (BESS)
- regular assessment of processes for implementing the policy, including a review of educational materials and programs. Are they accurate, appropriate, easily understood and consistently presented?

All policy and procedure material is initially directed to the Clinical Services Support Officer who will facilitate its final approval. The CSS Officer works within the Quality and Safety Unit. The Breastfeeding Policy and these best practice guidelines can be accessed by staff via the RWH intranet site.

A baby friendly accredited health service

As a response to the falling breastfeeding initiation and retention rates worldwide, UNICEF/WHO published the *10 Steps to Successful Breastfeeding* in the early 1990's. The Royal Women's Hospital was the first public hospital in Australia to be accredited as a Baby Friendly Hospital by UNICEF/WHO in June 1995. It became the first public hospital to be re-accredited as Baby Friendly in 1999 and again in 2002. This is a distinction of which the hospital is very proud. To gain accreditation the hospital underwent rigorous assessment of its policies and practices in relation to breastfeeding management.

The accreditation is based upon the 'Ten Steps to Successful Breastfeeding' which are achievable and research-based. These steps have been shown to be effective in improving initiation and continuation of breastfeeding. The 'Ten Steps' are an education-based approach to successful breastfeeding targeting the mother, health professionals and the community.

Ten steps to successful breastfeeding

Every facility providing maternity services and care for newborn infants should:

1. have a written breastfeeding policy that is routinely communicated to all health-care staff
2. train all health-care staff in the skills necessary to implement this policy
3. inform all pregnant women about the benefits and management of breastfeeding
4. help mothers initiate breastfeeding within an hour of birth
5. show mothers how to breastfeed and how to maintain lactation even if they are separated from their infants
6. give newborn infants no food or drink other than breastmilk, unless medically indicated
7. practice rooming-in: allow mothers and infants to remain together 24 hours a day
8. encourage breastfeeding on demand
9. give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants
10. foster the establishment of breastfeeding support groups and refer mothers to them prior to discharge from the hospital or clinic.

Role of lactation consultant

The RWH has a clinical nurse consultant midwifery position dedicated to lactation consultancy (CNC-LC). The lactation consultant has completed further studies in human lactation and breastfeeding and after successfully passing an international exam, is qualified as an International Board Certified Lactation Consultant (IBCLC).

The CNC-LC responsibilities include:

- breastfeeding management processes in the hospital
- ongoing clinical education for hospital staff
- provide education and counselling for breastfeeding mothers and their families
- assessment and revision of breastfeeding protocols and practices
- facilitating and conducting research.

Additionally there are a number of staff who have IBCLC qualifications, working in a variety of settings within the hospital. The Breastfeeding Education and Support Service (BESS) is staffed by IBCLC's and can be contacted on 9344 3651.

Section 2 – During the pregnancy

During the pregnancy

Breastfeeding is more than the feeding of babies. It is a learned skill that is vulnerable to low levels of knowledge, negative experiences and low levels of support. This section describes ways to improve preparation for breastfeeding through education during the pregnancy, identifying support networks for the evolving family and a range of information about how breastfeeding works.

Breastfeeding education

Parent education

Breastfeeding classes are conducted antenatally. All pregnant women are offered the opportunity to attend childbirth education classes, which incorporate a breastfeeding education session. Additionally there are two stand-alone sessions on breastfeeding available – one usually before 26 weeks and one before 36 weeks gestation.

At 28 weeks gestation the pregnant woman is seen by a midwife in the Pre Admission Clinic and a brochure, *Simply Breastfeeding* is given to her at this time. This contains basic breastfeeding information and a reading list as well as resources for ongoing breastfeeding support after discharge from hospital. It is available in English, Vietnamese, Arabic and Chinese.

If there are any indications of potential breastfeeding problems, she is referred to a Lactation Consultant in BESS.

The pregnant woman is encouraged to contact a community breastfeeding support group such as the Australian Breastfeeding Association (ABA) Telephone (03) 9885 0855.

Printed literature on various aspects of pregnancy, childbirth and breastfeeding is available through the hospital's Publications Department. Information is available in languages other than English.

Further information is available on the RWH website, the Well Women's Clinic and Women's Health Information Centre.

Ongoing education for health providers

Midwives have a professional responsibility to themselves and to mothers and their families, to update their knowledge and skills in breastfeeding management (Henderson, Pincombe et al. 2000). The hospital provides regular breastfeeding and neonatal education sessions that all midwifery and neonatal staff are expected to attend. It is recommended they attend at least three other in-service seminars or conferences each year. Study leave is available on application in accordance with the award.

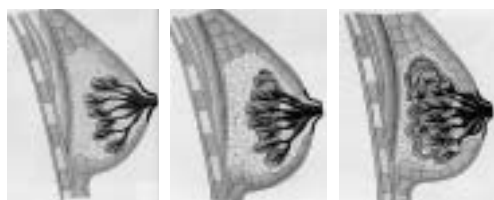
Student midwives rostered for clinical placement are 'buddied' with a more experienced staff member when assigned to their initial patient care. This provides supervision and practical instruction for the student to enable greater confidence and clinical expertise when assisting breastfeeding mothers. The role of the midwife in providing advice and support for the initial breastfeed is a vital aspect of the fourth stage of labour – the two hours following birth.

Midwifery students spend a day with the hospital lactation consultant learning aspects of early breastfeeding management. Opportunities also exist for related health professionals to observe and learn in the BESS clinical setting.

How breastfeeding works

Endocrine control

The hormone prolactin is secreted by the anterior pituitary gland in response to suckling and the associated stimulation of the nerve endings in the nipple and areola. Antenatally, the breast glandular acini cells will have increased markedly in both number and size under the influence of maternal oestrogen. These groups of acini are contained in 15–25 lobules within each breast and are drained via a lactiferous duct system. After lactation begins, the prolactin levels gradually decrease to near non-pregnant levels, despite continuation of supply (Lawrence and Lawrence 1999). This indicates additional factors in the regulation of milk production as outlined below. The hormone oxytocin is secreted by the posterior pituitary gland in response to the initial suckling stimulus. This pulsatile release causes the myoepithelial cells around the acini to contract, thus expelling milk along the lactiferous ducts. This is known as the milk ejection reflex (or ‘let down’ reflex).



This is what the breast looks like from the side prior to pregnancy.

From the sixth week of pregnancy, the placenta produces hormones which allow the milk ducts and alveoli to develop into efficient glandular tissue by the time of the birth.

The breast during the breastfeeding period:

- 1 Alveoli (milk sacs)
- 2 Milk ducts
- 3 Milk reservoirs
- 4 Fatty tissue

Illustrations with kind permission of Medela

Autocrine control

One of the most important factors affecting the continuing success of lactation is the efficient removal of milk from the breasts. Research shows that there is a local feedback control mechanism for milk production, which is under autocrine control. This mechanism is regulated by a locally secreted inhibitory peptide, which limits milk production. The less the breast is drained, the more this peptide accumulates to hinder further milk production. Regular breast drainage keeps the peptide at a low level ensuring milk production is maintained (Knight, Peaker et al. 1998; Wilde, Addey et al. 1998). This explains individual variation in production between the two breasts and also the ongoing production of milk once prolactin levels decrease.

Variation in fat content

Breastmilk fat levels rise as the breast drains. As fat provides at least half of the calories in breastmilk, this small volume of fattier hindmilk provides much of the baby’s energy needs and ensures a maximum intake of leptin – a protein hormone found in human milk but not formula, which is associated with appetite control and growth rate differences between breast and formula fed babies (Savino, Costamagna et al. 2002). The change in fat content is thought to be another factor in the appetite-control mechanism and highlights the importance of baby-led feeding i.e. allowing the baby to regulate intake according to need. This is the reason for ensuring that the baby finishes the first breast before being offered the second and why babies should finish feeding in their own time and not according to the clock.

Individual variability

There is individual variability in:

- the volume of milk intake
- the rate of milk transfer/flow
- the changes in milk composition
- the quality of attachment/positioning
- the storage capacity of the individual breast
(Daly, Owens et al. 1993).

These factors highlight the importance of tailoring advice and suggestions to each individual mother and baby and not imposing arbitrary rules.

The suckling process

The draining of the breast by the baby's suckling action is dependent upon:

- the baby latching-on to adequate breast tissue
- the baby having a correct tongue action for milk transfer (see Figure 1f).

The importance of correct positioning/attachment and correct milking action cannot be overemphasised; these ensure the efficient drainage of milk from the breast without nipple pain or trauma.

The following classic description and diagrams have been important in showing us the difference between 'suckling' at the breast and sucking on a bottle teat.

The nipple and areola are drawn toward the junction of hard and soft palate, and when this does not happen, clinical features can usually assist in diagnosing this. *For example:*

- nipple pain after let-down
- nipple trauma
- baby 'sleeping' at breast or 'fussing' at breast
- frequent feeding
- unsettled baby after feeding.

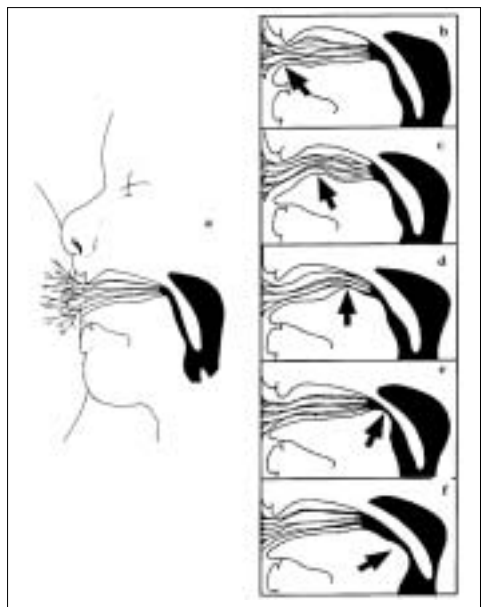


Figure 1: Shows a complete 'suck' cycle (Woolridge 1986).

The baby is shown in median section. The baby exhibits good feeding technique with the nipple drawn well into the mouth, extending back to the junction of the hard and soft palate.

- a) A 'teat' is formed from the nipple and much of the areola, with the lactiferous ducts being drawn into the mouth with the breast tissue. The soft palate is relaxed and the nasopharynx is open for breathing.

The shape of the tongue at the back represents its position at rest, cupped around the tip of the nipple.

- b) The suck cycle is initiated by a welling up of the anterior tip of the tongue. At the same time, the lower jaw, which had been momentarily relaxed (not shown) is raised to constrict the base of the nipple, thereby 'pinching off' milk within the ducts of the teat.
- c) The wave of compression by the tongue, moves along the underside of the nipple in a posterior direction, pushing against the hard palate. This roller-like action squeezes milk from the nipple. The posterior portion of the tongue may be depressed as milk collects in the oropharynx.
- d) The wave of compression passes back past the tip of the nipple and pushes against the soft palate. As the tongue impinges on the soft palate, the levator muscles of the palate contract, raising it to seal off the nasal cavity. Milk is pushed into the oropharynx and is swallowed if sufficient has collected.
- e) See (d)
- f) The cycle of compression continues and ends at the posterior base of the tongue. Depression of the back portion of the tongue creates negative pressure, drawing the nipple and its milk contents once more into the mouth. This is accompanied by a lowering of the jaw, which allows milk to flow back into the nipple.

Antenatal advice and taking a lactation history

Taking a comprehensive antenatal history gives the health care professional the maximum amount of useful information to meet the individual needs of the pregnant woman and her immediate support people.

The RWH patient-held medical history (see appendix 2) contains information on:

- the woman's social circumstances
- dietary habits
- health status
- what she feels is important in relation to the coming labour, birth and post partum period.

A lactation assessment is completed at 26 weeks as part of the pre-admission visit.

Relevant information related to breastfeeding is recorded at this point and appropriate referral initiated when indicated. If there has been a history of breastfeeding difficulties, she can be referred to BESS antenatally and a care plan can then be developed to avoid repetition.

This may include:

- a written plan inserted in the antenatal section of the mother's case notes so that staff are aware of her situation, booking her into antenatal breastfeeding classes
- providing a reading list of current breastfeeding literature
- referral to a community breastfeeding support group such as the ABA is also recommended.

Breast preparation

There is no evidence to support specific preparation of nipples. Women with inverted and non-protractile nipples do not seem to benefit from any kind of antenatal nipple preparation (Brodrigg 1998).

There is also no evidence to support the commonly held belief that red-haired or fair-skinned women are more likely to experience nipple problems than darker skinned women. While some women may report extra sensitivity around the nipple or breast, this does not relate to hair or fairness of skin colour (Zeimer, Paone et al. 1990).

Recent research has indicated however that teaching mothers the technique of hand expressing while still pregnant can increase their confidence. In cases when separation of mother and baby after birth is anticipated, expressing and storing small amounts of colostrum from 36 weeks gestation may be done if breast manipulation is not medically contraindicated (Oscroft 2001).

Reservations about the potential for inducing labour if the breasts and nipples are stimulated do not appear to be substantiated in studies of healthy uncompromised pregnancies (Kadar, Tapp et al. 1990; Crowley 2002). Some of this frozen expressed milk may then be used if the baby is not able to breastfeed or requires complementary/ supplementary feeding (Hunt 2002).

Skin allergies

A history of allergic atopy (eczema, hay fever, asthma) in either parent must be noted. It is important to inform the pregnant woman about the potential protective effects of exclusive breastfeeding against development and /or severity of infant allergy (Strachan, Anderson et al. 1995; Oddy, Holt et al. 1999).

It may be helpful to modify the mother's diet during lactation if she has food sensitivities to further protect the breastfeeding infant from possible allergic reactions, but this should be done under the guidance of a qualified dietitian (Jarvinen and Suomolainen 2001).

Breasts and nipples

It is important to be sensitive to different cultural beliefs (Sheikh and Gatrad 2001) and ensure the woman is comfortable with hospital procedures. *If breasts and nipples are examined, any abnormalities should be noted such as:*

- scars indicating previous surgery, their position on the breast and the reason for the surgery
- nipple and areola skin conditions such as eczema, dermatitis, psoriasis or thrush. If these are present, appropriate treatment should start immediately to ensure the condition does not interfere with breastfeeding
- minimal or absent breast development (hypomastia, amastia) – a rare condition where there is a congenital reduction or absence of breast tissue. These women may not be able to fully breastfeed their babies, depending on the amount of breast milk making tissue available (Lawrence and Lawrence 1999).

Many women however, do not have a large increase in breast size during pregnancy yet go on to successfully exclusively breastfeed. Reassure the woman that having small breasts is no impediment to successful breastfeeding

- pregnant women should also be taught how to perform breast self-examination (BSE) as a routine part of their antenatal care.

Previous breast surgery

Removal of benign lumps should not impede breastfeeding unless surgery involved the areola or nipple where scarring may initially inhibit correct attachment.

Breast augmentation (implants) (Ferguson 1997) – there are a number of ways these can be inserted. If there is a peri-areolar incision some women may experience increased nipple sensitivity but this appears to pass quickly. Some women may experience early engorgement but if properly managed this problem should be transient. A number of studies demonstrate that silicone implants do not interfere with breastfeeding and do not appear to have a negative impact upon the baby's health (Koren and Ito 1998). If the implants are silicone, the pregnant woman may have concerns regarding the safety of her breastmilk and she should be encouraged to discuss this with her medical practitioner. Other research indicates that silicone levels are higher in cow's milk and some infant formula (Semple, Lugowski et al. 1998).

Reduction mammoplasty (breast reduction). Depending on the degree of glandular tissue removed and surgical technique used, there is evidence that many mothers will be able to at least partially breastfeed (Harris, Morris et al. 1992).

At times, although there is apparent good lactogenesis, milk transfer is reduced or not possible because the lactiferous ducts have been severed during surgery. Recent improvements in surgery techniques however, have resulted in closer attention being paid to the woman's future breastfeeding plans and efforts made to preserve the patency of the lactiferous ducts (Ramirez 2002). The best advice antenatally is 'wait and see'.

For women who have had breast surgery, it is important that there is an early start to breastfeeding with frequent, unrestricted suckling, and an avoidance of supplementary feeding for at least 24 hours. An evaluation of milk transfer coupled with the baby's behaviour (passage of meconium and urine, degree of settling after feeding) will indicate if the baby is getting enough milk.

Complementary feeds, if medically indicated should be kept to a minimum, allowing opportunity for maximum breast stimulation. If it becomes clear the baby's intake is insufficient, the mother may wish to give extra feeds via a supplementary feeding line (SNS line). This involves extra milk being given via a small tube attached to the breast so that as the baby suckles, he receives the appropriate amount of milk and the mother receives the maximum amount of breast stimulation ensuring maximum milk production. (Mother using SNS line pictured below)



Picture kindly supplied by H Harris

Role of the father, the family and support people

Breastfeeding information/support

Health professionals should be aware of the extent of the new mother's support network. One of the most important support people is the expectant mother's partner. If he/she is not supportive of breastfeeding there is a higher rate of early weaning (Vogel and Mitchell 1998). It is vital that partners understand the critical role they play in the initiation and establishment of breastfeeding. It is important therefore, that they be included in any breastfeeding education.



This may take the form of:

- antenatal classes
- reading current breastfeeding literature
- viewing current breastfeeding videos
- talking with family and friends
- making contact with a breastfeeding support group like the Australian Breastfeeding Association (ABA)
- accessing information on the Internet.

Some partners have difficulty adjusting to parenting their breastfed baby and say that they feel they can do nothing for the baby if it is breastfed. The response to this is to reassure them that the only thing they cannot do is breastfeed their baby! S/he is capable of doing everything else for the baby – cuddling, settling, walking, playing, bathing, nappy changing and will miss out on much pleasure if not participating fully in the parenting role. Health professionals and support groups can help in these situations by actively listening to a partner's concerns and providing information as required.

The woman may have been breastfed herself and her own mother may be the main source of support and advice. Grandmothers can be a significant part of the new mother's support network, so she also needs to have access to current information on breastfeeding (Tarrka, Paunonen et al. 1998).

Breastfeeding and the young woman

During adolescence, young women are coming to terms with their body image and sexuality. Both of these issues may be in conflict with the expectation and role of becoming a mother (Dick, Evans et al. 2002; Greenwood and Littlejohn 2002). Partner attitudes (Quinliven and Littlejohn 2003) and those of her significant support people have a considerable impact on feeding choice. Activities to help deal with this pressure may be needed for breastfeeding to be a realistic choice.

To maintain breastfeeding, early attention to breastfeeding problems is necessary and local supports are very important. Young women's diet (like all pregnant women) should be balanced and education towards improving food choices form an integral part of management strategies by staff.

Community support groups such as the ABA play a valuable role in providing information, counselling and social support for all families. Encouraging mothers to contact these groups can help mothers to breastfeed longer. This is especially important for mothers who do not have a positive, knowledgeable support network available. Genuine emotional support involving comfort, reassurance and praise has resulted in reduced feeding problems, higher exclusive breastfeeding at six weeks and less self-reported milk insufficiency (Leite, Puccini et al. 1998).

Section 3 – Care of the breastfeeding woman

Care of the breastfeeding woman

The hospital postnatal stay has evolved over time from the notion of prolonged hospitalisation to an average three to five days stay. There is much for the new family to learn and adapt to in that time. The midwife as primary caregiver is in an ideal position to aid the transition to parenthood and in particular, to help get breastfeeding off to the best possible start. This section describes a range of early postnatal information.

The first breastfeed

Facilitating early breastfeeding after birth is policy at the RWH. Early contact increases communication between mother and baby, and facilitates early initiation of breastfeeding.

The advantages of breastfeeding:

- Helps build the mother's confidence in her ability to breastfeed
- The baby starts receiving the immunological benefits of the colostrum
- Peristalsis is stimulated leading to early passage of meconium and less potential for physiological jaundice
- The bonding and attachment of mother and baby are enhanced
- The amount of colostrum received is small and is sufficient to meet the baby's needs until lactogenesis II has commenced.

A supportive environment and sensitive assistance is important for the first breastfeed. The baby should remain in close contact with its mother after birth. This period immediately after birth should be a private, relaxed and peaceful time for the new family. Tasks such as the mother showering, or bathing

and weighing the baby can wait until a more appropriate time. Skin-to-skin contact between mother and baby maintains infant thermo-regulation, enhances breastfeeding-seeking behaviour and enables the mother to meet her newborn (Ashmore 2001).

The midwife can help the new parents to recognise and respond to the baby's feeding cues. When the baby indicates an interest in suckling, the midwife helps the mother position herself appropriately and comfortably, so that the baby will be able to latch on correctly. After birth, the baby is usually in an alert state although some babies whose mothers received narcotic analgesia during the labour may show signs of sedation. Studies suggest that most babies, if unaffected by analgesia, will exhibit a spontaneous pattern of behaviour culminating in them seeking the breast and self-attaching with little or no external assistance. The usual pattern is to display hand/mouth activity, followed by rooting on the skin, then spontaneously crawling to the breast and self-attaching (Uvnas-Moberg, Widstrom et al. 1987).

Babies are well equipped to survive as they are born with a number of abilities. They can smell, see, hear, feel, vocalise, taste and move. Recent research shows that the newborn baby's hand-mouth movements stimulate the release of oxytocin in preparation for the first breastfeed (Matthiesen, Ranjso-Arvidson et al. 2001). Other literature states that if the mother is unable to initiate breastfeeding soon after birth, it does not mean that breastfeeding will not be successful – in some cultures breastfeeding is not started until the milk comes in, yet mothers breastfeed successfully, often for a year or more. However, the earlier breastfeeding is

initiated, the earlier lactogenesis will begin, bringing with it a higher chance of exclusive breastfeeding.

Unless there is a medical reason (e.g. significant prematurity or illness) mother and baby should remain together and hospital routines adjusted so that the initiation of breastfeeding takes place at the 'right' time (Muzkinja-Montanarji, Molnar-Sabo et al. 1999).

Natural pattern of breastfeeding

Unrestricted feeding of a well-attached baby is an important factor in the establishment of successful breastfeeding and includes both unrestricted duration of feeds and frequency, day and night (Renfrew, Lang et al. 2000). Prolactin secretion is enhanced by unrestricted feeding, resulting in improved milk production (Lawrence and Lawrence 1999).

Unrestricted feeding enables the baby to feed according to need. Both breasts should be offered at each feed, but the first breast needs to be 'finished' before the baby is offered the second. The baby may or may not feed from the second breast, depending upon appetite.

How to recognise when the baby has 'finished' the first breast:

- After sucking and swallowing for a reasonable period the baby self-detaches, possibly rests for a few moments, then seeks the second breast by mouthing and rooting. The timeframe will depend upon the suckling ability of the baby, the degree of attachment, and the amount of milk available, but it is usually no less than 10 minutes.

This does not mean that the first breast is 'empty' – there will always be some milk left. However the baby has 'finished' this side and should now be offered the second breast.

Assessing a breastfeed

Assessing a breastfeed has traditionally been a highly subjective task. Consequently, the quality of a breastfeed has differed depending upon who is observing the feed. This has led to inaccurate assessment at times and subsequent late identification of breastfeeding problems. Over the years a number of assessment tools have been published that will quantify a breastfeed. The 'Breastfeed Codes' is a tool that midwives and mothers can use – it is simple, quick and easy to understand. These codes are based on the Sucking Codes, which have been demonstrated to be valid and reliable (Harris 1999). They are now incorporated into the RWH Infant Feed Charts and all breastfeeds should be assessed using this tool.

The Breastfeed Codes is a simple numerical ordinal assessment tool numbering from 1 to 6. Each number has a set of baby behaviours assigned to it and the higher the number the better the breastfeed. Each breastfeed can then be assessed and documented so that any breastfeeding problems can be flagged early and rectified before further problems develop.

Breastfeed Codes

- 1 **Breast offered but does not attach – not interested – no sucking effort**
- 2 **Attempted attachment – unable to/pulls off**
- 3 **Appears attached but suck does not feel right/ look right/or irregular suck and swallow.**
- 4 **Attached with difficulty – regular suck and swallow**
- 5 **Good attachment, deep rhythmic sucking and swallowing, shorter feed of less than 10 minutes**
- 6 **Good attachment with deep rhythmic sucking and swallowing, 20-40 minutes.**

Additionally an A,B or C is added to show whether any assistance was required.

A = mother unassisted – attached baby independently.

B = midwife verbally guided.

C = midwife assisted – hands on assistance needed from midwife.

The codes are read in conjunction with documentation of the baby's output in order to fully assess intake.

Example – C4 would indicate that the baby attached with difficulty, there was some milk transfer noted and the mother needed 'hands on' help from the midwife.

Sleepy baby

The healthy, term, unседated baby usually seeks the breast within the first hour of birth if allowed unrestricted access. However a small number of babies do not. There are a number of reasons for babies to be sleepy after birth. Narcotic drugs used during labour are known to have a negative impact upon the baby's suckling over the following hours and sometimes days after the birth (Riordan, Gross et al. 2000; Ransjo-Arvidson, Matthiesen et al. 2001). If narcotics are used in labour, it is very important that their administration is timed so that the depressive effects of the drug do not affect the baby after birth (Nissen, Ransjo-Arvidson et al. 1995).

After the initial alert period following birth, many babies will become sleepy for a number of hours. It is important that the baby has its first breastfeed before this sleepy period begins.

If the baby does not attach and suckle at birth

- Maintain skin contact between mother and baby.
- If the baby has still not fed after four to six hours, help the mother express her colostrum to feed to her baby via a teaspoon or cup.
- The amount will often be quite small – but is sufficient for the well healthy baby (Woolridge, Baum et al. 1982). This will initiate lactogenesis II and give the baby vital colostrum. It is very rare for a mother to have no colostrum in her breasts after birth. During the hospital stay, it is important to keep the baby and mother in close proximity to each other whenever possible (Sinusas and Gagiardi 2001).

Waking and feeding strategies for sleepy babies:

- Changing baby's nappy
- Expressing a little colostrum into a teaspoon will give the baby the 'taste' and may stimulate breast-seeking behaviour
- Unwrapping the baby
- Encouraging skin-to-skin contact.

After an initial sleepy period, it is normal for babies to feed frequently until the milk volume increases. Ensure the mother is aware of this and realises that frequent feeds will give her baby colostrum, stimulate her milk production and reduce the potential for engorgement. The mother who understands the reasons for baby-led feeding is able to breastfeed without watching the clock, and with a more settled baby is likely to be more relaxed and confident.

Persistent sleepiness:

Occasionally, sleepiness may persist beyond the first day or so. The baby may be one of the few who does not wake and demand to be fed. Observation of a breastfeed to exclude incorrect attachment leading to ineffective suckling is important as is monitoring the baby's output and weight loss. If necessary, expressing and feeding expressed breastmilk (EBM) may be initiated.

Crying infants

Crying is a young baby's primary means of communication. A cry is designed to stimulate a nurturing response in others.

Most healthy babies commonly have periods of unsettled behaviour, including crying. Ensure that the persistently crying baby is not hungry or physically uncomfortable.

Identifying the cause of persistent crying and then initiating appropriate measures is the best solution. Step 9 'Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants' is embedded in the 'Ten Steps' and is an integral part of the hospital's Baby Friendly program. The dummy should never take the place of a feed, thus depriving the infant of essential nutrients and caring human contact.

Settling techniques

A baby who cries excessively without obvious reason needs additional comforting. Sympathetic staff can assist the mother and her family with settling techniques. These may include:

- increased mother/baby body contact, cuddling, so the baby feels the mother's heartbeat and her body warmth
- maternal nurturing instincts should be encouraged; too many mothers feel anxious that picking up their crying baby will create bad habits and that the baby will be 'spoilt' – this theory is unsubstantiated

- vocal soothing – talking and singing can be effective
- rhythmic movement or just being carried in a sling can be very calming, however over-stimulation by repetitive jiggling up and down often has the reverse effect
- a warm relaxing bath or baby massage
- some babies and mothers benefit from a quiet, serene environment, in order to feed and settle
- sharing of the workload with partner and family is beneficial.

Unsettled baby

Many babies have unsettled periods, and this should not present a major problem. Unfortunately many new mothers are unprepared for this and assume that they do not have sufficient milk for their baby (Senanyake, Weerawarna et al.1999). Using the Breastfeed Codes can help the midwife and the mother to evaluate a breastfeed more skillfully. If the scores are persistently low, other methods of ensuring adequate breastmilk intake may be needed (e.g. giving the baby some expressed breastmilk) and coping strategies can be suggested.

At this vulnerable time, excellent midwifery skills are needed to reassure the mother that her baby is well, her milk will come in and that the baby is receiving sufficient milk for its immediate needs. All health professionals and parents should be aware that the use of bottles and/or pacifiers for breastfed babies in these early days is counter-productive to the successful establishment of breastfeeding. (Kramer, Barr et al. 2001; Howard, Howard et al. 2003).

Strategies for dealing with unsettled babies:

- Reassure the mother that she has the ability to meet her baby's needs. Many new mothers lack confidence and look to the 'midwife expert' for confirmation that she is doing everything right. This counselling role is an aspect of skilful midwifery, the importance of which cannot be emphasised enough
- Continue to breastfeed as often as baby requires
- During the night, frequent feeds can present a problem for tired mothers. The reality of full time care of a new baby can be a shock to many new parents. It is important that steps are taken to ensure the mother has the opportunity to rest during the daytime. Even a short sleep can restore her energy levels and enable her to meet her nighttime mothering commitments.

Is the mother leaving the baby on the breast until spontaneous detachment?

Sometimes mothers detach the baby once the suckling bursts decrease, assuming the baby has finished feeding. It is important that the baby has the opportunity to 'finish' the first breast before offering the second side.

Does the mother have unrealistic expectations in relation to the feeding pattern of her baby?

Because of the many years of formula feeding in our society, many think babies should sleep three to four hours, in a regular pattern. However, for the fully breastfed baby, this is the exception rather than the rule. The individuality of babies and variation in their appetites needs to be explained (Benson 2001). It can take 6 – 12 weeks for breastfeeding to become established and for the workload to feel more manageable for new parents.

Exclusive breastfeeding

Exclusive breastfeeding of a baby who is well positioned at the breast and allowed unrestricted feeding ensures the infant has the full benefit of breastmilk from birth.

This is important:

- immunologically to prevent or reduce common childhood diseases, such as chest infections and otitis media
- nutritionally for vitamins and minerals
- developmentally to ensure maturation of the intestinal mucosa and brain development.

Effective suckling provides a strong stimulus for the maternal secretion of prolactin and oxytocin, which initiate milk secretion and stimulate the letdown reflex respectively (Lawrence and Lawrence 1999). The breasts respond to the degree of milk removal and the time interval between feeds. Thus, baby-led feeding enables 'supply and demand' to be initiated.

Potential effects of bottles and pacifiers/dummies

The early use of bottles and pacifiers/dummies for healthy full-term babies can interfere with the processes described above in a number of ways.

Teats and dummies:

- reduce the infant's suckling time at the breast thus reducing the amount of prolactin secreted into the mother's bloodstream
- reduce the potential for thorough breast drainage and therefore reduces lactation stimulus while potentiating engorgement and mastitis from an inadequately drained breast. The likely result is delayed or poor establishment of lactation.

Suckling at the breast differs from sucking on a bottle or pacifier, and it appears that some babies have difficulty in suckling effectively at the breast if they are given pacifiers and bottle teats to use – especially in the first few weeks of life (Weber, Woolridge et al. 1986). Early pacifier use is associated with early weaning, possibly because it may be a marker for breastfeeding difficulties or a reduced motivation to breastfeed (Kramer, Barr et al. 2001). Accordingly, it is important to ascertain why the mother is using a pacifier in the first few days, as she may be signaling there is a breastfeeding problem as yet unidentified. For the separated infant, (term and preterm high-risk infants) there appears to be no short-term harmful effects on pacifier use for non-nutritive sucking and it may be useful as a pain management strategy (Penelli, Symington et al. 2002).

When might a dummy be beneficial?

- **Neonatal Abstinence Syndrome** – Some babies cry excessively as part of neonatal drug abstinence syndrome (NAS) and in these circumstances the use of a pacifier (dummy) may help reduce their distress. However, it must never be used as a replacement for human contact
- **Premature babies** – using a dummy satisfies the need for sucking in premature babies and can have a calming effect especially during painful procedures (Young 1997).

Alternatives to bottles and pacifiers

If a baby is not feeding at the breast for whatever reason, it may be appropriate to avoid the use of bottles by giving expressed breastmilk by cup or spoon. A truly hungry baby will settle after feeding. Babies require human contact in addition to food and there are many ways of meeting this need. Settling techniques such as cuddling, carrying the baby in a sling, gentle rocking, quiet music, might provide the comfort needed without resorting to a pacifier.

Detrimental effects of giving formula complementary feeds when not medically indicated.

Definitions –

Complementary feed

A complementary feed is an extra amount of milk given following a breastfeed.

Supplementary feed

A supplementary feed is a feed given to replace a breastfeed.

Giving complementary feeds, whether water, glucose or milk formula where there is no medical reason, has been shown to adversely affect the establishment and maintenance of successful breastfeeding.

For example:

- Giving milk formula increases the risk of sensitising a vulnerable infant to cows' milk protein (Jarvinen and Suomalainen 2001)
- In the case of jaundiced babies, giving extra water or glucose has not been shown to be of any value in reducing serum bilirubin levels (Nylander 1991).

- It also reduces the mother's confidence in her ability to meet her baby's needs and can adversely affect the duration of breastfeeding.

Use of complementary feeds

If the baby is unable to take all feeds directly at the breast, it is preferable that the complementary feed be expressed breastmilk. If formula complements are necessary for medical reasons, its provision should not interfere with breastfeeding.

If a mother chooses to give formula comps to her breastfed baby, she must read and sign the Complementary Feeds Information Sheet to ensure she is making an informed decision. These are available on all the postnatal wards and the hospital intranet (available in 10 languages) and are to be filed with the mother's notes after discharge from hospital.

In rare instances, breastfeeding for healthy term newborns may need to be complemented by formula while in hospital. If these feeds are to be continued after discharge, the mother's competence in formula making and understanding of the principles of equipment sterilisation must be ensured and appropriate follow-up care organised before she leaves hospital care.

Ensure the mother is aware of the community-based services available to her. (*See Community Support Organisations*)

Methods to increase breastmilk supply and reduce formula complementary feeds.

- Expressing breasts after feeds
- Breast compression – This is an effective way to drain milk from breasts. The breasts are massaged firmly towards the nipple whilst expressing or breastfeeding to enhance breast drainage
- Increasing the number of breastfeeds per day (e.g. offering the breast once or twice extra)
- Giving four breasts each feed instead of two. Sometimes called ‘switch feeding’. When the baby starts to ‘flutter suck’ after sucking and swallowing, switch him to the second breast. When he again begins to ‘flutter suck’ bring him back to the first breast and repeat the process. This ensures the breasts are well drained and the baby takes the high-calorie hind milk
- Ensure the mother remains well hydrated. Leave a glass of water within her reach so she can drink when thirst occurs – usually during the breastfeed
- Gradually reduce the amount of the complementary feed by offering slightly less each time, or by not giving the complement at one feed in the day. This will mean the baby will probably seek another breastfeed in a shorter period and will stimulate breastmilk production.

Even if the mother needs to continue to give, for example, one complement per day, this should not be a reason to suggest that the baby ‘might as well be weaned’. The mother should regard herself as predominantly breastfeeding except for one formula feed per day.

Rooming-in

Rooming-in 24 hours a day is policy for healthy mothers and healthy full-term babies at The Royal Women’s Hospital.

Rooming-in assists with breastfeeding by:

- facilitating unrestricted breastfeeding and thus minimising initial weight loss in the first week of life
- allowing conditioning of the let-down reflex as the baby stirs
- helping the mother recognise her baby’s behaviour and feeding patterns.

Sleeping: The baby may sleep in a cot close by the mother’s bed to be within easy reach.

Rooming-in has been shown to have a positive impact on breastfeeding outcomes because of the ready access the mother and baby have to each other and the possibility of more frequent feeding.

The role of the midwife: is to support and facilitate babies rooming-in with their mothers. Breastfeeding guidance combined with rooming-in has a significant positive impact on the successful initiation of breastfeeding

Nursery care: The hospital no longer has routine staffed nursery care. A mother may request that staff care for her baby, for example if she is unwell or if her baby is undergoing phototherapy at night. These babies however, should always be taken to their mothers for breastfeeds. Alternatively, the mother may be helped to express breastmilk to be cup fed to her baby. Night breastfeeds are important in establishing and maintaining lactation and preventing engorgement.

Caesarean section: After delivery by Caesarean section, rooming-in requires extra support from the midwife. (See *Breastfeeding after Caesarean Section*)

Attaching and positioning at the breast

We live in a society where breastfeeding in public is still not encouraged. This has resulted in many new mothers being denied the opportunity to observe other mothers breastfeeding and thus learning by observation. Breastfeeding is a subtle skill, which mothers need to learn.



They do this by:

- being supported by someone who understands how breastfeeding works
- by observing other mothers feeding their babies and
- by practice (McKeever, Stevens et al. 2002).

Teaching mothers about breastfeeding attachment involves:

- assessing and evaluating – actively listening to mothers and observing them breastfeeding to ensure they are positioning and attaching correctly. Use of a doll and breast model and the Breastfeed Codes are useful teaching tools (see Hands Off Technique (HOT) Program)
- giving positive reinforcement
- promoting an understanding of how breastfeeding works i.e. suckling, milk ejection/production
- describing and demonstrating the skills involved i.e. correct positioning using role modeling i.e. with a doll and breast model.

The Hands Off Technique (HOT) Program

One of the major roles of the midwife is to enable the mother to gain independence in caring for her baby. It is therefore important to adopt a teaching role rather than a total 'hands on' approach to breastfeeding and attachment. A model for teaching mothers how to position and attach their babies correctly has been initiated at the hospital.

The HOT Program was introduced in 1995 and since that time there has been a decrease in maternal nipple trauma rates as well as midwifery staff sick leave for lower back pain (Fletcher and Harris 2000). It is a program that has been introduced in other hospital settings with equally encouraging results (Ingram, Johnson et al. 2002). HOT is based upon adult learning principles and aims to give midwives the skills needed to teach mothers how to attach their babies.

This process is enhanced when the midwife uses a doll and breast model to demonstrate positioning and attachment rather than doing the attachment for the mother, thus depriving her of a precious opportunity to practice and learn a very subtle skill. Doll and breast models are available on each postnatal ward and all midwives are expected to be familiar with how to use them.



Picture kindly supplied by H Harris

Positioning and attachment

In an attempt to demystify breastfeeding attachment, the process has been simplified.

The four basic principles to correct attachment imply that:

- 1 The baby must be close to mother and facing her
- 2 The baby's mouth and mother's nipple in alignment
- 3 The mother holds her breast in such a way that the baby can grasp a large mouthful of breast tissue
- 4 The baby's mouth is gaping wide with tongue forward and down in order to be able to take a large amount of breast tissue into the mouth.

Preparing to feed

The mother:

- should be comfortable. She can be either sitting straight and well supported or lying down. She can have pain relief as required.

The baby is:

- unwrapped
- well supported and held close
- facing the mother.

Attaching the baby

The mother:

- supports her breast with her free hand with her fingers well back from the nipple/areola
- holds baby close enough to maintain chin contact with the breast.

The baby:

- exhibits rooting reflex – opens mouth wide
- after the mother has latched her baby to her breast, the baby is stimulated to start suckling when it feels the nipple touching the junction of the hard and soft palate.

Indications of good attachment

- FEEL – a ‘drawing’ sensation may be felt by the mother. There may be some ‘nipple stretch’ soreness in the first few days (peaking day 3 to 6) of feeding. This usually occurs with the first sucks of the feed and eases after milk transfer is evident. The ‘let-down’ itself may or may not be felt by the mother
- LOOK – the baby’s mouth is wide open and the chin is in contact with the breast. The tip of the nose may be touching or free of the breast. Baby’s head is tilted back slightly so that the chin is pushing into the breast
- LISTEN – the baby’s swallows may be audible. There should be a change from short ‘suck/suck’ pattern to deeper ‘suck/swallow’ cycle.

All three indications are used in the Breastfeed Codes.

Indications of faulty attachment:

- FEEL – pain after there has been a letdown of milk indicates trauma is occurring
- LOOK – baby is asleep, not suckling early in feed – nipple is not far enough into the mouth to stimulate a suck cycle
- LISTEN – mother will indicate if pain persists after the baby starts swallowing. If so the baby needs to be removed and reattached. Also there may be unusual noises during feeds if an inadequate seal is formed by the baby’s mouth with the breast e.g. clicking, lip smacking
- Breast distortion or movement during feeding – nipple slipping in and out of the baby’s mouth causing friction and damage
- Baby’s mouth not wide open – cannot take a big mouthful of breast tissue
- Chin not in contact with the breast – too far away from the mother
- Suckling action – suck/swallow pattern not seen – if there is no milk coming into the baby’s mouth there will be no swallowing
- Dimpling of baby’s cheeks – indicates the baby has only the nipple in his mouth, instead of adequate breast tissue
- Prolonged feeds – more than 40 minutes, baby not content after long feed – has not been able to take sufficient milk to satisfy hunger.

Potential outcomes of uncorrected poor attachment:

Baby may have:

- concentrated infrequent urination after the first 3-4 days (Rodriguez, Ventura et al. 2000)
- greater than 10 per cent weight loss in the first 3-4 days or abnormally slow weight gain after this (Gartner 2001)
- frequent feeding, not settling after feeds
- increased levels of physiological jaundice
- infrequent bowel actions and late passage of meconium.

Mother may be prone to:

- milk supply problems – often engorgement followed by low supply due to autocrine control (Knight, Peaker et al. 1998)
- blocked milk ducts, mastitis or breast abscess from poor drainage
- nipple trauma
- early cessation of breastfeeding from pain, exhaustion and frustration.

Action: If faulty attachment is suspected, encourage the mother to detach her baby (a finger in the corner of the baby's mouth to break the seal and release the nipple/areola). Misshaping of the nipple indicates poor positioning in the baby's mouth.

Care of the breastfeeding mother after a caesarean or difficult vaginal birth

The mother will usually require additional assistance to achieve optimal positioning when initiating breastfeeding following an operative or difficult birth.

These difficulties may include:

- restriction of immediate, uninterrupted skin-to-skin contact following birth
- pain following major abdominal surgery or perineal trauma
- restricted movement and possible physical exhaustion of the mother that may affect her ability to care for her baby
- anaesthetic / analgesic drugs affecting the baby's feeding behaviour for several days after the birth (Riordan, Gross et al. 2000)
- mother or baby requiring medical attention that entails separation and possible formula feeds.

Midwives can assist by:

- actively listening to mothers and being supportive of them
- aiming for as early contact as possible between mother and baby
- encouraging 24-hour rooming-in with full assistance as required
- ensuring appropriate pain relief and positioning/supportive measures to minimise pain
- assisting and educating mothers and key support people in relation to positioning, attachment and baby care as required

- assisting and educating mothers in expressing milk and feeding this to their babies if they are not attaching and suckling in the first few days
- avoiding the use of bottles and teats when giving babies expressed breastmilk or formula (if medically indicated).

At the RWH all well women undergoing elective caesarean section can now walk to the operating theatre, and their baby remains with them skin-to-skin in the recovery room. Usually the first breastfeed will take place at this time with the help of the midwife assigned to her care.



Mother breastfeeding while lying on her side. Picture kindly provided by H Harris

While the mother is receiving strong analgesia, the baby must not be left in the bed with the mother unattended. A midwife or competent support person must stay with her for the duration of a breastfeed. If they have to leave, the baby should be placed safely in a cot until they return.

Mothers can breastfeed successfully lying down on their side with baby supported close to and facing them (see *Co-sleeping Policy*).

Breastfeeding multiples

Just as breastfeeding is the method of choice for single births, so it is with twins and other multiple births. The workload for multiple births can be high, constant and exhausting. A mother will benefit from a support network who are prepared and willing to assist with daily household responsibilities so she can concentrate on getting to know her babies, maximising her own rest and on getting breastfeeding established. Mothers of multiples can produce adequate milk for their babies (Saint, Maggiore et al. 1982) and once the art has been mastered, many women find breastfeeding their babies convenient, economical and satisfying. Some mothers with triplets breastfeed all the babies – two together with the third then offered both breasts. Others develop a rotation system of breastfeeding with bottle-feeding.

Care during the antenatal period

Preparation for breastfeeding starts well before the birth. Education, planning and preparation carried out during pregnancy will contribute to successful breastfeeding.

The mother and her partner should be encouraged to:

- gain an understanding of the process of lactation, understand the benefits of breastfeeding for her and the babies and be prepared for the possibility of a pre-term (early) birth
- read some current literature on breastfeeding multiples. The ABA publishes some excellent booklets such as 'Breastfeeding Twins', 'An Introduction to Breastfeeding' and 'Breastfeeding Your Premature Baby'.

- take extra care of herself physically ensuring good nutrition, adequate rest and appropriate exercise to maximise her chances of carrying her babies to term
- be aware that smoking increases the likelihood of premature birth and smaller babies
- become involved in antenatal classes
- contact support organisations such as the Australian Multiple Birth Association (AMBA) These groups may answer many questions for them. Support from an experienced breastfeeding mother may be especially valuable after the birth
- investigate the possibility of securing temporary local council home help or if this is not possible, hiring professional home help even if only for a short time.

Establishing breastfeeding

Ideally breastfeeding should start as early as possible after the birth. However, if there has been a premature birth, there may be a delay before direct attachment is possible.

If mother and babies are well at birth, the babies can be offered the breast as soon as possible.

If the babies have been transferred to the Special Care Nursery, the mother is shown how to express her milk so she can establish and maintain an effective milk supply. Expressing starts soon after birth and continues on a regular basis. If only one baby is admitted to the Special Care Nursery, the remaining twin can be breastfed at each feed. As the milk ejection reflex releases milk, the other breast can be expressed while the baby feeds. Expression is done manually until the milk comes in, then by hand or electric pump if preferred.

Simultaneous versus individual feeding

The condition of both mother and babies can influence this decision.

Possible maternal influencing factors include:

- degree of recovery from labour and birth
- medications given during labour
- prenatal breastfeeding preparation
- previous breastfeeding experience
- support systems available.

Possible infant influencing factors include:

- gestational age and individual weight
- suckling ability
- medical condition.

All of these factors can affect the effectiveness, frequency and duration that each baby is able to feed.

Feeding the babies together allows the mother more time between feeds but some mothers may initially prefer to feed each baby individually.

If the babies are small, or not suckling strongly at the breast, it may be necessary to express and feed expressed breastmilk by cup or gavage. Breast compression is also an effective way to increase milk transfer, but the milk must be 'in' before it can be accomplished satisfactorily.

Breastfeeding positions

As long as the principles of good attachment are followed, it does not matter which position the mother uses to attach her babies. Some mothers prefer a 'football or under-arm hold'.

While in hospital the mother may need extra support from midwives while she is learning to correctly attach her babies. It is important she is comfortable, with a cool drink and her call bell within easy reach.

If she is sitting out of bed, a footstool can reduce strain on her back and abdominal muscles. Provided the positioning is right, the mother can use both hands to attach the first baby and then, after effective suckling has begun, attach the second. Once they are both attached and suckling well, she has both hands free to attend to either infant when required.

Monitoring baby's progress

The mother as well as her midwife must be able to assess her baby's feeding progress. This involves accurate observation and documentation.

The following signs can help assess adequate breastfeeding.

Baby's behaviour

The baby is generally contented after feeds and settles to sleep. Most babies have an unsettled period sometime during the day (often late evening or night), when they want to feed frequently. This is normal, and should not be seen as 'running out of milk' as milk production is continuous over the 24-hour period.

Newborn breastfed babies can feed between eight to ten times or more every 24 hours. Some mothers expect a baby to feed four-hourly and they need reassurance that this is not a common pattern of feeding in the early days. The gastric emptying time for breastmilk is about 1.5 hours, so it is understandable that babies feed frequently (Woolridge, Baum et al. 1982). Additionally, the composition of human

milk – high in sugars, low in fats – means it is digested more quickly than formula, resulting in the baby seeking frequent feeds.

Urine output

There is a popular saying – “If it's not going in the top, it won't come out the bottom.”

At birth the bladder contains urine, which may be emptied immediately, or several hours later. As the milk volume increases, the baby's urine output also increases, with the nappy soaked with pale or colourless urine. (Six to eight wet cloth nappies a day once the milk comes in. With the growing use of disposable nappies, it is often more difficult to assess urine output. The nappy should feel as heavy and 'spongy' as if it is soaked with 3 tablespoons of water (Wilson-Clay and Hoover 1999). If the urine is scant and a strong yellow colour, this suggests a poor fluid intake and review of the feeding frequency and a breastfeeding assessment should be done.

A brick-red stain sometimes found in the nappy is due to the deposition of uric acid crystals. It is sometimes called 'brick dust' urine and is an indicator that the baby has not had a large fluid intake. Reassure the mother it is not blood and will disappear as fluid intake increases.

Signs of severe dehydration are:

- sickly appearance
- not responsive
- listless and sick appearance with a grey or pale skin colour
- oral mucosa is dry, and the fontanelles sunken
- loss of skin turgor.

Bowel actions

The first bowel actions are meconium. After 24–48 hours of feeding, the meconium lightens in colour to a greenish-brown and becomes less sticky and more liquid – the transitional stool. The totally breastfed baby's stool is mustard yellow and unformed. Reassure the mother this is normal and not a sign of diarrhoea. At times, it contains small curds, at other times, it has a 'mushy' consistency and is greenish yellow to mustard yellow. A healthy term baby still passing meconium at four to five days is not receiving enough milk, is probably losing weight and may be significantly jaundiced.

It is normal for the number of bowel actions to vary in frequency. Some breastfed babies may use their bowels after each feed while others may not. In the early days, daily bowel movements are an indication of satisfactory breastmilk intake. If there is not stooling at least once every day in the first few weeks, there is probably not enough milk intake.

Baby's weight

In hospital the baby is weighed at birth and on discharge. The breastfed baby is adapted to take only small amounts of colostrum until the milk 'comes in' at about 30 hours (Kulski and Hartmann 1981; Muzkinja-Montanaji, Molnar-Sabo et al. 1999). Thus an initial weight loss of up to 10 percent of birth weight is not unusual. This is due to the passage of meconium and loss of water by evaporation (Muzkinja-Montanaji, Molnar-Sabo et al. 1999).

The infant who is feeding well will begin to regain weight in the first week. Usually the birth weight has been regained by two weeks of age.

If the baby appears happy and healthy, there should be no immediate cause for concern about any fluctuation in weight. However, if the weight is static, or there is weight loss on two consecutive occasions, then a review of the feeding frequency and a breastfeeding assessment should be completed (*see Assessment of a Breastfeed*). Remedial action should be taken.

Length of feeds

Babies will naturally regulate their intake by feeding for a length of time that is appropriate to the rate of milk transfer. Babies who feed for a short time, then settle and are gaining weight, are receiving milk more quickly. Where milk transfer occurs more slowly, babies will need to feed for much longer. Therefore it is not advisable to tell a mother how long to feed and there are no rigid rules on the length of feeds at any time in the postnatal period.

Weight gain

The baby's weight increases rapidly over the first three months then the rate of gain slows gradually. The average weight gain is around 150–210 grams per week, though this may not necessarily be uniform each week. The actual growth pattern can best be seen at monthly weighing – weekly weights can vary greatly and mothers need reassurance that their baby is thriving even when weekly weight gains are variable. Assessment of an infant should incorporate overall growth, including length and head circumference, behaviour, output and genetic considerations.

Mothers who are formula feeding

If formula feeding is implemented, the mother must be supported and enabled to gain skill, confidence and pleasure in caring for her baby. Before discharge, the mother is taught how to safely reconstitute formula and how to sterilise the equipment.

All tuition must be on a one-to-one basis – no group tuition for formula making is permitted at the RWH.

Breastfeeding in hot weather

In hot weather, the breastfed baby may 'ask for' extra breastfeeds. These short feeds provide extra fluids for the baby. If the baby is allowed free access to the breast, there will not be a requirement for additional fluids.

The mother can be reassured that the baby is getting enough fluid if:

- there are at least six pale urine soaked nappies every day (if using disposable nappies, this is harder to assess, but the nappy will feel heavier when it is wet – the equivalent of three table-spoons of water)
- her baby is usually passing at least one yellow, 'mustard seed' loose stool every day (usually more often) in the first few weeks.

Discharge advice

The midwife's role involves:

- emphasising the importance of good nutrition and adequate rest for the breastfeeding mother. Being so busy, it is easy to overlook making time to rest and eat properly
- ensuring the mother and her family are aware of the extra emotional and physical demands on mothers of multiples. Fatigue can increase if a mother is visiting any hospitalised babies and again when all the babies are discharged
- encouraging the mother to accept any offers of help and to ask for additional help when necessary. Her major task for the first few weeks is to establish breastfeeding and get to know her new family. It is unrealistic to expect any more than this in the early weeks after discharge
- suggesting ways to manage any other children, especially toddlers
- encouraging the mother to join a community support group like Australian Multiple Birth Association (AMBA) or ABA for support, social contact and information.

The mother who breastfeeds multiples can find considerable long-term benefits. She has a strong sense of satisfaction in her achievement and economic saving both in the short-term (not having to buy formula and equipment for safe bottle feeding) and the long-term (healthier children).

Going home

The breastfeeding mother ideally will leave hospital feeling confident she can breastfeed.

She should understand:

- how to correctly position and attach her baby to the breast
- the rationale for demand feeds
- how to recognise her baby's hunger cues
- the potential detrimental effects of giving formula complementary feeds when not medically indicated
- where to access help for breastfeeding problems if these should develop.

If a commercial gift pack is given to mothers on discharge it must not contain formula samples, feeding bottles, teats or pacifiers, all of which can interfere with successful breastfeeding and are in contravention of the Baby Friendly guidelines.

Breastfeeding literature and information about community support and facilities should be available to each mother on discharge.

The hospital domiciliary midwifery service and the community maternal and child health nurse will continue to assist her and monitor the baby's progress.

Section 4 – Breastfeeding and extra care

Section 4 – Breastfeeding and extra care

Breastfeeding and extra care

Most human endeavours are challenged by unexpected complexities and breastfeeding is no exception. Some problems are identified antenatally i.e. an infant with a cleft palate; others develop early i.e. nipple trauma and yet others are completely unexpected i.e. prematurity.

Regardless of aetiology, the initiation and establishment of breastfeeding is the goal and this section discusses a range of options and management practices to assist you to facilitate a successful outcome.



Management of breastfeeding problems

Many early breastfeeding problems can be avoided with consistent, correct advice and support. Problems can usually be minimised with prompt careful assessment and subsequent correction. Two important ingredients for breastfeeding success are 'persistence' and 'confidence'.

Assessment is made by listening to the mother, observing the breastfeed, assessing the mother and baby, then through consultation with the mother and others, devising an appropriate, workable care plan.

Assessment includes an awareness of factors which may be having an effect on the current breastfeeding episode (Binns and Scott 2002); for example:

- maternal condition: e.g. caesarean section
- baby condition: prematurity, illness or congenital conditions affecting optimal breastfeeding
- breast or nipple variations: inverted/flat nipples, pendulous breasts, previous breast surgery especially breast reduction
- past history of breastfeeding or lactation problems
- type of birth
- use of analgesia in labour.

Nipple pain and trauma

It is not uncommon for the new mother to report pain or discomfort when beginning a breastfeed in the first few days after birth. This is a temporary stage that disappears with milk letdown. If a baby is well positioned at the breast, this phenomenon should have resolved by the end of the first week.

Nipple pain during a breastfeed is not normal and indicates there is a problem. The most common cause of nipple pain is trauma caused by incorrect positioning and attachment.

Nipple trauma can include:

- grazes
- fissures and 'stripes'
- other misshaping of the nipple due to abnormal nipple compression.

Causes

- incorrect positioning and attachment
- engorgement
- nipple variations – flatness, retraction, inversion or other abnormalities
- incorrect suckling action
- abnormal skin conditions of the nipple – thrush, eczema, dermatitis, psoriasis.

Prevention

If poor attachment is not rectified, it can lead to:

- trauma of the nipples
- poor breast drainage predisposing to engorgement, blocked ducts and mastitis
- early weaning.

Some measures to help keep the nipples supple and healthy are:

- avoid over-use of soaps and other drying agents when washing
- air dry the nipples after a breastfeed
- express and rub small amounts of breastmilk onto the nipple after a breastfeed
- avoid the use of plastic-backed nursing pads, which may keep the nipples wet and macerated, creating an environment conducive to an overgrowth of *Candida albicans* and bacteria (Amir and Hoover 2002).

Management

Identify what is causing the pain. If the problem is due to poor attachment, enable the mother to improve this. The best attachment involves the baby grasping a large mouthful of breast tissue, thus ensuring the nipple is drawn to the back of the throat, away from potential harm caused by gum and tongue friction (Woolridge 1986).

Allowing the nipples to dry after feeding. Some mothers choose to use breast shells (hard plastic domes with holes) or Nipple Ease (similar but smaller). These are fitted between the nipple and the bra and not only allow circulation of air around the tender nipple, but stop further trauma by preventing the nipples rubbing against clothing.

Moist wound healing – the principles of moist wound healing entail keeping damaged skin moist (but not wet) enabling better migration of new cells across the traumatised surface (Simpson 1998). Application of small amounts of a highly refined lanolin from which all the water, free lanolins and alcohols has been removed can be beneficial. It is an emollient, which restores moisture to the cells while allowing transpiration. Because it is hypoallergenic, it is harmless to the baby and does not need removal before each breastfeed. As a scab does not form over the damaged nipple, there is a concurrent drop in pain perceived by the mother. This may enable breastfeeding to continue where otherwise it might have been suspended.

Taking the baby off the breast because of painful nipples and expressing is not a decision taken lightly. Effective removal of milk is essential to avoid engorgement, mastitis and a later potential drop in milk production.

If it becomes necessary to interrupt breastfeeding because of pain, breast expression must start promptly. This is preferably done by hand as there is potential for causing further nipple damage with pumps. An electric pump with a high suction can pull the healing tissue apart thus delaying healing.

Nipple variations

Most women's nipples are perfectly adequate for breastfeeding, no matter what size or shape. For a small number of women, however, nipple variations such as non-protractile or inverted nipples can present some initial breastfeeding problems. The mother needs to be reassured that as breastfeeding progresses and her baby grows in size and strength, her nipples will often become more protractile.

Types of variations

- **Shape:** nipples can be flat, retracting, 'dimpled' inverted or misshapen. This can be inborn or as result of surgery or injury.
- **Size:** nipples can vary from very small through to very large (in width and/or length).

Care of the woman with a nipple variation

- ***Breastfeed and keep mother and baby skin-to-skin during the first hour after birth.***
A healthy newborn is usually alert and ready to feed shortly after birth. Early correct attachment and suckling can help prevent the development of breastfeeding problems.
- ***Inability to attach the baby effectively to the breast.***
If attachment is not initially successful, express the colostrum and feed the baby using a cup or a spoon. Frequent, thorough expression is essential for adequate lactation. After the milk 'comes in', a nipple shield may be effective in enabling breast attachment if nipples are flat or inverted.

- ***Avoiding suck confusion***

Studies have shown that a baby's suckling technique for breastfeeding and bottle teat feeding is different (Weber, Woolridge et al. 1986). If the mother intends to breastfeed, it is advisable to avoid using teats in the first few weeks of breastfeeding as some babies may become confused between different sucking techniques, leading to attachment difficulties.

Other nipple problems

Candida (thrush)

Thrush is a fungal infection, which can affect the nipples and lactiferous ducts (Amir, Garland et al. 1996). It is commonly diagnosed by symptoms and maternal history, as it is very difficult to obtain microbiological confirmation from nipple swabs and milk specimens. Although nipple thrush is only seen occasionally during the postpartum hospital stay, the symptoms appear to become more common within a week or two of birth. Its contribution to mastalgia is controversial, thus it may not be recognised and/or adequately treated. The distress and pain the mother experiences can cause her to prematurely wean her baby. Recognition of the problem and thorough treatment can help to avoid this.

Predisposing factors for nipple thrush include:

- recent history of vaginal thrush
- recent history of antibiotic use (i.e. often given prophylactically following caesarean birth)
- nipple trauma
- maternal health issues – e.g. diabetes
- infant oral or perianal thrush.

Signs and symptoms

Mother

Nipple pain:

- continuous throughout the feeding
- not altered by correct attaching and positioning of the baby at the breast
- often described as ‘burning’, ‘shooting’ or ‘like glass in my nipples’
- nipples can also be sensitive to cold and temperature changes

Nipple appearance:

- often unremarkable, just a brighter pink than usual
- alternatively the nipple may be severely traumatised, sometimes with deep fissures.

Breast pain (mastalgia):

- shooting, burning pain, like ‘red-hot needles’
- radiating from behind the nipple towards the chest wall/back
- present during a feed, or after a feed is finished.

Baby

- may have oral thrush – white spots/film on tongue, buccal mucosa and gums, that cannot be wiped away
- may have perianal cutaneous thrush – red and raw skin areas on the buttocks not responding to treatment.

NB. Even if the baby does not have signs or symptoms of oral thrush, the mouth may be colonised and thrush can be transferred to the mother’s nipple during feeding.

Treatment:

The current approach to treatment can include topical and systemic medication. It is important that treatment be continued for an adequate length of time. If the mother ceases treatment because symptoms subside, they may reappear. She should be aware that it might take a few days of treatment before there is major pain relief.

Mother

- An antifungal ointment (e.g. nystatin) cream (miconazole) or oral gel (miconazole) can be prescribed and applied to the nipples after feeds. Airing the nipples or leaving off the bra may help healing
- A course of oral nystatin or fluconazole capsules may be prescribed if the Candida symptoms persist
- If the symptoms persist, apply aqueous gentian violet (0.5%) to the nipples twice a day after feeds for 3-7 days only (Hale 2002). Apply sparingly using a clean cotton bud – one coating (not repeated applications). It does not need to be washed off before feeding.

- If the mother has confirmed vaginal thrush, she will need to use appropriate vaginal pessaries or cream
- If nipple thrush has been diagnosed, it is important that both mother and baby are treated simultaneously.

Baby

Antifungal medication (miconazole oral gel or nystatin drops) is prescribed for one to two weeks. If the baby has thrush on the buttocks, an antifungal ointment will also be needed.

General measures

Hygiene

- The mother needs to ensure that she washes her hands thoroughly before touching the breasts and after changing the baby's nappy
- Bras, underwear, nursing pads and baby's nappies – soak in hot water before washing separately, until all signs and symptoms resolve
- Pacifiers (dummies) – if used, should be boiled daily and replaced after one week.

Diet

- It appears that avoiding sugar and highly processed foods and alcohol as well as dried fruit, cantaloupe, grapes, peanuts may help. This restriction does not extend to other fresh fruits and juices
- It may be helpful for the mother to take acidophilus powder/capsules or eat some plain natural yoghurt each day (it contains *Lactobacillus acidophilus* and helps restore normal flora to the intestinal tract).

Other nipple skin conditions

Two common conditions are eczema and dermatitis (Lawrence and Lawrence 1999). There are three main types – atopic eczema, contact dermatitis and allergic contact dermatitis. Contact dermatitis of the nipple and areola may be due to:

- ointments or other topical applications the mother is using
- laundry detergents
- skin sensitivity to soap or shampoo
- reaction to the bra fabric.

Management

- stop all local applications of creams/ointment
- avoidance of soap or shampoo, washing the bra with pure soap and airing the nipples may help
- seek medical advice if the skin does not improve.

Eczema/psoriasis

This can cause major problems and referral to a skin specialist is advisable. A short but intensive course of cortisone ointment may be prescribed. It is vital that any nipple/areola eczema be treated well before the baby is born, to avoid the possibility of further nipple damage. Eczematous skin is often very dry and itchy, easily broken with scratching. Many women have found relief from applying hypoallergenic lanolin to the area, which returns emollience to the skin and reduces the itching. However usually a course of cortisone cream will be necessary for complete resolution. Because the baby should not ingest cortisone, it is important that treatment be completed during the pregnancy to avoid the possibility of having to express and discard breastmilk contaminated with cortisone cream after the baby is born.

Herpes

Viral infection such as herpes simplex lesions is infectious. Breastfeeding should be possible providing the baby's mouth does not come in contact with the lesion. If the herpes lesion is elsewhere on the breast, cover it with an occlusive dressing during breastfeeding to safeguard the baby from infection. If there is any possibility the milk may become contaminated from the lesion, it should be discarded until the lesion is healed.

Milk supply

Efficiency and frequency of infant breastfeeding governs milk supply. Over-supply or under-supply of breastmilk is rarely caused by primary problems with lactation processes or breast structure.

Oversupply

If the baby is not removing milk effectively there can be breast engorgement in the initial stages. This should not be confused with oversupply. It is not uncommon for some women to leak milk in the early stages of lactation – this is not necessarily an indication of oversupply. Initial oversupply is usually associated with flawed feeding practices e.g. timed feeds, poor attachment, excessive expressing. Anecdotal evidence exists where mothers having read breastfeeding literature that states the breasts must be 'emptied' have consequently expressed after each breast feed, and have experienced significant oversupply.

Management techniques include:

- adequate analgesia e.g. paracetamol
- temporarily (24 hours) feeding on one breast only per feed i.e. if the baby seeks feeding in less than two hours offer the same breast. This will enable the infant to obtain some of the higher energy hind milk
- symptomatic relief – cold flannel or ice packs for 20 minutes at a time, analgesia, breast support
- experienced mothers find that if they allow the opposite breast to leak whilst breastfeeding, this relieves breast congestion and engorgement is either avoided or very transient
- reassurance that this is a temporary problem, which will resolve
- express the breast just enough to soften around the areola to enable successful attachment
- the breast may also need to be expressed (for comfort only) after feeding. Refrigerate the expressed milk for future use.

Undersupply (actual or perceived)

'Undersupply' is the one of most common reasons given for premature weaning (White, Freeth et al. 1992) so it is imperative the condition is diagnosed accurately and if confirmed, managed appropriately. Persevering until a breastfeeding problem is resolved is allied to three factors – attitude to breastfeeding, feelings of control over a situation and the attitude of the mother's personal and professional support. Reassurance and a clear appropriate management plan within a reasonable timeline are essential.

Causes of undersupply:

- **Poor attachment.** If the baby is not attaching properly, delayed removal of colostrum may delay lactogenesis. If there has been an inadequate breastfeed e.g. the baby is unsettled or too sleepy to attach, the breasts should be hand expressed and the colostrum given via a cup or spoon
- **Inadequate feeding.** If the baby is not feeding adequately or frequently enough and the milk is not being removed from the breast, there will be engorgement followed by a reduction in the milk supply several days later
- **Use of formula and dummies.** These reduce suckling time at the breast, and will eventually lead to a reduction in milk supply
- **Insufficient breastmilk tissue.** May be:
 - Primary – Mother was born with small amount of breast tissue (hypomastia)
 - Secondary – Surgery such as reduction mammoplasty.
- **Medical reasons,** for example, severe anaemia, maternal medications, thyroid dysfunction. If all efforts to increase lactation are unsuccessful, referral to a medical practitioner knowledgeable in breastfeeding related issues is recommended.
- **Maternal smoking.** The hospital has a smoking assessment form in the hand-held patient record with a pathway of management outlined.

Management of undersupply:

- Express regularly after feeds (at least six times in 24 hours) to stimulate milk production
- Ensure baby is well attached and there is a milk transfer occurring. (*See Breastfeed Codes*)
- Breastfeed or express at least once overnight
- Maintain a good diet and rest when possible
- Treat any underlying medical conditions
- At times a galactagogue may be prescribed (*See Drugs, Section 6*).

Engorgement

Engorgement means 'congestion' where the breasts become overfull, painful, hard, and often results in a poor milk flow and sometimes difficulty in attaching successfully. A study in Britain showed that engorgement is one of the most common reasons for mothers to wean in the first week after birth (White, Freeth et al. 1992). It is therefore vital this condition is managed appropriately.

There are two major types of engorgement related to the causation:

Vascular

After the delivery of the placenta, the lowered circulating placental oestrogen enables prolactin to act. Prolactin is responsible for the synthesis and secretion of milk. For this to occur there is an increase in blood flow to the breasts. The degree of engorgement is dependent upon the extent of individual breast changes in the first two to four days and is not caused by breasts overfull with milk.

Milk

Vascular engorgement and milk production can overlap. Milk is stored in the alveoli. Oxytocin, released by suckling, causes the myoepithelial cells surrounding the alveoli to contract and push the milk forward towards the nipple. If there is reduced suckling at the breast or poor attachment, the alveoli can become over-distended, causing the milk secreting cells to become flattened, elongated or even to rupture. The over-distension makes it impossible for the myoepithelial cells to contract effectively (Akre 1989). In some women the pressure of milk within the alveoli may be high enough to push milk substance into capillaries or connective tissues. This activates the immune system and causes symptoms of inflammatory mastitis.

Management of engorgement:

- Unrestricted suckling – no limitations on frequency and length of feeding, no pacifiers or bottles. The baby suckling effectively at the breast brings relief
- Correct positioning and attachment – expressing a little milk first may soften the areola sufficiently for easier attachment. Correct attachment is important to prevent nipple trauma and to facilitate milk removal
- Many mothers find it easier to express under a warm shower or alternatively by applying warmth to the breast before feeding
- Gentle massage/stroking towards the nipple can also assist with drainage.

Symptomatic relief:

- Simple analgesia. e.g. Paracetamol
- Treatment using cabbage leaves, cold packs or ultrasound showed there was no difference in improvement of symptoms. The most effective treatments were massage and heat (Snowden, Renfrew et al.2001). Breast support – the bra should not be too tight. Some women find it more comfortable not to wear a bra while others prefer light support such as a T-shirt tied under the breasts, or a crop top. Pinning two pairs of large knickers together can make a simple and comfortable vest ('knickers bra').



Photo kindly supplied by H Harris

- A temporary strategy may be to offer the same breast twice i.e. if the baby requires a feed more than once in a two-hour period the same breast is offered instead of the alternate breast. After two hours rotate feed to the opposite breast. This practice can be tried for 24-48 hours.

- If engorgement causes complete stasis of milk removal, a regime of analgesia, cold packs, massage and gentle hand expression may be necessary. Midwives are often concerned about expressing and stimulating further milk production. Expressing for comfort now and then will not have much impact on milk production but expressing regularly will boost the milk supply.
- Allow the opposite breast to drip whilst breastfeeding/expressing. Mothers report this will often relieve the pressure by letting excess milk drain away naturally with the let-down reflex.

Blocked milk duct

A blocked milk duct presents as a reddened area or segment of the breast, which feels tender, painful and hard. There are no systemic symptoms such as fever and rigors as there are with mastitis. However, it is important to clear the blockage or mastitis may develop.

Predisposing causes:

- Inadequate breast drainage. This may be due to poor attachment or inadequate suckling
- Engorgement due to a missed feed
- Unrelieved pressure:
 - a tight or ill-fitting bra or other clothing
 - constantly lying on one side during sleep
 - mother holding breast too tightly during feeding
- A white spot may sometimes be visible on the nipple, causing occlusion of the duct.

Treatment:

- The baby feeding effectively may clear the blocked duct
- Offering the blocked breast first for 2-3 feeds. The second breast may need expressing if inadequately drained during this management.
- Applying heat and gentle massage towards the nipple during the feed
- Unrestricted breastfeeding, with no use of pacifiers, should continue
- Express to keep the breast well drained
- If the above measures do not resolve the problem or it appears to be worsening, seek advice from a lactation consultant or medical practitioner.

Change feeding position for:

- blocked lateral aspect of breast – mother lies on her side with the blocked breast upper most to encourage drainage. The baby then feeds from the affected breast
- blocked duct on the lower aspect of the breast – mother kneels over her baby to feed so breast hangs forward.

Mastitis

Mastitis is an inflammation of the breast tissue. Risk factors associated with mastitis in an Australian study (Fetherston 1998) showed that stress and blocked ducts were two significant predictors. A previous history of mastitis, use of a hand pump and shorter frequent feeding in the week before the mastitis occurred are also significant indicators (Foxman, D'Arcy et al. 2002).

Inflammatory mastitis

This results when there is a blockage in a duct preventing milk removal. The banked-up milk is forced into the surrounding breast tissue, which becomes inflamed. It is at this stage that the mother may experience flu-like symptoms such as rigors, joint aches and fever. A treatment regime should begin immediately.

Management:

Breastfeeding (or effective milk expression) should continue from the affected breast. If milk stasis is not relieved, the mastitis will worsen and provide ideal conditions for pathogenic bacteria to grow and cause infection.

During the later months of lactation some women suffer from repeated bouts of mastitis. This may be due to recurrent blocked milk ducts, or there may be no apparent cause. These women become skilled at recognising the early signs and symptoms of mastitis and by draining their breast thoroughly and frequently, can avert a full-blown bout of mastitis and course of antibiotics. *However, when advising women in these circumstances, it is important that:*

- the mother is an experienced breastfeeder and can express competently
- if there is no improvement within eight to twelve hours or it is becoming worse before then, she must seek medical advice.

Infective mastitis

The most common bacterial organism of infective mastitis is *Staphylococcus aureus*.

This results from one of two conditions:

- an overgrowth of pathogenic bacteria
- conditions that prevent the body from destroying and excreting such bacteria that have access to breast tissue.

Such conditions are caused by:

- delayed or inadequate resolution of a blocked duct or previous mastitis
- cracked or fissured nipples
- chronic oversupply
- incorrect positioning and attachment
- ductal abnormalities or scarring, which does not allow complete drainage of a segment of the breast
- general poor health (stress, fatigue, poor nutrition, anaemia)
- using plastic-backed breast pads that encourage maceration of nipple and areola skin.

Signs and symptoms:

The appearance of an infected breast differs from that of a blocked duct only in degree. The breast is usually red and swollen, hot and painful. The skin may appear tight, shiny, red and oedematous. The woman feels very ill, has flu-like symptoms and has an elevated temperature – over 38.5°C.

Treatment of mastitis should start immediately:

- The mother should consult a doctor
- Continue breastfeeding if at all possible
The breast should be kept well drained by feeding frequently and expressing if necessary. It may be appropriate to feed from the affected breast first (be careful not to ignore the other breast however, as it may also become engorged)
- Appropriate antibiotics (e.g. flucloxacillin, dicloxacillin or cephalexin. If allergic to penicillin, clindamycin can be prescribed)
- Adequate analgesia. Either paracetamol or a non-steroidal anti-inflammatory analgesic may be given
- Adequate fluids and rest. (The mother will need help with household chores and care of other children)
- Varying the feeding position. Attaching the baby so that the chin is positioned toward the affected area can facilitate drainage
- If there are signs of systemic sepsis i.e. pyrexia >38°C, rigors, sweating, nausea/vomiting, rash, lymphadenopathy, the mother may need to be admitted to hospital for i.v. antibiotic therapy or alternatively commence Hospital in the Home (HITH) care.

If the mother wishes to wean, it is better to wait until the mastitis is resolved as there is a high risk that poor drainage of the affected breast can lead to formation of a breast abscess. The weaning process should be gradual after the mastitis is resolved.

Breast abscess

A breast abscess is a serious condition occurring as a result of untreated or inadequately treated mastitis or it can develop when a mother suffering mastitis decides to wean abruptly.

A breast abscess requires immediate medical attention. Usually needle aspiration can be used (Dixon 1988) but occasionally surgical drainage is required under a general anaesthetic.

Unless the site of surgical incision is on the areola, or there is purulent discharge from the nipple, immediate post-operative breastfeeding will aid healing by avoiding engorgement and keeping the breastmilk flowing.

Care is necessary to ensure the dressing does not impinge on the nipple and the baby is positioned away from the wound. A hydrocolloid dressing will aid healing, absorb discharge and because it is thin, interfere less with achieving good attachment. It may be useful to consult a wound care expert for advice on the best dressing. Many hospitals now employ nurses with this expertise and training.

It is not uncommon for milk to drain from the wound for some weeks post-operatively. Reassure the mother that this is normal and will cease when the wound heals. Breastfeeding can continue.

Blood in breastmilk

Some women have a bloodstained discharge from the nipple in the first days after birth. When a baby possets bloodstained milk following a breastfeed, the most common cause is bleeding from nipple trauma. Small amounts of blood usually are tolerated by the baby however, if a moderate amount has been swallowed, there may be associated vomiting.

Provided the mother has no blood-borne viral infections like hepatitis C or HIV, there is no reason to discard bloodstained milk, as it is quite safe for the baby. Reassure the mother that a small amount of blood will not harm the baby and breastfeeding or expressing should continue.

If blood persists after several days there might be another cause and medical referral is recommended. Rarely, it may be due to a ductal papilloma. Even more rarely, it may be a sign of other breast disease.

If uncertain, test for fetal/adult haemoglobin (see *RWH Intranet website*).

Coloured milk

Sometimes the mother's milk will be of an unusual colour. Some women may have milk ranging from orange to green, brown or even grey. This milk is quite safe for the baby and provides the same essential nourishment of more conventionally coloured milk. Management involves reassuring the mother and continuing breastfeeding (Lawrence and Lawrence 1999).

Weaning

When a mother decides to stop breastfeeding, she needs to know how to do this safely.

If breastfeeding is well established, weaning should be gradual, reducing feeds over a week or more. The usual advice is to omit one feed a day, wait a few days then omit another feed, so the breasts do not become engorged and the potential for mastitis is reduced.

If a mother decides to stop breastfeeding because of major problems, it is important she does not stop abruptly as this can lead to engorgement, mastitis and even breast abscess. If she does not wish to, or cannot continue to breastfeed, she should be encouraged to express her breastmilk for comfort. Any expressed breastmilk should be given to her baby. If formula is also needed, the EBM is given separately first and never mixed with formula. She can gradually express less often, removing less milk each time. Fluid intake does not need to be reduced.

When a mother chooses to wean because of breastfeeding problems, she may experience a mixture of emotions – disappointment, relief, sadness, and guilt. These are natural reactions. It is important for staff and others in contact with her to be sensitive to her emotional needs. Talking with a trusted, empathetic person, who has an understanding of breastfeeding and its implications, can often help bring a more balanced perspective. Issues for discussion might include whether to breastfeed future babies and ways of preparing herself to avoid a repeat of the situation. Antenatal counselling in the next pregnancy should be available. (*See previous breastfeeding history*)

Breastfeeding babies with special needs

Down Syndrome

The benefits of breastfeeding assume extra importance for babies with Down Syndrome. Many of these children breastfeed successfully, with patience and support. The holding and skin contact involved during breastfeeding provides beneficial stimulation. These babies are susceptible to upper respiratory tract infections, and breastfeeding helps protect against and minimise these.

Babies with Down Syndrome can have diminished muscle tone which may affect their suckling abilities although this is not always so. Sometimes using the Dancer hold can assist better attachment at the breast (Danner and Cerutti 1990). This technique requires the mother to cup her breast from underneath, slide her hand forward and cradle her baby's chin in the bottom of the 'U'. This then supports the baby's lower jaw and enables him to suckle more effectively.

The mother and her family will need extra assistance and nurturing from midwives. Information and contact numbers of the local Down Syndrome Support Group should be provided (*See Community Support Organisations*). After discharge, referral to a breastfeeding day program such as BESS can also be very beneficial for longer term follow up and support. The ABA also has some excellent publications on breastfeeding babies with Down Syndrome.

Cleft lip and or palate

The baby with a cleft lip and/or palate should be treated as an otherwise normal baby who has specific feeding needs and who will require reconstructive surgery in the future.

The mother will require extra assistance and support from staff. Feeding the baby will require patience and special skill. Attempt breastfeeding if possible, as suckling strengthens the tongue, cheek and jaw muscles. Babies with cleft palates are more prone to otitis media and even if breastfeeding is not possible, providing breastmilk helps protect the baby against infection.

Unilateral cleft lip

This does not usually preclude breastfeeding, especially if the mother has soft malleable breast tissue. Position baby so that the breast is wedged into the cleft, thus providing an airtight seal. The mother may need to hold the breast to maintain the seal or wedge her thumb against the cleft (Danner and Cerutti 1990).

After surgical repair, breastfeeding should be attempted as soon as possible.

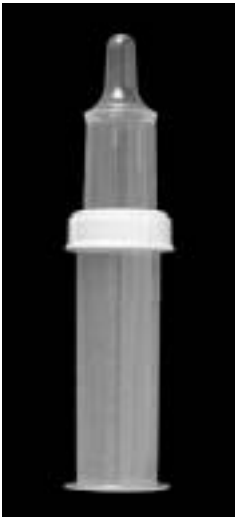
Bilateral cleft lip

Effective breastfeeding is usually not possible because an airtight seal around the lips is almost impossible. However, this should not prevent the mother offering the breast, as breastfeeding is more than a mere transfer of calories. Both mother and baby can derive much comfort from skin-to-skin contact. There have been cases of these babies breastfeeding with breast compression (*see Breast Compression*) assisting their milk intake.

Cleft palate

When the cleft is substantial, unassisted effective breastfeeding is usually impossible because the baby cannot create a vacuum due to an inability to achieve an airtight seal. A baby with a small cleft in the soft palate, however, may be able to suckle effectively.

Using a Haberman Feeder can be an effective way for the baby to receive expressed breastmilk. The Haberman is a specialised teat and it is vital the mother is taught how to use it properly.



Haberman Feeder

Staff should provide information and contact numbers for CleftPals Support Group before discharge. (See *Community Support Organisations*)

Breast compression

Teaching mothers breast compression whilst breastfeeding is a practical way of increasing effective milk transfer when babies have an ineffective suck or are sleepy. This simple technique involves the mother firmly pressing the flat of her hand high up on her breast, and towards her nipple during breastfeeding. The firm pressure causes a bolus of milk to flow down the lactiferous ducts towards the nipple. Milk drips into the baby's mouth and stimulates a suck/swallow cycle.

Babies with jaundice

Healthy breastfed babies may develop jaundice for three reasons:

- 1 Early physiological jaundice associated with inadequate breastmilk intake
- 2 Pathological jaundice e.g. ABO incompatibility
- 3 'Breastmilk jaundice.'

Physiological jaundice

Some degree of physiological jaundice occurs in almost half of all babies (Speller 1999). It does not occur at less than 24 hours of age, becoming apparent on day 2-3. Early breastfeeds (within an hour of birth) and frequent breastfeeds with no restrictions are beneficial in preventing or reducing jaundice. The frequent stimulation of the baby's gut combined with milk protein increases the rate of elimination of bilirubin via the bowel (Blackburn 1995).

Breastmilk jaundice

This appears later in the first weeks of life and persists longer and may be at a higher level than physiological jaundice. The pathophysiology is still debated (La Torre, Targiori et al. 1999). The diagnosis of breastmilk jaundice is by exclusion of other causes. In both types of jaundice, breastfeeding should continue.

Breastfeeding management for jaundiced babies

- Continue breastfeeding even if the baby requires phototherapy
- Remove baby from phototherapy for the breastfeed
- Place the incubator alongside the mother's bed so she can continue to care for her baby
- Supplementation with water is not useful as bilirubin must conjugate with protein to be eliminated
- If the baby is not breastfeeding effectively or requires extra fluids while under phototherapy, the first and best option is for the mother to express her breastmilk and give as a complementary feed in addition to breastfeeds.

Tongue tie (Ankyloglossia)

The frenulum lingua is the vertical mucous membrane fold at the midline under the tongue.

Tongue-tie is when the frenulum is abnormally short or extends close to the tip of the tongue, limiting its movement. There are variations ranging from partial to complete tongue-tie where there is fusion of the tongue to the floor of the mouth (Berg 1999).

A baby with tongue-tie may not be able to breastfeed efficiently because of an inability to bring the tongue forward over the lower gum to grasp sufficient breast tissue.



Photo kindly supplied by H Harris

Indications for frenotomy:

- Infant's tongue cannot move forward adequately to achieve correct attachment
- Maternal nipple pain or trauma due to tongue-tie occurs throughout the feed in spite of best efforts to achieve good attachment
- Baby is not thriving at the breast due to ineffective attachment from the tongue-tie
- Diagnosis has been confirmed by thorough oral examination. An experienced medical practitioner must do this procedure.

If tongue-tie is suspected, refer to the lactation consultant for initial review.

Premature babies

For the great majority of premature babies, breast-feeding is possible. The decision as to when breast-feeding can start will depend on a number of factors, including the infant's gestational age, weight and health. Maturity of the suck/swallow co-ordination is an indicator that the infant is ready for oral feeding. Generally these criteria are observed at approximately 34 weeks corrected gestational age.

Each baby in either the RWH Neonatal Intensive Care Unit (NICU) or Special Care Unit (SCN) is assigned a case manager who can advise, educate and support mothers with expressing and breastfeeding. Nursing staff at the infant's cot side reinforce these facts and it is very important that the information is consistent and accurate.

The hospital lactation consultant is also available to see mothers who have an infant in the nursery. Encouragement and motivation to continue to express is vital to ensure the continuation of the breastmilk supply until breastfeeding can commence. The mother's immediate or extended family can assist by understanding the demands of expressing a full breastmilk supply, and enabling the mother to rest between expressing rather than attending to other family needs.

Pre-term infants and expressed breastmilk

The mother's freshly expressed breastmilk is the most suitable feed for premature babies. The breastmilk of the pre-term mother differs from that of mothers with full-term babies. Pre-term breastmilk contains significantly more nitrogen, sodium and chloride magnesium and iron during the early weeks postpartum. Pre-term and term breastmilk are similar in calories, fat, fatty acids, potassium, calcium and phosphorus. Levels of digestible nitrogen are usually higher in mature pre-term milk. There is continuing research into various aspects of pre-term breastmilk and its components in relation to the growth and health of premature infants. Several studies have shown that pre-term infants fed pre-term milk demonstrated more appropriate growth than those fed term milk (Lawrence and Lawrence 1999).

Pre-term infants fed breastmilk rather than formula have increased protection against the development of necrotising enterocolitis and a higher intelligence quotient at follow-up (Lucas, Morley et al. 1992).

For the vast majority of premature babies, breast-feeding is possible at some stage. It may only be difficult or impossible for a small number of babies with malformations or continuing problems. These babies benefit from receiving their mother's milk even if it is not directly from the breast. The mother will need help to establish and maintain an expressed breastmilk supply.

Kangaroo care

Parents with infants whose condition is stable are encouraged to use 'kangaroo mother care' (Morton 2003).

Mothers (and fathers) hold their baby in skin-to-skin contact underneath their clothing with the baby only wearing a nappy and a hat.

The advantages of kangaroo care include:

- maintenance of infant body temperature
- reduced episodes of apnoea and bradycardia
- increased regular sleep
- reduced crying during kangaroo care
- an increase in alert activity.

Other studies show that breastfeeding outcomes are improved:

- mothers produced more milk
- were more inclined to breastfeed and breastfed longer
- enhances bonding
- fosters confidence in caring for their baby.

First breastfeed

The mother needs plenty of encouragement and assistance when she starts putting her baby to the breast. This is an exciting time for her but she should be prepared for the possibility that it may take a little time and effort to establish breastfeeding. However, some babies take to the breast very rapidly.

Breastfeed Code for premature babies

The Breastfeed Code was developed by staff for use with NICU and SCN babies. The baby's sucking performance is assessed using this tool and subsequent feeds will be planned according to the baby's performance.

Pre-term sucking pattern:

- The pre-term baby begins with short bursts of sucking and has long pauses between sucking efforts
- Sucking may be uncoordinated. The rhythm may be slow or fast, or could be a combination of both
- Sucking efforts may change from feed to feed depending on gestation, gender, concurrent medical issues, wake/sleep patterns, level of tiredness, neuromuscular development and physical/social environment
- As the babies reach their appropriate corrected gestational age they will establish a term pattern of sucking. This may be dependent on their strength, related medical conditions, and the neuromuscular development unique to each individual
- '... the lower the gestational age of the baby, the longer the period required to develop a mature sucking pattern, so that it may take a baby of 32 weeks up to 6-8 weeks to show a mature pattern...' (Lang 1997).

The preterm baby feeding assessment tool:

- A = mother unassisted
- B = nurse verbally assisted
- C = nurse hands on assistance

- 1 Baby has made poor attempt, few sucks only, fallen asleep.
- 2 Intermittent sucking, sleepy episodes, occasional swallowing heard. Half of baby's allotted feed for that time should be given. (e.g. if infant receiving 40ml 3 hourly, give 20ml)
- 3 Baby has sucked strongly and swallowing is heard for at least 10 minutes. No need for further feed.

At each feed select appropriate letter and number that best describes the feed. Example: C1 = nurse assisted /poor attempt, few sucks only, fallen asleep.

Feeding cues for the pre-term baby:

- The pre-term baby is not ready to commence suck feeds until he has reached anatomical and developmental maturity consistent with his term counterpart.
- A baby will exhibit signs of interest in sucking at 24-26 weeks. The transverse tongue reflex develops around 27-28 weeks. The gag reflex usually manifests at 18 weeks gestation, but infants do not develop suck and swallow reflex until 32-35 weeks gestation.
- To encourage infants to bond with their parents, assist maternal lactation, improve infant weight gain, promote non-nutritive sucking, and sucking/swallowing co-ordination, kangaroo care may be initiated (*refer RWH Policy 9W-04-2-014*) after obtaining medical and parental consent.

Cues to indicate readiness for commencing sucking feeds:

- baby has reached appropriate corrected gestational age
- awake and alert at feed times
- sucking fists or other objects that are near the mouth
- fighting gavage feeds, sucking on tube during feeds
- licking lips
- demanding feeds.

When a pre-term baby is first learning to breastfeed ensure that the feeding session does not immediately follow any stressful procedures or stimuli (e.g. blood sampling, bathing or medical examination).

When the pre-term infant first begins suck feeds, they may commence with only one suck feed per day depending on gestational and individual requirements.

This baby may feed more slowly and tire more quickly than their term counterpart, which means that the pre-term baby's feeds may alternate between suck and gavage according to their performance. Always have realistic expectations of the infant's performance and encourage mother to continue with her breastfeeding efforts.

Some mothers may request that baby is not given any bottle teat feeds or dummies. A feeding plan made in consultation with the parents, medical and nursing staff can address this issue. Baby may be fed by gavage tube with all sucking feeds to be breastfeeds only. Alternatively, cup feeding when the mother is not present is a safe, efficient form of feeding when done correctly.

Section 5 – Expressed breastmilk feeding

Section 5 – Expressed breastmilk feeding

Expressed breastmilk feeding

Sometimes it is not possible for a baby to breastfeed in the early days after birth. This may be due to maternal or infant illness or prematurity. For the mother who intends to breastfeed it is essential the lactation is commenced by hand expression, that the mother is fully supported to work towards breastfeeding and that her baby has every opportunity to receive her breastmilk.

This section describes options for breastmilk feeding where the baby cannot feed directly from the breast. It should always be remembered that wherever possible, providing breast time and skin-to-skin contact are integral to optimal levels of maternal confidence and ultimately the successful establishment of breastfeeding.

Cup feedings

Over the last few years, cup feeding has been recommended when a breastfed baby requires extra food. It is a method which when done correctly, is safe and efficient for the baby. Cup feeding has been shown to be of particular benefit for premature babies whose mothers intend to breastfeed at some future date (Lang 1997). It has become a common method for complementary feeding full-term breastfed babies as well. The in-house TV education available to mothers in the RWH has two videos showing how to cup feed. *Studies have shown that cup feeding does not interfere with physiological parameters but:*

- it may take longer
- there is a tendency for excess milk spillage unless the feeder is skilled and careful.

Recommended safe cup-feeding procedure:

- a small smooth-rimmed container such as a pill cup is suitable
- hold baby in a semi-upright position with arms wrapped to avoid milk spillage due to baby's arm movements
- bring the cup to the baby's mouth and rest lightly on the lower lip. The edges of the cup should reach the outer corners of the baby's mouth to prevent overflow
- **do not pour milk** into the baby's mouth
- the baby can smell the milk and will extend the tongue to take a bolus into its mouth
- as the baby's jaw is lowered a small amount will be taken and swallowed
- leave the cup in the same position throughout the feed. There is no need to remove the cup when the baby stops drinking as they will self-regulate intake.



Picture kindly supplied by H Harris

Advantages (Lang 1997):

- little energy expenditure for premature babies
- stimulates tongue and jaw movements
- positive oral experience (very important especially for infants who have had painful or uncomfortable procedures including oral suctioning, gavage feeding and intubation)

- lingual lipases begin the digestion of milk (Lang 1997)
- facilitates the forward movement of the tongue necessary for correct breastfeeding attachment later
- less fat is lost via cup than gavage tube (Smith 1986)
- encourages eye contact and is a socialising process.

Nipple shields

These should not be used without consultation with the lactation consultant (or if not available, with referral for next available visit).

There are only two indications for using a nipple shield at this early stage:

- intractably inverted nipples
- intractably flat nipples – where attachment is not possible otherwise. Using a nipple shield for nipple damage is not appropriate. If the trauma is due to poor attachment (as is often the case) and this is not rectified, a nipple shield will only exacerbate the situation.

If nipple shields are indicated, they should never be used before the milk is in and flowing well.

Using a nipple shield:

- Have the mother express a few drops of milk and rub it into her nipple. This will facilitate a milk ejection reflex
- Express some milk onto the outside of the shield
- Carefully centre the shield over the nipple
- If the flange curls away from the breast, apply a small amount of breastmilk or water-soluble lubricant under the rim

- Ensure the mother's fingers do not impede a good latch. Check she does not hold the shield with her fingers too close to the nipple shield base, making it difficult for the baby to attach properly
- Bring the baby to the breast in the same way as if attaching without a shield – baby's mouth gaping wide so that a good mouthful of breast tissue can be grasped
- Watch for an effective milk transfer (suckling and swallowing in a 1:1, 1:2 ratio).

Make sure the baby does not slip back on the shield as the feed progresses – this can result in:

- an inadequate feed
- prolonged feeding
- possible nipple trauma
- unsettled baby, and eventually
- weight faltering and
- low milk supply.

Important information for mothers using nipple shields:

- There can be a slower transfer of milk from mother to baby due to the reduction in nipple stimulation because of the shield and breastfeeds may take longer
- Drainage of the breast may not be as effective, which may predispose mastitis and a drop in milk supply.

The baby should be weighed every 1-2 weeks to ensure there is no weight faltering due to inadequate milk intake.

It is preferable to use nipple shields for as short a time as practicable because of the above reasons and because it becomes difficult to wean some babies from them.

Choosing the type of nipple shield is of the utmost importance. The thinner silicon shields are now almost universally available and are preferable. They are available at the hospital in two sizes – small and large. It is important that the mother uses the correct size for her nipple. A shield that is too small can result in nipple trauma from pinching of nipple tissue. Most mothers benefit from a large sized shield.

Some now come with an area cut out to enable the baby's nose to touch the breast. A well-designed nipple shield is wider at its base than at its tip to enable the areola to be taken in without painful pinching.

Maintenance of the nipple shield

If the mother is not sharing her nipple shield with another mother, she does not need to sterilise it after each use. Simply wash in hot soapy water, rinse under hot water, drain and store in a clean covered container. If there is sharing of equipment, adequate sterilisation is required.

Going home using a nipple shield

As the baby grows, there is a greater chance of direct attachment to the breast. This may take up to several weeks for some babies. Every mother discharged using a nipple shield is to receive the RWH Information Sheet for Nipple Shields and staff must ensure she understands it. Advise the mother where she can obtain further advice and support with breastfeeding when she returns home. If she is still using a nipple shield two weeks after discharge from hospital care, advise her to return to the breastfeeding day stay program (BESS) so that future management can be planned.

Mothers can be reassured that providing there is unrestricted effective breastfeeding, it is quite possible to continue to breastfeed with a nipple shield for a prolonged period.

Breastmilk expression – frequency and volume

There have been few studies of expressed milk volumes, but a number report on the daily volume of milk produced by breastfeeding mothers (Saint, Smith et al. 1984; Arthur, Smith et al. 1989; Lucas, Morley et al. 1992). Overall they show that the greater the frequency of expression or suckling, the more breastmilk is produced.

Mothers need realistic advice about the volumes that they can expect to achieve given favourable circumstances. This information should not be perceived as definite quantities that must be achieved, but rather a general indication of what her body can produce. Allowing for individual variation, a rough guide to milk production volumes for a mother of a singleton can therefore be 600mls/day or more by 2 weeks postpartum (Houston 1983). The relationship between suckling-induced prolactin response and lactogenesis, has shown that the mean basal levels of prolactin in breastfeeding mothers does not alter significantly during the first week of the puerperium, but there were gradual rises in suckling-induced prolactin levels. Initially there will be low volumes – 10–100mls/day – with a mean of 30mls. However, with frequent milk removal the volume increases rapidly over the next 30–40 hours to between 550–700mls/day by day 6 (Hartmann, Cregan et al. 2003).

Over time, some mothers find that their milk supply drops because they have problems which prevent them from expressing often enough. When the baby is able to start breastfeeding, the mother often notices a rapid increase in her supply. Even if the milk supply is severely depleted, the suckling by her baby stimulates supply.

Staff should give the mother plenty of positive feedback for all her hard work.

When to commence expressing

Expressing should also start as soon as possible after birth, preferably within the first four to six hours to facilitate early and adequate milk production.

A study of mothers expressing for their premature baby showed that women who were producing less than 500mls a day at the end of week 2 had only a 54% chance of achieving adequate production by week 5 (Hill, Aldag et al. 1999).

Initially the amount of colostrum produced is small so the time spent expressing will also be short. If the mother is ill and/or has had a caesarean section she will need assistance to hand express from the staff caring for her.

Frequency of expression

Babies demand feed on average 2-3 hourly i.e. 8-12 times per 24 hours, especially in the first few weeks. This is an initial guide to the frequency of expression. The time between expressions can vary giving the mother flexibility to schedule expressing around her other activities.

Night time

Before her milk 'comes in', a mother can plan an unbroken sleep of about 6 or 7 hours if she wishes and is able to. Once milk production has increased, it is unwise to wait longer than 4 or 5 hours without expressing, as the breasts can become engorged.

When the milk supply is well established and the initial swelling of the breasts has settled down, the mother can experiment with the frequency of night expressions.

Some mothers may find that their overall production starts dropping if they do not express overnight. This may be connected with prolactin production, which peaks during the early morning hours, or it may be an effect of individual breast storage capacity.

When the initial milk supply is abundant and exceeds the baby's requirements, some mothers are advised to express less frequently. This is not a good recommendation as invariably the milk production drops and the mother then must initiate strategies to increase her supply. Instead she should aim to reach a level of production and then maintain that level. The breastmilk not immediately used can be frozen and kept in reserve.

Colostrum

Expressed colostrum, no matter how small, is uniquely valuable and should always be saved and sent to the Special Care Nursery for her baby.

Collect the colostrum in a syringe as benefits include:

- no wastage
- it will not dry up in the syringe
- less contamination
- it shows the mother how valued her milk is
- it is easy to finger feed directly to the baby from the syringe.



Photo kindly supplied by H Harris

When the mother brings her precious milk to the Special Care Nursery, it is essential that her hard work is acknowledged. Staff should never say that it is not enough because it is 'only x' mls when her baby needs 'y' mls – any of her breastmilk is valuable for her baby.

The let-down reflex

Oxytocin is released in a pulsatile manner during breastfeeding and similarly when expressing.

Signs of let-down:

- an increase in milk flow
- cramping uterine pains
- increased lochial flow
- tingling feeling in breasts
- thirst.

Many mothers find they will get a better let-down by visiting their baby if they are separated. Much has been written about the potential for the let-down to be inhibited if the mother is mildly or chronically distressed. However this has been shown to slightly delay let-down, not prevent it (Lawrence and Lawrence 1999). There is little value in telling the mother to 'relax or your milk won't let-down'. This is more likely to increase her anxiety and she may assume that she is at fault.

There are millions of breastfeeding women worldwide living in very anxious conditions that manage to breastfeed in spite of their privations. Breastfeeding is a survival mechanism that will happen under the most difficult circumstances.

How long to express:

- **Colostrum:** The amount of colostrum will increase each time the mother expresses. Initially it may only be a few drops – especially if the mother has never lactated – but with subsequent expressions, this amount will increase. Frequent short expression is effective – at first only a few minutes is necessary, and this can be increased until there is a total expression time of 30 minutes – 15 minutes each breast in blocks of 5 minutes

before switching to other breast. This information is important for the mother to know when attempting to increase her supply.

- **Mature Milk:** Once the milk starts ‘coming in’ the same guidelines apply. It is important for the mother to learn how to assess when her breasts are thoroughly drained, as this is one of the main stimuli to adequate milk production. As the breasts drain the fat content increases thus providing a considerable proportion of her milk’s caloric value (Woolridge, Baum et al. 1982).

Hand or pump expression?

All mothers should know how to hand express before they are discharged home. It is a useful skill to have, as it is economical and there may be a time when access to a pump is not possible. Some mothers find it difficult to express by hand while others feel it is more natural and less trouble. It is an individual choice based upon individual circumstances.

Electric pumps are not recommended for use until the milk is in and flowing. Research shows that it does not improve milk transfer and may negatively affect breastfeeding duration among primiparous women (Chapman, Young et al. 2001). Recent literature also suggests a correlation between areola odema and the injudicious use of a breast pump (Cotterman 2003).

Manual expression

When assisting a mother to express, the midwife should give clear instructions and, where appropriate, demonstrate the technique using a breast model or clear diagram. If it is necessary to further demonstrate the technique, it is useful

to use ‘shadowing’ so that the mother’s hands are guided by the midwife’s for a short period. Learning to express should be a simple technique with the mother assuming an independent role as soon as possible.

If the mother is confined to bed, the bed height should be adjusted so that the mother’s breast level is approximately at the same level as the midwife’s waist. Sitting in front of the mother and reaching forward can pre-empt back strain and is not appropriate. Manual expression should not cause pain, abrasions or odema of the breast and areola. If these occur, the technique is wrong.

Before beginning:

- ensure the mother has privacy and is sitting comfortably
- briefly describe her breast anatomy so she has some understanding of how to facilitate milk removal
- after she has washed her hands, show her mother how to gently massage her breast, to initiate a milk letdown
- indicate how to place her fingers and thumb where the edge of the areola meets the skin
- after positioning her fingers, show her how to press back towards the chest wall and then squeeze gently
- after three or four squeezes, milk will appear at the nipple if the fingers are placed correctly
- advise her to rub this milk gently onto her nipple – this will further stimulate a let-down reflex

- as the milk flow decreases ask her to rotate her fingers around the areola to enable another part of the breast to drain
- it should never cause pain, although there may be mild discomfort until milk begins to appear. With practice many mothers become expert at hand expressing.

Apart from prematurity there are a number of reasons for hand expressing:

- outings – to leave breastmilk with the baby sitter
- nipple trauma – to rest the nipple for a short time
- engorgement – to relieve the breasts if there is temporary engorgement
- sleep – partners may be happy to feed the baby overnight to let the mother have some sleep
- returning to employment – to leave some expressed breastmilk for the baby and to express at work to maintain her supply.

Breast pumps

Pumps are not suitable until the milk comes in and there is a reasonable flow. Pumps should not be used if the nipples are painful or damaged.

Manual pumps

A wide variety of hand pumps are available. Some are more effective and 'user-friendly' than others. All pumps should be easy to use and clean. When using any pump, the flange must be placed centrally over the nipple so there is no damage done to surrounding tissue and to ensure maximum milk removal.

Electric pumps

Some mothers find electric breast pumps easier and more efficient to use. Electric pumps can be quite expensive to buy, and many mothers hire them. Efficient portable pumps are now readily available. There is a list of pump rental stations available in the postnatal ward. Recommending a specific pump is difficult, as each tends to have its own advantages and disadvantages. An important feature of a well-designed electric pump is adjustable suction pressure. Suction should be cyclical and not constant.

Pumps with dual cups to express both breasts concurrently save the mother considerable time and take advantage of the bilateral effect of the let-down reflex. Dual pumping can reduce the mother's total expressing time.

Usually mothers start expressing by hand to get the milk flowing. The suction can be gradually increased to the mother's level of comfort, until there is a good flow of milk. Care should be taken not to have suction too high as this can cause pain and nipple damage and will not increase breast milk removal (Zoppou, Barry et al. 1997).

For mothers of babies in SCN at the RWH, pumps can be hired. Contact the case manager to arrange this.

Storage and transport of expressed breastmilk:

- Breastmilk is best used when fresh. However if this is not possible, then refrigeration or freezing is necessary
- Place breastmilk in clean plastic or glass containers for storage. There is no need to discard the first few millilitres of milk expressed.

When breastmilk is frozen, the leucocytes are inactivated but there is no change to Ig A, E. coli , lactoferrin or lysozyme. Frozen breastmilk can be stored for varying amounts of time, depending on the freezer temperature and stability. It can be stored at -20°C for 3-4 months and up to 6 months if stored at -60°C (Landers 2003).

- If stored in a refrigerator-freezer unit with less stability of temperature, the storage time should be not more than two weeks
- A freezer with an automatic defrost cycle is unsuitable as the temperature may allow the milk to partially thaw
- During transportation of breastmilk the chilled or frozen state of the milk can be maintained by using insulated containers with refreezable ice packs.

Cleanliness is essential although disinfecting (sterilising) is not necessary when unprocessed breastmilk is used, providing there is no sharing of equipment. Any utensils should be cleaned well in hot soapy water and rinsed thoroughly and stored in a clean dry covered container.

Guidelines for storage of breastmilk at home

Breastmilk status (26°C or lower)	Room temperature (4°C or lower)	Refrigerator	Freezer
Freshly expressed into container	6-8 hours If refrigerator is available store milk there	3-5 days Store at back where it is coldest	2 weeks in freezer compartment inside refrigerator 3 months in freezer section of refrigerator with separate door 6-12 months in deep freeze (-18°C or lower)
Previously frozen – thawed in refrigerator but not warmed	4 hours or less – that is, the next feeding	24 hours	Do not refreeze
Thawed outside refrigerator in warm water	For completion of feeding	4 hours or until next feeding	Do not refreeze
Infant has begun feeding	Only for completion of feeding	Discard	Discard

From Infant Feeding Guidelines for Health Workers (2003 p381)

Section 6 – Maternal diet and medication

Maternal diet and medication

New mothers are often concerned that what they ingest, either in their diet or as a medication may pass to their baby through their milk. This section discusses a range of common medications and issues to be aware of and how a mother can ensure that she has an adequate diet for her needs as a breast-feeding mother.

Occupational Safety issues for the midwife are also discussed. This section provides contact information for a range of community based support groups and services and finally a reading list and bibliography for further information.

Drugs and breastfeeding

While breastfeeding, drugs taken by the mother may pass into her breastmilk, usually in very small amounts. The extent to which this happens depends on the drug concerned. *The following points apply to drug treatment in breastfeeding mothers:*

- Human breastmilk is undoubtedly the best thing a mother can feed her baby and its benefits are so important that breastfeeding should be discontinued only when there is substantial evidence that the drug taken by the mother will harm the baby and there are no alternatives.
- Mothers who are breastfeeding should not be given medications unless there is convincing evidence that it will really help whatever condition affects the mother. If there are alternative drugs available, the drug that is the absolute safest for the breastfeeding mother should be chosen.
- Worsening illness in the mother will affect breastfeeding more than most medical treatments.

Drugs for increasing milk supply

Metoclopramide (Maxolon) has been shown to increase prolactin levels and daily milk production in lactating mothers (Budd 1993). The usual dose is 10 mg three times a day for 10 to 14 days.

The dose is then reduced gradually to minimise the chances of a sudden drop in milk production. Prolonged use has been associated with depression in some women, and other reported side effects are gastric cramping and diarrhoea.

Domperidone (Motilium) is also a galactagogue. It is usually prescribed 10 - 20 mgs three times a day and because it does not enter the brain compartment, has fewer CNS effects than Maxolon. Some possible side effects are dry mouth, itchiness, skin rash, thirst, and abdominal cramps. There have been no paediatric side effects reported (Hale 2002).

Drugs for lactation suppression

Drugs to suppress lactation at the time of routine weaning are no longer recommended. Cabergoline (Dostinex) is prescribed instead of bromocriptine (Parlodel) as it has fewer side effects. It is usually given on the first postpartum day to prevent lactogenesis. Adverse symptoms include dizziness, fatigue, postural hypotension and headache. It may also be given over two days for established lactation in the event of a neonatal death (Hale 2000).

However, if a baby dies after milk production is well established the usual management is conservative. Empathy, combined with physical comfort measures – keeping the breasts well supported, expressing small amounts only for comfort, avoidance of over-handling the breasts and simple analgesia – is a good framework.

Contraception

Lactational Amenorrhoea Method (L.A.M.)

A great deal of research has been done to understand and evaluate breastfeeding as a method of fertility control. The Lactational Amenorrhoea Method (Cooney, Koniz-Booher et al. 1997) of contraception was developed by incorporating the results of the Bellagio Consensus Conference on Lactational Infertility which stated that there is 98 percent protection against pregnancy if the following conditions are strictly adhered to:

- no return of menstruation (other than bleeding in the first 56 days post-partum)
- the baby is under six months of age and
- the mother is fully or nearly fully breastfeeding, i.e. no breastmilk substitutes (water, glucose water, formula, juices, solids).

If any of the above criteria are no longer being met then another form of contraception such as a barrier or hormonal method should be introduced if pregnancy is to be avoided.

'Fully or nearly fully breastfeeding' means that virtually no supplements or foods of any kind are given and the intervals between breastfeeds are no longer than four to six hours.

If a mother chooses to rely on breastfeeding for family planning, she must be aware of all these facts. It is also important that breastfeeding be successfully established immediately postpartum.

Barrier contraceptives

These include condoms, diaphragms and spermicidal agents. They do not affect breastfeeding or the baby.

A diaphragm can be fitted at about three months, after the vaginal muscle tone is restored and uterus has returned to normal. A different size may be needed to that used previously.

Intrauterine Device (IUD)

This has no effect on breastfeeding. Insertion can be done after six weeks to three months, when the uterus has returned to normal.

Hormonal contraceptives

For breastfeeding women choosing to use hormonal contraception, the 'minipill', which contains low dose progesterone, for example (Microlut, Microval) or norethisterone (Noriday), is the safest option. Breastfeeding mothers should wait for 6 weeks before commencing oral contraception. Some women report that there is a noticeable reduction in their milk supply when starting the minipill. However, if this is so, it can usually be overcome by increasing feeding frequency for a time.

If taking a contraceptive pill poses a problem for the breastfeeding mother, 12-weekly injections of medroxyprogesterone (Depo-Provera) or an etonogestrel implant (Implanon) are also suitable contraception methods. The injectable contraceptive is excreted into the breastmilk in extremely low amounts and is considered safe. Women receiving Depo-Provera immediately postpartum may experience more frequent bleeding or spotting than other women who have not had the injection.

Combined contraceptive pills that contain oestrogen and progesterone hormone are best avoided as they can decrease the milk supply due to the oestrogen component.

Ref: RWH Medicines and breastfeeding pamphlet.

Contraindications to breastmilk feeding

Absolute contraindications

There are few absolute contraindications to breastfeeding. *They include:*

- active tuberculosis, untreated. Any contact with the infant, including breastfeeding, is restricted until the mother has completed two weeks of appropriate treatment. The baby is usually prescribed prophylactic treatment. Lactation is initiated and maintained by expressing, until contact between mother and baby is safe
- recently acquired maternal syphilis with an unaffected baby
- HIV positive mothers: in Australia these women are advised not to breastfeed. Future research may enable this advice to be modified
- rare metabolic disorders of the infant, such as galactosemia
- refusal of the mother to breastfeed.

Partial breastfeeding

It is possible to partially or fully breastfeed with some conditions once the risk/benefit ratio has been considered. *They include:*

- **Hepatitis B.** Babies of mothers who are Hepatitis B carriers need to be vaccinated with Hepatitis B Immune Globulin (HBIG) immediately after birth (no later than 12 hours) and followed by 3 doses of Hepatitis B vaccine at one week, one month and six months. Babies may be breastfed

- **Hepatitis C.** There is no known effective treatment and no vaccine available. Breastfeeding seems safe for babies of HCV positive mothers. Under review is the maternal 'viral load' role in relation to transfer into breastmilk and further research is in progress. It is important that the mother does not suffer any nipple trauma and that the baby's skin or mucosa is not damaged e.g. by oral suctioning at birth or by insertion of a scalp clip for fetal monitoring during labour. There is no indication to interrupt breastfeeding where nipples remain intact
- **Anatomical considerations of mother** e.g. congenital absence of glandular breast tissue
- **Maternal illness** – if there is no risk to the infant and mother wishes to breastfeed she should be fully supported
- **Neurological disorders of the infant** which render breastfeeding impossible. This does not preclude breastmilk feeding of course and this should be the next alternative
- **Maternal medications.** There are few medications that are unsafe during breastfeeding and if any are contra-indicated, safe alternatives are frequently available.

Radio diagnostic agents

The use of radiographic agents and radio-pharmaceuticals are not completely incompatible with breastfeeding.

Contrast media are detectable in breastmilk after intravenous administration. It is recommended that breastfeeding mothers express and discard breastmilk for 24-36 hours after administration before resumption of feeding.

A physician of nuclear medicine should be consulted before a diagnostic study is performed so the agent with the shortest excretion time can be selected. It is recommended that the mother express and store prior to the test for use when she is expressing and discarding.

Minor illnesses

Aches and pains

When breastfeeding, the pain relievers of choice for mild headache, general pain or period pain are paracetamol or paracetamol/ codeine combination. Aspirin is safe when taken as an anti-platelet or for occasional pain, but regular high doses are best avoided. When aspirin is taken, mothers should try to wait one to two hours after the dose before breastfeeding their baby to minimise effects i.e take immediately after a breastfeed. More severe pain such as migraine can be treated with stronger products such as Mersyndol for long periods if the mother has used them before, otherwise seek medical advice.

Period pain/muscular pain

The above drugs may be taken for these types of pain, as well as medications such as ibuprofen, diclofenac, and mefenamic acid. Creams and sprays available for topical application to muscle aches and pains are quite safe. Do not apply the medication near the nipple to ensure the baby does not ingest it. High doses of mefenamic acid (Ponstan), indomethacin (Indocid) naproxen (Naproxyn) and high doses of aspirin are best avoided by breastfeeding mothers unless otherwise recommended by a medical practitioner.

Colds, flu and asthma

Symptoms of colds and flu (runny nose, headache, sinus pain, fever, joint pains) should be treated separately while breastfeeding rather than using combination products that contain pseudoephedrine. This ingredient can occasionally cause babies to become irritable and restless, especially if they are under three months of age.

For nasal congestion, consider using nasal sprays (for 3-5 days) containing oxymetazoline, xylometazoline or tramazoline rather than taking a combination cold and flu tablet.

Single ingredient cough mixtures (pholcodine for a dry cough, and guaiphenesin or bromhexine for a productive cough) are safe while breastfeeding. Avoid cough mixtures that contain pseudoephedrine (Sudafed, Demazin etc).

Lozenges and gargles for sore throats are safe, though it is best to avoid gargles containing povidone-iodine (Betadine etc). Iodine is absorbed through the oral mucosa and tends to accumulate in the milk, therefore should not be used. Cepacaine gargle is a better option. Most lozenges are suitable as they have a local action and very little is absorbed systemically. Difflam and Zinc lozenges have little information available about them so are best avoided.

Asthma treatments should be the same for breastfeeding women as anyone else using the treatment and are quite safe.

It is safe to have a flu vaccine while breastfeeding.

Hayfever and allergies

While breastfeeding it is best to treat the individual hay fever or allergy symptoms, using eye drops which contain antazoline (Antistine-Privine) or naphazoline (Albalon) and nasal drops/sprays such as budesonide (Rhinocort) or beclomethasone (Aldecin, Beconase) to treat symptoms.

Most of the older sedating antihistamine tablets (e.g. dexchlorpheniramine and pheniramine) are quite safe to use but if sleepiness is a problem, a suitable non-sedating antihistamine is loratidine (Claratyne).

Fexofenadine (Telfast) and Ceterizine (Zyrtec) which are non-sedating antihistamines have occasionally caused irritability and restlessness in breastfed babies.

Vitamins, minerals and herbal preparations

Most vitamin and mineral supplements are safe to use during breastfeeding. Herbal preparations may be natural, but they are not necessarily harmless. If a breastfeeding mother wants to take herbal supplements, she should first check with a qualified naturopath/herbalist or pharmacist about its safety.

Some herbal preparations pass through the breast-milk to the baby and some can cause liver problems in infants. Lactating women should avoid the use of some herbs. *These include:*

- Butterbur
- Comfrey
- Coltsfoot
- Dong Quai
- Gingko Biloba
- Hound Tongue

- Nutmeg
- Ragwort
- Siberian Ginseng

Smoking

Breastfeeding mothers should be advised not to smoke or to decrease use as much as possible. A mother should not smoke or allow others to smoke in the presence of her baby. Apart from the serious health problems for mothers, maternal smoking has been strongly implicated in SIDS (Golding 1997). Smokers have been shown to have lower prolactin levels and smoking is associated with low milk supply. Nicotine itself can act as an appetite suppressant, potentially influencing infant growth (Leung, Lam et al. 2002).

Because of the short half-life of nicotine, it is possible to minimise the amount of nicotine consumed by the infant in breastmilk by advising those mothers who continue to smoke, to maximise the time between the last cigarette and the next breastfeed. Every effort should be made by all staff to assist the mother to break this highly addictive habit. A more proactive approach must be initiated and continued from the antenatal period and onwards until discharge from hospital care.

This should include:

- smoking assessment form completed in patient-held antenatal record
- advice and referral for smoking cessation programs
- availability of suitable written material
- notation on care maps regarding smoking
- follow up at each antenatal visit regarding progress towards cessation.

Alcohol

Alcohol is a rapidly absorbed compound and its concentration peaks in breastmilk at 1/2-1 hour after drinking and 1-1½ hours if taken with food. The breastmilk concentration of alcohol is comparable to simultaneously measured maternal blood levels. Currently it is recommended that mothers who choose to drink alcohol should restrict their intake to one glass and aim to allow two hours before breastfeeding. Larger amounts of alcohol have been shown to inhibit the let-down reflex.

RWH Medicines and breastfeeding pamphlet 1999.

Recreational drugs

Recreational drugs are excreted into breastmilk in varying amounts, and are passed on to the baby.

The amount and its effect upon the baby will depend upon:

- the type of drug used
- how it is administered
- time of administration
- dosage.

The Women's Alcohol and Drug Service (WADS) at the RWH has a specific objective to provide support for those women who are using illegal drugs such as heroin, marijuana, amphetamines or who are on a methadone/buprenorphine maintenance program. Narcotics may make the breastfed baby sleepy, whereas stimulants may cause irritability. Counselling and support from WADS is available to this vulnerable group of mothers. The incidence of SIDS is higher in this sub-group and ongoing support and monitoring is essential for the long-term well-being of mother and baby.

Dietary advice

Women who are breastfeeding should eat a well balanced diet since they must provide both for their own nutrition and for their baby. Generally, the amount of extra food eaten will vary depending on height, weight, activity, appetite and stage of breastfeeding.

The healthy diet pyramid (*see next page*) provides a guide to the best food choices for good nutrition and can be adapted for women from different cultures.

Particular attention needs to be paid to calcium intake as needs are high during breastfeeding and inadequate calcium intake is a risk factor for the development of osteoporosis in the mother. There are many ways for mothers to have an adequate calcium intake. Not all people enjoy dairy products and can receive adequate calcium either through calcium-rich vegetables, soy products or calcium supplements.

- * For **Vitamin C** include citrus fruits, berries, tomatoes, capsicums and potatoes
- * For **Vitamin A** include dark green and yellow vegetables such as spinach, broccoli, carrots and pumpkin
- * For **Folate** include leafy green vegetables such as spinach and broccoli

Note: *Alcohol* is best avoided in pregnancy and while breastfeeding.

Healthy eating pyramid for breastfeeding



Fast, sugars and alcohol

Fats and oil, sweet and fatty food, fried food, cakes, cream, potato chips, alcohol.

EAT LEAST

Dairy foods

4 serves per day

1 serve is:
250ml milk
200ml yogurt
35g cheese
250ml soy milk with added calcium



Meat, chicken, fish, legumes

1 to 2 serves per day

1 serve is:
100g meat/chicken
200g fish
2 eggs
1/2 cup legumes or tofu
1/2 cup nuts

EAT IN MODERATION



EAT PLENTY ACCORDING TO APPETITE

Cereals and breads

4 to 8 or more serves per day

1 serve is:
1 slice bread
1/2 bread roll
1/2 cup cereal
1/2 cup rice /pasta

Fruits and vegetables

4 to 8 or more serves per day

1 serve is:
1-3 cup vegetables or salad
1 medium fruit
2 smaller fruit

Energy, weight and breastfeeding

When breastfeeding, a mother uses more energy (kilojoules) than during pregnancy. During the first three months of lactation the maternal fat stores laid down while pregnant are used to help meet these demands. Weight and appetite are the best guides to judge the energy intake needed whilst ensuring a balanced diet.

Most breastfeeding women find they gradually return to a healthy weight. For those who don't, strict dieting or skipping meals is not recommended as nutrient intake may be at risk. A diet low in fats – especially saturated fats – and sugars should be encouraged combined with regular exercise. If there are still concerns about weight, a dietician should be consulted.

Occasionally women find they need to eat more to satisfy an increase in their appetite or to prevent rapid weight loss. In this case extra snacks can be included in the diet such as sandwiches, milk drinks, fruit yoghurt, cereal and milk or cheese and biscuits.

Allergy and colic

'Everything in moderation' is a sensible rule. There is no scientific basis to suggest that some foods cause gas or wind in babies. No specific food has been proven to upset babies so mothers need not exclude certain foods unless they continually cause problems e.g. rashes, colic, diarrhoea.

The exception to this advice is when there is a strong family history of allergies and food intolerances. If both parents have allergies or both have immediate family members with atopy, the mother should

obtain dietary advice from a professional dietitian and/or medical allergist. Avoidance of common allergenic foods (such as cow's milk products, eggs, fish, peanuts and soybeans) requires expert guidance because such a diet may cause nutritional imbalances.

Vegetarian diets

Vegetarians can meet the nutritional requirements of breastfeeding if alternatives such as legumes, nuts and eggs are eaten regularly.

Vegans, who avoid all foods of animal origin, need to pay particular attention to their calcium and vitamin B12 intakes. Calcium can be obtained from a calcium fortified soymilk or a calcium supplement. Vitamin B12 is found only in foods of animal origin and is needed for normal mental development in the baby. Breastfeeding rapidly depletes the mother's body stores so vegan mothers will need to drink either a vitamin B12 fortified soymilk or take a vitamin B12 supplement. Vitamin B12 levels can be measured by a blood test.

Vitamin D

Vitamin D is mostly made in the skin by the action of sunlight, but a small amount comes from the diet. Women who have darker skin, cover most of their body in clothing or spend most of their time indoors are at risk of Vitamin D deficiency. Vitamin D deficiency can cause bone weakness and muscle pain and skeletal abnormalities (rickets) in their babies. Women who are at risk should have their vitamin D levels checked by a blood test and if low should be prescribed a Vitamin D supplement

(Ostelin). Their breastfed babies will require a Vitamin D supplement (Pentavite 0.45mls per day).

Referral to a dietitian

Dietary advice should be sought for breastfeeding mothers with special needs such as:

- vegetarian/vegan mothers
- severe dietary restrictions for religious reasons
- pre-existing medical conditions which affect nutrition i.e. renal, liver, Crohns and coeliac disease, type 1 diabetes
- exclusion diets for allergies
- breastfeeding multiples
- poor nourishment before and during pregnancy
- weight management advice.

The midwife – occupational safety

There are two significant occupational health and safety considerations in the development of these guidelines:

- 1 To develop the safest and most effective method of enabling a mother to become independent in breastfeeding as soon as possible
- 2 To provide this education in a manner that does not require staff to adopt positions for extended periods of time, which may potentiate back pain and injury.

These aims can be achieved by giving the mother simple, step by step instructions (using HOT principles) and by carefully observing her breastfeeding technique.

It may be necessary to ‘shadow’ the mother’s hands from time to time in order for her to be able to achieve excellent attachment and positioning. However, whenever the midwife is helping in this way, she must not put herself at risk of back injury by maintaining awkward postures.

Ways to reduce the risk of back injury:

- If the mother is confined to bed, it should be raised or lowered to the midwife’s waist height. This will avoid bending or reaching over the mother
- If the mother is sitting in bed, it is important she has her back firmly against the backboard with perhaps one pillow behind her lower back for support
- If the mother is lying on her side, the bed height needs to correspond with the midwife’s elbow. This again avoids back strain from bending over
- If the mother is sitting in a chair, the midwife sits on a slightly higher stool next to her and keeps close to the mother to avoid back and arm strain from over-reaching.

Support services

Breastfeeding Education & Support Services (RWH) operates a day stay program, Mon–Thurs and an outpatients clinic once a week, for women who are experiencing breastfeeding problems.

Staffed by qualified lactation consultants (IBCLC). Mothers can self refer or be referred by health professionals. BESS is situated at Flat 3/234 Cardigan Street Carlton. **Telephone 03 9344 3651**

Australian Breastfeeding Association
(ABA)
Telephone 03 9885 0855
website www.breastfeeding.asn.au

ABA 24 hour Counselling
Telephone 03 9885 0653

Australian Lactation Consultants
Association Ltd
Telephone 02 6295 0384
Website www.alca.asn.au

Australian Multiple Birth Association
Telephone 03 9513 3050
(message will give further directions)

Child Care Centre – RWH
Telephone 03 9344 2215

Cleft Palate and Lip Society
Telephone 03 9740 1179

Crisis Line (24 hour counselling)
Telephone 13 61 69

Down Syndrome Association of Victoria
Telephone 03 9486 2377

Drug Information Service,
Royal Women's Hospital
Telephone 03 9344 2277

Early Birds – Prem Support Group
Telephone 03 9826 2228

Lactation Resource Centre
Telephone 03 9885 0855

Maternal and Child Health 24 Hour
Telephone Information Service
Telephone 13 2229

Enhanced Home Visiting by the MCH
Service can be arranged by liaising with
Maternal and Child Health Service.

O'Connell Family Centre
(formerly Grey Sisters)
Telephone 03 9882 2326

P.A.N.D.A. (Post and Ante-Natal
Depression Association)
Telephone 03 9482 9400

Poisons Information Centre
Telephone 13 11 26

Queen Elizabeth Centre
Telephone 03 9549 2777

Tweddle Child and Family Service
Telephone 03 9689 1577

Women's Health Information
Centre – Royal Women's Hospital
Telephone 03 9344 2007

Reading list

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- 2 Breastfeeding Babies with Cleft Lip and/or Palate 1994, ABA.
- 3 Questions and Answers for Parents. The Melbourne Cleft Lip and Palate Centre. Royal Children's Hospital Melbourne.
- 4 A Guide to Effective Care in Pregnancy and Childbirth – Enkin, M., Kierse, M.J.C., Neilson, J., Crowther, C., Duley, L., Hodnett, E., Hofmeyr, J. 2000 (3rd edition) Oxford University Press, Oxford
- 5 ABA booklets – on many subjects relating to breastfeeding
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- 8 Breastfeeding Management in Australia – Brodribb, W. (Ed.) 1997, (2nd edition), ABA, Melbourne
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- 10 Breastfeeding: A Guide for Midwives – Royal College of Midwives, 1996, Books for Midwives Press.
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Appendices

Appendices

Appendix 1 – Breastfeeding: complementary and supplementary feeds

The Royal Women's Hospital is committed to promoting and supporting breastfeeding. Breast milk is the best food for babies and the use of complementary feeds is not necessary for healthy, full-term breastfed infants. Complementary or supplementary feeds are fluids other than breast milk, such as formula or water, that are given to your baby after a breastfeed or instead of a breastfeed.

This information sheet is to be used when complementary/supplementary feed is proposed and where there is no medical reason for introducing them. To enable you to make an informed choice with regards to feeding your baby we believe it is important for you to have the following information.

The sucking action on a bottle is different to how a baby suckles at the breast.

Introducing complementary feeds may have the following effects:

- Breastfeeding works on a demand/supply basis. The more your baby suckles at the breast, the more milk your breasts make. When your baby is given complementary feeds your breasts have less stimulation. This in turn means less milk may be made
- If feeds are missed or replaced by a complementary feed your breasts can become full and painful. This is called engorgement. If your breasts are engorged you may make less milk. It is important then that your breasts are suckled frequently
- Infants who are given infant formula are more likely to develop an allergy to cows' milk protein than infants fed only breast milk
- Giving complementary or supplementary feeds may make it more difficult for you to establish or continue breastfeeding. However, you should be assured that we will make every effort to help you establish full breastfeeding, should you wish to do so, once the complementary feeds have finished.

If you do introduce complementary feeds, problems can be reduced by:

- expressing regularly to maintain supply and to prevent engorgement
- using expressed breast milk where possible

The Royal Women's Hospital does not endorse any particular brand of infant formula. If you have chosen to give your baby either a complementary or a supplementary feed, we offer a number of brands to choose from.

The composition of each brand is basically the same – one is not necessarily better than another. If you require further information about infant formula, we recommend that you speak to your Maternal & Child Health Nurse once you get home.

This information has been discussed with me by:

Name
.....

Date / /
.....

Signature of mother
.....

Signature of midwife
.....

Adapted from Infant Feeding Guidelines for Health Workers – NHMRC

Appendix 2 – Hospital pre-admission visit

4th or 26-30 week	HOSPITAL PRE-ADMISSION VISIT	Date / /	Designation
Print midwife/doctor name		Signature	
Lactation Assessment	To be completed at 26 weeks	Completed by:	
Client requests referral to LC antenatally			
Previous breastfeeding problem resulting in unplanned weaning			
Physical disability which may impact upon breastfeeding			
Social issues which may impact on breastfeeding e.g. refugee, prisoner, DHS involvement etc.			
Previous breast trauma / surgery e.g. augmentation, reduction, abscess, lump removal, burns			
Eczema / psoriasis / nipple / breast thrush / nipple vasospasm / nipple inversion			
Type 1 / Type 2 / gestational diabetic			
Expected infant morbidity involving probable separation from mother			
Problems initiating / establishing breastfeeding e.g. cleft palate, cardiac problem, prematurity			

Action: <input type="checkbox"/> Referral not required <input type="checkbox"/> Booked Lactation Clinic <input type="checkbox"/> Contacted LC (pager 2360) <input type="checkbox"/> Referral <input type="checkbox"/> Declined

Notes



