

Breastfeeding

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Note:

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Explanation of the aboriginal artwork:

The aboriginal artwork used symbolises the connection to country and the circle shape shows the strong relationships amongst families and the aboriginal culture. The horse shoe shape design shown in front of the generic statement symbolises a woman and those enclosing a smaller horse shoe shape depicts a pregnant women. The smaller horse shoe shape in this instance represents the unborn child. The artwork shown before the specific statements within the document symbolises a footprint and demonstrates the need to move forward together in unison.



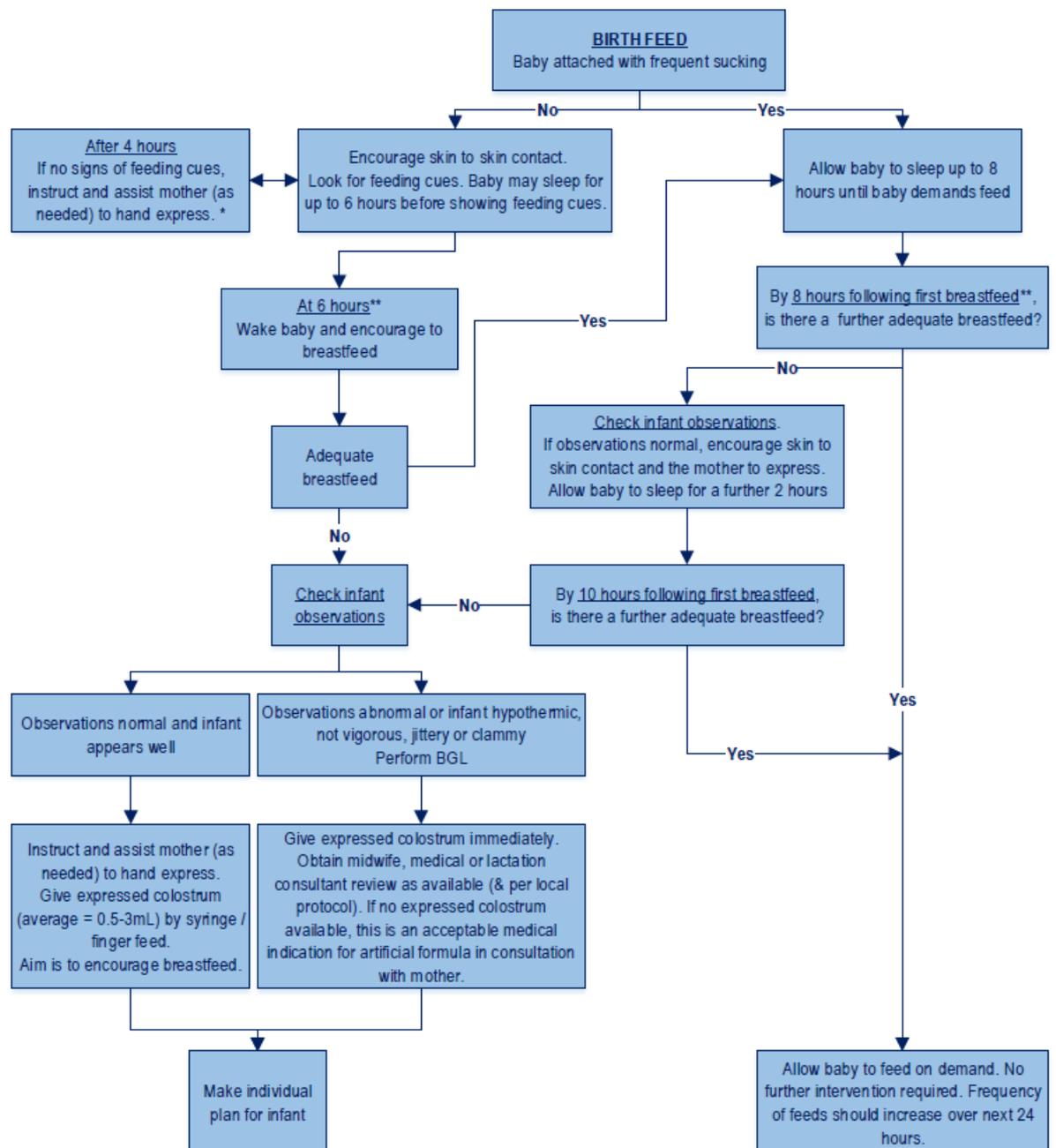
Australian Aboriginal Culture is the oldest living culture in the world yet Aboriginal people continue to experience the poorest health outcomes when compared to non-Aboriginal Australians. In South Australia, Aboriginal women are 2-5 times more likely to die in childbirth and their babies are 2-3 times more likely to be of low birth weight. The accumulative effects of stress, low socio economic status, exposure to violence, historical trauma, culturally unsafe and discriminatory health services and health systems are all major contributors to the disparities in Aboriginal maternal and birthing outcomes. Despite these unacceptable statistics the birth of an Aboriginal baby is a celebration of life and an important cultural event bringing family together in celebration, obligation and responsibility. The diversity between Aboriginal cultures, language and practices differ greatly and so it is imperative that perinatal services prepare to respectively manage Aboriginal protocol and provide a culturally positive health care experience for Aboriginal people to ensure the best maternal, neonatal and child health outcomes.

Purpose and Scope of PPG

This guideline provides clinicians with information to support women with the initiation and management of breastfeeding for the healthy term infant up to the age of four (4) weeks after birth. This PPG is intended for use in the antenatal, intrapartum and postnatal period.



Flowchart 1: Breastfeeding the Healthy Term Infant in the First 24 Hours Following Birth



* If no colostrum can be hand expressed initially, try expressing hourly until some is available. If no colostrum is available by 8 hours obtain midwife / medical review as available.

** Timing and assessment of breastfeeds is regardless of a woman's location (i.e. hospital or home). The woman should be given information about the timeframes above, adequacy of breastfeed and how to contact an appropriate staff member if in the home setting.

Flowchart 2: Management of Infants with more than 10% weight loss below birth weight from day 3-5

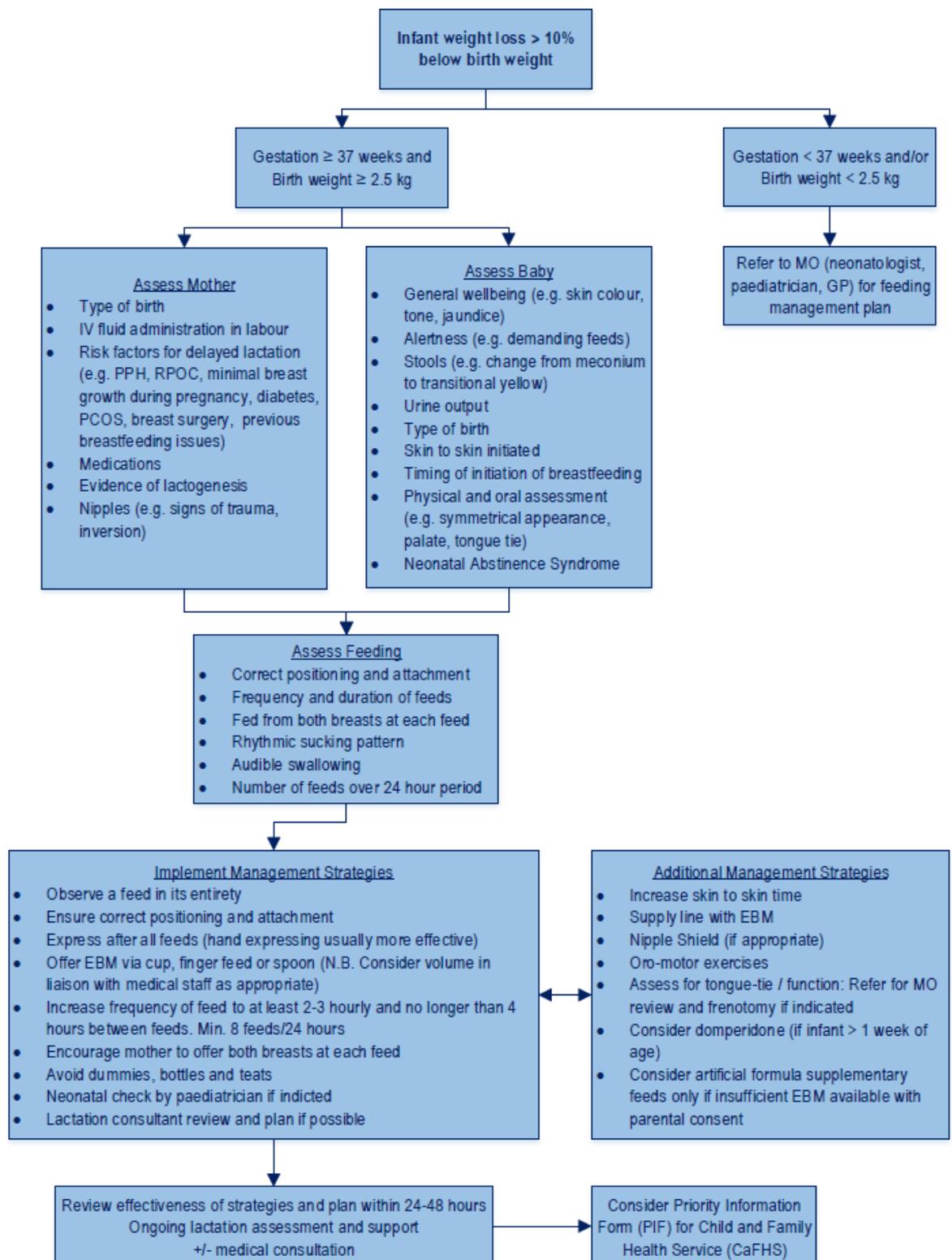


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Summary of Practice Recommendations

Each interaction that a mother (and her infant) has with health practitioners needs to protect, promote and support breastfeeding.

Health practitioners need to be aware of the Baby Friendly Health Initiative (BFHI) '10 Steps to Successful Breastfeeding' and the BFHI '7 Point Plan for Community Health Services' and strive to achieve this in their practice.

Provide pregnant women with information about the benefits, initiation and management of breastfeeding.

Assess factors which may impact on the establishment of breastfeeding throughout the perinatal period.

Where possible skin to skin contact should be initiated within 10 minutes of birth and be uninterrupted for at least 1 hour irrespective of type of birth or mother's feeding intentions.

Provide women with information, assistance and support to enable establishment of breastfeeding.

If the woman has delayed contact with her baby, offer additional support.

Inform women about post-discharge services and community supports to facilitate ongoing breastfeeding.

Comply with the World Health Organisation International Code of Marketing of Breast milk Substitutes.

Abbreviations

ABA	Australian Breastfeeding Association
ANRQ	Antenatal Risk Questionnaire
BFHI	Baby Friendly Health Initiative
BGL	Blood Glucose Level
BMI	Body Mass Index
CaFHS	Child and Family Health Services
CALD	Culturally and Linguistically Diverse
DAME	Diabetes and Antenatal Milk Expressing Trial
EBM	Expressed Breast Milk
GP	General Practitioner
IUGR	Intrauterine Growth Restriction
kg	Kilogram(s)
LSCS	Lower Segment Caesarean Section
MER	Milk Ejection Reflex
MO	Medical Officer
NHMRC	National Health and Medical Research Council
PCOS	Poly Cystic Ovarian Syndrome
PIF	Priority Information Form
PPG	Perinatal Practice Guidelines
PPH	Postpartum Haemorrhage
RDR	Rapid Detection Response
REM	Rapid Eye Movement
RPOC	Retained Products of Conception
SAPR	South Australian Patient Record
WHO	World Health Organisation

Introduction

Breastfeeding is the biologically normal way to feed an infant for healthy growth and development. It provides a protective effect for infants against many illnesses, including gastro-intestinal, respiratory and urinary tract infections, otitis media (until 2 years), Sudden Infant Death Syndrome (SIDS), malocclusion, dental caries, childhood leukaemia and chronic conditions which may occur in later life, such as type 2 diabetes, coeliac disease, asthma and obesity.

For mothers, breastfeeding has many positive effects, including reduced risk of osteoporosis, pre-menopausal breast cancer, ovarian cancer, type 2 diabetes and post-menopausal obesity. Mother-infant bonding is enhanced, and the incidence of postnatal depression has been demonstrated to reduce¹.

In Australia, breastfeeding is initiated for almost 96% of infants, with an approximate 90% initiation rate for exclusive breastfeeding. By 3 months, the percentage of infants in Australia who are exclusively breastfeeding reduces significantly.

In South Australia in 2010, the exclusive breastfeeding initiation rate was 89.6%. By the age of 1 month, less than 60% of South Australian infants were exclusively breastfeeding. By the age of 6 months, only 14.6% of South Australian infants were exclusively breastfed (consistent with the National data)².

These figures fall well below the World Health Organisation (WHO) recommended duration for exclusive breastfeeding for 6 months³.

In Australia, the recommendation of the National Health and Medical Research Council (NHMRC) is that exclusive breastfeeding is maintained to around 6 months of age, with the introduction of appropriate complementary foods and continued breastfeeding until 12 months of age, or longer as the mother and child wish⁴.

The BFHI was developed by the World Health Organisation and UNICEF to protect, promote and support breastfeeding. It provides a framework for hospitals and health services to implement evidence based practices which optimise infant feeding. The BFHI standards require that all mothers receive appropriate information and support with initiating and maintaining breastfeeding.

In Australia, BFHI has been expanded to include health and community services, and is now known as the Baby Friendly Health Initiative. It is governed through the Australian College of Midwives⁵.

This guideline is based on the 10 Steps to Successful Breastfeeding and the 7 Point Plan for the Protection, Promotion and Support of Breastfeeding, as per the BFHI criteria for Maternity Services and for Community Services.

All staff are required to comply with the *SA Health Breastfeeding Policy Directive* (available at www.sahealth.sa.gov.au/perinatal), including the *WHO International Code of Marketing Breastmilk Substitutes* (http://www.who.int/nutrition/publications/code_english.pdf), the *World Health Assembly Resolutions* (http://www.who.int/nutrition/topics/wha_nutrition/en/) and the *Marketing in Australia of Infant Formula Agreement*

(<http://www.health.gov.au/internet/main/publishing.nsf/Content/health-publhlth-strateg-foodpolicy-apmaif.htm>).



Antenatal

In the antenatal period, the majority of women intend to breastfeed, either exclusively or combining breast and artificial formula feeding⁶. Most women are aware that breastfeeding conveys health benefits.

Less than 5% of women plan to fully artificially feed. The most commonly stated reason for not initiating breastfeeding is unsuccessful previous breastfeeding experience⁷. Antenatal education and anticipatory guidance about actions that support breastfeeding appear to increase the duration of breastfeeding⁸.

First antenatal visit (or at first opportunity)

Discuss

Woman's intentions, knowledge and expectations re infant feeding.

Previous breastfeeding experiences including duration, previous problems encountered, supply adequacy, mastitis.

Psycho-social: factors which may impact on breastfeeding (e.g. increased maternal anxiety or depression, as indicated through high Edinburgh Postnatal Depression or ANRQ scores, partner support, plans to return to employment or study, intended duration of breastfeeding);

Obtain clinical history

Surgical: particularly history of breast surgery (reduction, enlargement, nipple relocation, cystectomy, mastectomy) or gynaecological surgery.

Medical: history of hormonal imbalances, diabetes, thyroid dysfunction, Poly Cystic Ovarian Syndrome (PCOS), luteal cysts, fertility difficulties, IVF pregnancy, severe anaemia.

Obstetric: gestational diabetes, pre-eclampsia, prematurity, Intrauterine Growth Restriction (IUGR), prolonged labour, previous birth type, postpartum haemorrhage, weight and gestation of previous infants.

Physical examination:

Consider visual inspection of breasts – Note symmetry, size and changes during pregnancy, nipple appearance, surgical/trauma scars, nipple piercing. Note: Breast examination may be deferred to a subsequent antenatal visit, depending on rapport / relationship between woman and health care provider and cultural considerations.

Document

Woman's intention re infant feeding in SAPR and/or case notes.

Findings from assessment.

Plan to support breastfeeding if required.

Subsequent visits:

Provide information re:

- > Breast and nipple changes during pregnancy
- > Importance of breastfeeding and risks of not breastfeeding
- > Care and analgesia during labour (importance of support person, comfort and use of non-pharmacological pain relief during labour, potential impact of pharmacological analgesia during labour on breastfeeding initiation);
- > Importance of early, uninterrupted skin to skin contact after birth
- > Early initiation of breastfeeding



- > [Feeding cues](#)
- > Basic [attachment and positioning](#)
- > Normal infant behaviours in first 1-2 days
- > Rooming in
- > Feeding frequency and night feeds
- > Discouragement of use of bottles, teats and dummies while breastfeeding is being established
- > Exclusive breastfeeding and avoidance of artificial formula supplementation unless medically necessary
- > Postnatal and community assistance and support services available (e.g. Domiciliary Midwifery Services, Australian Breastfeeding Association, CaFHS, private lactation consultant, General Practitioner)
- > Importance of a well-balanced diet, adequate nutrition and rest
- > Specific breast preparation is not necessary. No benefits or long term effects from exercises, massage or "nipple toughening" practices have been found

Document breastfeeding education progressively during pregnancy.

Antenatal Expressing

Some women may wish to consider antenatal expressing of breastmilk.

The aim of antenatal expressing is to have a ready supply of colostrum available for the newborn infant after birth, avoiding the need for use of artificial formula if stabilisation of neonatal blood glucose level (BGL) or supplementation of breastfeeding is required. The availability of colostrum may reduce the need for admission to or the duration of stay in a Special Care nursery.

Colostrum may be expressible from mid-pregnancy (starts to form from 16 weeks gestation). It has been hypothesised that lactogenesis II may commence earlier in women who have undertaken antenatal expressing⁹.

Some controversy exists around antenatal expressing possibly causing early onset of labour, with a limited number of high quality research studies available. Evidence from the Diabetes and Antenatal milk expressing trial (DAME) demonstrated safety when commenced from 36 weeks gestation¹⁰.

However, there is general acceptance of the following principles:

Antenatal Expression

Indications:

- > Previous supply issues
- > Planned caesarean section
- > Maternal gestational diabetes mellitus (GDM) or diabetes mellitus
- > Known fetal condition that will interfere with early initiation of breastfeeding
- > Maternal reassurance

Caution should be used in the following circumstances:

- > History of classical caesarean section or more than one caesarean section
- > History of preterm labour, cervical incompetence or cervical suture in situ
- > Threatened preterm labour in current pregnancy (unless there is agreement to allow labour and birth to proceed after this time)
- > Antepartum haemorrhage, oligohydramnios, polyhydramnios, pre-eclampsia, placental insufficiency, intrauterine growth restriction, fetal macrosomia or decreased fetal movements in current pregnancy
- > Placenta praevia or other abnormal placentation (e.g. accreta)
- > Multiple pregnancy

- > Substance misuse or methadone use in current pregnancy
- > Current anticoagulation therapy

Aim:

- > Undertake brief periods of gentle expressing only once or twice daily from 36 weeks gestation
- > Collect small volumes of colostrum at each expression
- > Store (and transport) expressed breastmilk (EBM) safely
- > Avoid/delay introduction of cow's milk protein into infant's diet

See [appendix 1](#) for Antenatal Expressing Protocol¹¹.

Each health service will need to develop a pathway for women to bring EBM at time of admission in labour or elective caesarean section for use as needed. See *Expressed Breast Milk. Safe Management and Administration in SA 2018 Clinical Directive* available at: <https://extapps2.sahealth.sa.gov.au/PracticeGuidelines/>.

Labour and Birth

Clinical practices during labour and birth impact initiation of breastfeeding.

During labour, practices which are supportive of breastfeeding include the presence of a support person, use of non-pharmacological methods of pain relief and allowing the woman to eat and drink as tolerated.

All medications administered to the mother will cross the placenta, and may affect the infant, resulting in delayed eye opening and decreased suckling at the breast. The effects will vary, depending on maternal metabolism, time interval between drug administration and time of birth, dose, and method of administration¹³.

Skin to skin contact assists the infant to maintain body temperature, stabilise blood glucose level and enable colonization with harmless bacteria, protecting the infant from pathogenic bacteria^{14, 15}. Immediate and uninterrupted skin to skin has also been demonstrated to have maternal benefits, reducing oxidative stress, thereby promoting wound healing and decreased emotional stress¹⁶.

Following birth, immediately place infant in skin to skin contact with its mother and facilitate uninterrupted skin to skin contact for at least 1 hour or until the baby's first breastfeed.

Following caesarean section with spinal or epidural analgesia, initiate skin to skin contact in theatre (if safe to do so) or within 10 minutes of arriving in recovery. Following caesarean section with general anaesthesia, facilitate skin to skin contact with the mother within 10 minutes of her being able to respond to her baby.

During skin to skin contact, ensure the infant is able to breathe without restriction, maintains a healthy colour, and can be easily observed. To enable unrestricted breathing, the infant's face must be visible, and there must be no cover over the mouth or nose.

Avoid weighing and measuring the infant immediately after birth unless there is a medical reason or mother requests this;

In the initial post-birth period, the infant may be alert for up to two hours, which provides an ideal time for skin to skin contact and to initiate breastfeeding.

Facilitate uninterrupted skin to skin contact for at least an hour. This should enable the infant to initiate breastfeeding when ready following a sequence of reflex behaviours.

Early feeding stimulates the passage of meconium, increases stimulation of the breast and synthesis of breastmilk, enhances mother-infant bonding and attachment, and has been shown to increase the duration of breastfeeding¹⁷.



Postnatal

Feeding Cues

Early feeding cues: Increased restlessness, yawning, stretching, turning movements of the head towards the mother (rooting), tongue extensions and mouth opening.

Moderate feeding cues: Increased physical movements, infant brings hands and fingers to the mouth, spontaneous sucking movements, intermittent crying.

Late feeding cues: Crying, infant becomes distraught if feeding not initiated.

See <http://www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=302&id=1810#5> for visual examples of feeding cues¹⁸.

Encourage mothers to initiate feeding when early or moderate feeding cues are noted. If the infant is distressed and crying, he/ she will need to be calmed and settled prior to attempting to breastfeed.

Initiate first breastfeed during skin to skin time following birth.

Positioning and Attachment

Encourage woman to optimise comfort prior to feeding (i.e. adequate analgesia, drink available, comfortable position either sitting or lying). During feed ensure posture is appropriate for mother.

See <http://www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=302&id=1810#3>¹⁹ for visual examples of positioning for mother.

Unwrap infant to maximize contact between mother and baby. Allow the infant's body to be positioned in close contact directly opposite the mother's body, with infant's shoulders and neck supported. Ensure baby's head gently tilts back which enables the chin to make first contact with the breast.

Mother may utilise cross-cradle or cradle hold, in side-lying or laid-back (biological) position, to support the infant's body, stabilizing the position and enabling the infant to instinctively search for and attach to the breast⁸.

See <http://www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=302&id=1810#4>²⁰ for attachment pictures and information for women.

Position infant so that nose is opposite mother's nipple allowing baby to smell and search.

Using hands-off technique, allow infant to self-attach onto the breast, as this promotes effective feeding.

If necessary, the mother may assist by shaping or supporting her breast.

The infant can be encouraged to open mouth widely by gently brushing nipple onto top of his/her mouth.

When mouth is wide open, quickly bring infant forward onto breast, with chin touching breast, so that infant can take a large mouthful of breast tissue into mouth, and the mother's nipple extends deeply into the infant's mouth.

Correct Attachment

Signs of correct attachment

Mouth wide open, with cheeks full, and lips well sealed around the areola or breast tissue. (Note: the lower lip will not be visible while the infant is breastfeeding).

No evidence of hollowing of the cheeks during sucking

Nose is clear of the breast, enabling infant to breathe without restriction

Chin pushed deeply into breast tissue

No audible clicking sounds

Pain with attachment

The mother may note some initial nipple discomfort during attachment as the nipple elongates inside the infant's mouth, but this should settle rapidly. The mother may report a tugging or pulling sensation during feeds, but minimal discomfort.

If attachment is painful suggest she move baby gently to improve attachment. If there is no improvement, advise the mother to gently detach infant from the breast by inserting her clean finger into the corner of the infant's mouth to release the vacuum. Attempt correct attachment.

Sucking pattern

Prior to lactogenesis, sucking may be frequent and short, with few or no sustained sucking periods.

After lactogenesis II has commenced, the sucking pattern changes, so that breast feeds are initiated with short, rapid sucks to initiate the milk ejection reflex (MER). When the MER occurs, sucking frequency slows, resulting in periods of rhythmic sucking with audible swallowing and short resting periods or pauses²¹.

General

As the infant becomes satisfied during the feed, the sucking rate slows, and the infant may let go of the breast spontaneously when satisfied.

The infant may feed from one or both breasts at each feed.

After feeding, the nipple should appear normal in colour and shape, with no evidence of damage or ridging (e.g. grazes or bruising).

After feeding, the mother's breasts should feel softer, with reduced tightness or heaviness, and any lumps which may have been present prior to the feed should have resolved or reduced.

Rooming In:

Allow mothers and infants to remain together 24 hours per day. The infant should sleep in the same room or area as the mother, but not co-sleep with the mother on any surface as co-sleeping increases the risk of SIDS.

Benefits of rooming in include:

- > Mother learns to read baby feeding cues and develop settling techniques, thereby increasing her confidence and skills in achieving breastfeeding;
- > Increased opportunities for skin to skin contact
- > Increased likelihood that infant will be exclusively breastfed
- > Longer duration of breastfeeding when compared to mother- baby dyads where the baby sleeps in a separate room²²
- > Reduction in infection risk due to reduced exposure to foreign bacteria
- > Reduced risk of incorrect identification of mother and infant (in the hospital/ healthcare facility setting)
- > Enhanced emotional development of the infant;
- > Reduced Sudden and Unexpected Infant Death (see Safe Infant Sleeping Standards: <http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+topics/child+health/safe+infant+sleeping+standards>²³)



Feeding Frequency:

First 24 hours following birth (see [flowchart 1](#))

The initial post-birth alert period is usually followed by a sleepy period, which may last 6-10 hours or more²⁴.

Successful breastfeed around time of birth

If the infant had an adequate breastfeed following birth, allow the infant to sleep until it wakes and 'demands' (up to 8 hours following birth feed).

- > If the infant has another adequate breastfeed at this point, he/she can be left to wake and 'demand' their next feed. Frequency of feeds should increase in the next 24 hour period.
- > If the infant does not have another adequate breastfeed at this time, he/she can be left for a further 2 hours if not ready to feed. Check observations and encourage mother to express.
- > At 10 hours post birth feed, facilitate skin to skin contact and attempt breastfeed again.
 - If the infant has another adequate breastfeed at this point, he/she can be left to wake and 'demand' their next feed. Frequency of feeds should increase in the next 24 hour period.
 - If the infant does not have a successful breastfeed but is vigorous, express and give EBM. If no EBM is available, consider obtaining infant blood glucose level (BGL) and make ongoing plan.
 - If the infant does not have a successful breastfeed and is not vigorous or not making attempts to feed, obtain BGL and check temperature. If temperature < 36°Celsius and/or BGL <2mmo/L and/or infant is clammy, jittery or hypotonic, immediately contact neonatologist, pediatrician or GP (as per unit protocol).

Infant did not have successful breastfeed around the time of birth

If the infant has not breastfed by 6 hours following birth:

- > Wake the infant
- > Initiate skin to skin contact again and watch for feeding cues.
- > Check infant temperature. If 36-36.6°Celsius, place warm blankets over mother and infant.
- > If the infant has an adequate breastfeed at this point, allow the infant to sleep until it wakes and 'demands' (up to 8 hours following this first feed). Monitoring of breastfeeding frequency and success would then follow the guidelines as above for the first 24 hours.
- > If the baby does not have a successful breastfeed at 6 hours following birth either, but is vigorous, express and give EBM. If no EBM is available, consider obtaining infant BGL and make ongoing plan.
- > If the infant does not have a successful breastfeed and is not vigorous, consider BGL, check observations and obtain review.

24-72 Hours Post Birth

Infants should breastfeed a minimum of 8 feeds, have at least 2 wet nappies and 3 soft green/black stools in every 24 hour period between 24 and 72 hours of age. If these criteria are not met, undertake the following assessments:

- > Infant temperature
- > Breastfeeding vigour
- > Breast attachment



- > Establishment of milk supply
- > Condition of mother's breasts/nipples
- > Infant's oral anatomy
- > Mother's breastfeeding knowledge and history
- > Infant's weight

Undertake infant BGL and refer to the neonatologist, paediatrician or GP if the infant displays any of the following:

- > Hypothermia (< 36°Celsius)
- > Poor feeding for longer than 6-8 hours
- > Hypotonia
- > Lethargy
- > Clamminess
- > Jitteriness

General

Immediately after birth, the onset of lactation is initiated due to the sudden decrease in serum oestrogen and progesterone levels at the time of placental delivery. The infant will have variable sleep-wake cycles, and may feed frequently as lactogenesis starts.

From 38-96 hours postpartum, cellular metabolism changes, and milk volume increases rapidly. Ongoing maintenance of lactation requires frequent removal of milk from the breast, either by breastfeeding or expression.

Healthy term infants will feed at irregular intervals, requiring a minimum of 8-12 feeds in a 24 hour period¹. Feeding frequency depends on effective milk transfer and according to need. Feeds should therefore not be timed or restricted unless there is a clinical indication which may necessitate additional feeding strategies to ensure adequate intake.

Infants are mostly settled and content between feeds, although all infants will have some unsettled periods.

Serum prolactin levels are higher during REM sleep, and increased prolactin surges in response to suckling are greater during night feeds, therefore contributing to establishment of adequate lactation²⁵.

Exclusive breastfeeding is recommended for the first 6 months, after which other foods need to be introduced. Breastfeeding can continue for 12 months and beyond, depending on mother – infant preferences.

Indication of and Assessment of Effective Feeding:

In the absence of specific relevant medical conditions or surgical history, with frequent opportunities to initiate breastfeeds, and with adequate support, most mothers are able to produce adequate milk supply for their infant(s).

Signs of effective breastfeeding:

- > Baby wakes and demands feeds and looks comfortable and calm during feed.
- > Good muscle tone is evident.
- > Lower jaw rhythmically moving during sucking with audible swallowing during feeds
- > Healthy skin: Physiological jaundice is common, but usually resolves rapidly with adequate breastmilk intake. Other causes of jaundice, especially if persistent or increasing in severity, should be investigated and managed (see *Neonatal Jaundice* PPG available at www.sahealth.sa.gov.au/perinatal)²⁶.



- > Urine output: there may be 1–2 wet nappies in the first 24 hours. As breastmilk intake increases, urine output increases to 5-6 heavily wet nappies within a 24 hour period after approximately 5 days.
- > Bowel actions change from meconium (in the first 24-36 hours) to transitional stool (36-72 hours) then there is a gradual change to soft, semi-formed mustard yellow stools. Mature milk stools are yellow, in colour, and may be quite fluid / runny. In the first 3-4 weeks, bowel actions are expected at least daily, and may be more frequent.
- > After 3-4 weeks, breastfed infants may have less bowel actions – e.g. every few days.
- > From 6 months onwards, the stools will change in colour and smell as other foods are introduced into the diet.

Relevant medical or surgical conditions which may delay or impact on adequacy of breastmilk supply include hypothyroidism, obesity, type 1 diabetes, breast reduction surgery (especially if there has been nipple relocation), PCOS, prolonged labour, emergency LSCS, retained products of conception.

Infant weight

There is no consensus about acceptable initial weight loss, but ranges of acceptability are from 7-10% below birth weight. Maternal intravenous therapy during labour has been demonstrated to correlate with infant weight loss in the first 24 hours¹².

As breastmilk intake increases, weight gain occurs.

- > Return to birth weight by approximately 14 days after birth.
- > Weight gain 150 – 200 gm per week for first 3 months
- > Weight gain 100 – 150 gm per week for 3-6 months
- > Weight gain 70 – 90 gm per week from 6 – 12 months²⁸
- > Weight is doubled from birth weight by 5-6 months
- > Weight is tripled from birthweight by 12 months²⁹

If the infant loses more than 10% of birth weight from day 3 (or 5 depending on local guidelines for weighing babies), further assessment of mother, infant and breastfeeding need to occur (see [flowchart 2](#))

Depending on assessment, a number of management strategies may need to be employed. Examples include breast expression and offering the infant EBM, professional observation and support of breastfeed, assessment of infant by medical officer and medication (see [flowchart 2](#))

Maternal Supplements

There are supplements available to support breastfeeding but are not routinely recommended in the presence of an adequate diet.

Iron

See *Anaemia in Pregnancy* PPG (www.sahealth.sa.gov.au/perinatal)³⁰

Vitamin D

See *Vitamin D Status in Pregnancy* PPG (www.sahealth.sa.gov.au/perinatal)³¹



Maternal Medications and Breastfeeding

A small number of medications and some complementary medicines are contraindicated with breastfeeding.

Individual risk-benefit analysis must be undertaken when considering the use of these medications³².

Telephone referral can be made to the Drug Information Service at the Women's and Children's Hospital (Phone 8161 7222), for discussion of appropriate medication options. (This service has the most up-to-date information available.)

Contraception

Provide appropriate contraceptive advice as indicated, allowing informed choice by the woman. Progesterone only contraceptives have not been shown to have a negative impact on breastfeeding, including duration of breastfeeding or timing of introduction of supplementary feeds.

The use of combined hormonal contraception has been demonstrated to adversely affect breastfeeding, with some studies showing reduced duration of breastfeeding and increased supplementation³³.

Impact of Introduction of Supplementary Feeds

There are a number of medical conditions in which it is acceptable to initiate supplementary feeding, either temporarily or on an ongoing long-term basis.

See http://apps.who.int/iris/bitstream/handle/10665/69938/WHO_FCH_CAH_09.01_eng.pdf;jsessionid=619468C123398BEB05C8E73F13BE6386?sequence=1³⁴

Introduction of supplementary feeds in the absence of legitimate clinical indication can lead to:

- > Decreased exclusive breastfeeding and overall reduced duration of breastfeeding^{35, 36}
- > Reduced maternal milk supply, due to reduced opportunities or time feeding at the breast
- > Breast refusal, especially if supplementary feeds have been given by early introduction of bottle and teat
- > Inadequate infant nutrition, due to incorrect preparation of artificial formula
- > Increased risk of gastro-intestinal infection, due to poor hygiene practices or the use of incorrectly prepared/stored/collected artificial formula or donor expressed breastmilk

Where supplementary feeds are clinically indicated, consideration should be given to administration by spoon, cup, supply line, syringe/finger or gavage feeding. Ensure mother receives individual instruction in the safe preparation of infant formula.

Use of Bottles, Teats, Dummies

Bottles, teats and dummies are not recommended during the early weeks of establishing breastfeeding (approximately 4-6 weeks).

Risks associated with use of bottles and teats in the neonatal period include reduced lactation, difficulty in resuming breastfeeding (due to different sucking technique required for bottle feeding) and breast refusal.

Dummy use has been associated with reduced exclusive breastfeeding duration, dental malocclusion, increased oral infection risk and low milk supply³⁷.

If, following discussion, the mother makes an informed decision to use bottles, teats or dummies; her decision will be respected and supported.

Expression of Breastmilk

Expressing is defined as the removal of milk from the breast(s) by either manual technique or through use of a specifically designed pump.

Indications:

- > Preterm or hospitalised infant;
- > Hypolactation (low milk supply);
- > Blocked duct / Mastitis
- > Maternal medications for which breastfeeding is contra-indicated, but for which there is no safe, effective, alternative option;
- > Mother returning to work or planning to leave infant with carer;
- > Maternal illness in which breastfeeding is temporarily not recommended. In Australia, women with Human Immunodeficiency Virus (HIV) are recommended not to breastfeed, In other areas of the world, the recommendations re breastfeeding may differ, depending on individual assessment of the situation, viral load, and clinical status of the woman.

Expressing for premature infants or those infants requiring increased level of care in the early newborn period and who are unable to breastfeed should be initiated within the first 6 hours after birth.

Initiation of expressing within the first hour after birth has been shown to increase milk volumes¹².

Frequency of expressing will be individually assessed, depending on the indication, for mothers whose infants are premature or requiring high level care.

Expressing should be undertaken at least 7-8 times within a 24 hour period, including at night, until lactation is well established.

See Appendices for [Hand Expression Technique](#) and information on EBM management.

After Discharge/Community Services

Provide referral for ongoing care via Midwifery Group Practice midwife, domiciliary midwifery service or other follow-up support service such as CaFHS, GP, etc. as per local guidelines.

Provide referral to CaFHS if early breastfeeding review is recommended and mother consents.

Inform woman of availability and access to community infant feeding support services. (E.g. Local Community Health Centre, CaFHS, Australian Breastfeeding Association, International Board Certified Lactation Consultant). The My Health and Development Record (the Blue Book) should be referred to when promoting these supports and services.

Advise women with culturally and linguistically diverse backgrounds of information available in other languages available from the ABA website and/or. <https://medlineplus.gov/languages/breastfeeding.html>³⁸

Document clinical details, including weight and feeding management in infant's Health Record booklet.

Provide information to father of baby or significant others of their crucial role in supporting the breastfeeding mother. This support can include (but is not limited to) adequate rest for mother when infant rests, fluids and nutrition, support with household chores and other children in the family during the early weeks of infant being home.

Advise women of when to seek additional support: maternal health issues; e.g. heavy PV loss, fever, pain, breast or nipple issues or for infant issues such as not waking for feeds, reduced urine output or infrequent stooling.



Resources

Useful Websites for Health Professionals

Guidance for health facilities on implementing the 10 Steps to Successful Breastfeeding

https://www.unicef.org/media/media_102787.html

<http://www.who.int/nutrition/publications/infantfeeding/bfhi-implementation/en/>

Baby Friendly Health Initiative Australia

https://www.midwives.org.au/sites/default/files/uploaded-content/website-content/BFHI/bfhi_handbook_for_maternity_facilities_20160804.pdf

BFHI 7 Point Plan for Community Health Services

<https://www.midwives.org.au/resources/bfhi-information-pack-community-facilities>

Global Health Media

<https://globalhealthmedia.org/portfolio-items/breastfeeding-attachment/>

Recommendations for common breastfeeding concerns: Queensland Clinical Guideline: Establishing Breastfeeding

https://www.health.qld.gov.au/_data/assets/pdf_file/0033/139965/q-bf.pdf

Useful Websites for Women

For extensive information and pictures on establishing breastfeeding, feeding cues, expression and storage of breastmilk etc.

Child and Youth Health

<http://www.cyh.com>

Raising Children Network

<http://raisingchildren.net.au/>

Expression and Storage of Breastmilk (Policy and Information Leaflet for women)

www.sahealth.sa.gov.au/perinatal

Australian Breastfeeding Association (including email counselling and live chat)

<https://www.breastfeeding.asn.au/>

Videos for:

Attaching Your Baby at the Breast

<https://globalhealthmedia.org/portfolio-items/attaching-your-baby-at-the-breast/>

How to Express Breastmilk

<https://globalhealthmedia.org/portfolio-items/how-to-express-your-first-milk/>

<https://globalhealthmedia.org/portfolio-items/how-to-express-breastmilk/>

Phone resources for women

CaFHS 1300 733 606

CaFHS Parent Help Line 1300 364 100

ABA telephone support line 1800 mum 2 mum (1800 686 268)

Other

CaFHS Breastfeeding Clinics

CaFHS Torrens House

ABA local support group

Private midwives and lactation consultants



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Appendix 1: Antenatal hand expressing¹¹

Equipment:

Syringes with closing cap

Ziplock bags

Information sheet about Expressed Breastmilk Storage and Management

Stickers with name/date/time information

Process:

Start at 36 weeks gestation (using caution with [specific clinical presentations](#))

Instruct woman re hand expression technique

Advise woman to prepare equipment first, and to express in a comfortable, relaxed position;

Instruct woman to thoroughly wash hands with soap and water, and dry before handling colostrum and equipment

Recommend starting after a shower, while the breasts are warm

Instruct woman to gently massage breasts prior to expressing

Instruct the woman to express for a few minutes on each breast once or twice each day

Instruct the woman to stop expressing if she experiences cramping uterine pain, vaginal bleeding or symptoms of hypoglycaemia and to seek health professional advice

Instruct the woman in use of a syringe to draw up drops of colostrum, and to cap syringe when finished

Instruct the woman to use a new syringe each day. If expressing twice per day, it is recommended to use a new syringe for each expression. Capped syringes are available for sale at most pharmacies

Instruct woman to complete the details on the identification sticker, attach it to the syringe and store it in the freezer in the ziplock bag. Colostrum can be stored in the coldest part of the fridge (at the back) for three days before being frozen

Advise the woman to inform her health professional that she will be bringing frozen colostrum into the hospital at time of admission (she may also include this on her birth plan)

For EBM storage information see [Appendix 3](#):



Appendix 2: Postnatal hand expressing

Hand Expressing Process:

Wash hands first;

Use clean, sterilised container, spoon or cup. (In the hospital healthcare facility use sterile containers provided);

Initiate the MER by gentle massage and warmth over the breast. Warmth may also assist the MER;

Breast and nipple massage stimulate oxytocin release, which shortens and widens the lactiferous ducts, increases pressure inside the breast, and maximises milk removal;

After massage, position the thumb and forefinger on the edge of the areola;

Gently press back into the breast tissue;

Using a rhythmical compression and release, with the forefinger and thumb in a C shape, 2 finger widths away from the nipple, top and bottom, press and relax as the finger pads of the thumbs and forefinger come together. Rotate fingers around the radius of the nipple to effectively hand express from the milk ducts. The lactiferous ducts may be palpable under the skin surface;

Continue the process for approximately 10-15 minutes, or while milk can be expressed comfortably. To effectively express from all areas of the breast, the fingers can be moved to different positions during expressing. For example, the woman may wish to start with her fingers at the 6 o'clock and 12 o'clock position, then move to 3 o'clock and 9 o'clock

If a breast pump is used for expressing, follow the manufacturer's instructions for preparation, use and cleaning of the equipment.

Hand expressing has been shown to be more effective to express colostrum. Breast pump use has been demonstrated to increase milk volumes after lactogenesis II has occurred¹⁷.

For more information on postnatal breast expression technique see:

<http://www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=302&id=2141>

or the video hyperlink: <https://med.stanford.edu/newborns/professional-education/breastfeeding/hand-expressing-milk.html>



Appendix 3: Safe Storage of EBM¹²

Length of time breast milk can be stored

Breast milk status	Storage at room temperature (26°C or lower)	Storage in refrigerator (5°C or lower)	Storage in freezer
Freshly expressed into sterile container	6-8 hours If refrigeration is available store milk there	No more than 72 hours Store at back, where it is coldest	2 weeks in freezer compartment inside refrigerator (-15°C) 3 months in freezer section of refrigerator with separate door (minus 18°C) 6-12 months in deep freeze (minus 20°C)
Previously frozen (thawed)	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 after feed	Discard	Discard

For EBM storage information see:

*Expressed Breast Milk. Safe Management and Administration in SA 2018 Clinical Directive*¹² and Patient Information Brochure³⁹ available

at: <https://extapps2.sahealth.sa.gov.au/PracticeGuidelines/>



Appendix 4: WHO Acceptable Medical Reasons for the use of Breastmilk Substitutes³⁴

INFANT CONDITIONS:

Infants with the following conditions should not receive breast milk or any other milk except specialised formula:

- Classic galactosaemia: a special galactose-free formula is needed
- Maple Syrup Urine Disease: a special formula free of leucine, isoleucine and valine is needed
- Phenylketonuria: a special phenylalanine-free formula is needed, though some breastfeeding is possible under careful monitoring.

Infants with the following conditions for whom breast milk remains the best feeding option, but who may need other food in addition to breast milk for a limited period:

- Very low birth weight infants (those born weighing less than 1500g)
- Very preterm infants (i.e. those born less than 32 weeks gestational age)
- Newborn infants who are at risk of hypoglycaemia due to impaired metabolic adaptation or increase glucose demand. This includes those who are preterm, small for gestational age, or who have experienced significant intrapartum hypoxic/ ischaemic stress, as well as those who are ill and those whose mothers are diabetic if their blood sugar fails to respond to optimal breastfeeding or breast milk feeding.

MATERNAL CONDITIONS:

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

Mothers who may need to avoid breastfeeding:

- HIV infection: if replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS)

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

Mothers with the following conditions or situations may need to avoid breastfeeding temporarily:

- Severe illness that prevents a mother from caring for her infant (eg sepsis)
- Herpes simplex virus type 1 (HSV-1): Direct contact between lesions on the mother's breasts and the infant's mouth should be avoided until all active lesions have resolved.
- Maternal medication including
 - Sedating psychotherapeutic drugs, anti-epileptic drugs and opioids and their combinations, which may cause side effects such as drowsiness and respiratory depression. These drugs should be avoided if a safer alternative is available.
 - Radioactive iodine-131. If possible, a safer alternative may be used. A mother can resume breastfeeding about 2 months after receiving this substance.
 - Excessive use of topical iodine or iodophors (e.g. povidone-iodine) especially on open wounds or mucous membranes, which can lead to thyroid suppression or electrolyte abnormalities in the breastfed infant.
 - Cytotoxic chemotherapy.

Mother with the following conditions can continue breastfeeding, although health problems may be of concern:

- Breast abscess: breastfeeding should continue on the unaffected breast; feeding from the affected breast can resume once treatment has started.
- Hepatitis B: infants should be given Hepatitis B vaccine within the first 48 hours or as soon as possible thereafter.
- Hepatitis C
- Mastitis: if breastfeeding is very painful, milk will need to be removed by expression, to avoid progression of the condition.
- Tuberculosis: mother and baby should be managed according to national tuberculosis guidelines.
- Substance use: Mothers should be encouraged not to use these substances, and should be offered opportunities and support to abstain from use. Mothers who choose not to cease their use of these substances or who are unable to do so should seek individual advice on the risks and benefits of breastfeeding depending on their individual circumstances. For mothers who use these substances in short episodes, consideration may be given to avoiding breastfeeding temporarily during this time.
 - Nicotine, alcohol, ecstasy, amphetamines, cocaine and related stimulants have been demonstrated to have harmful effects on breastfed babies.
 - Alcohol, opioids, benzodiazepines and cannabis can cause sedation in both mother and baby.

ADDENDUM FOR AUSTRALIA⁴⁰

The Baby Friendly Health Initiative Australia also considers the following conditions to be acceptable medical reasons for the use of breastmilk substitutes in Australia.

- Primary Inadequate Breastmilk Supply
- Breast surgery: Women who have had breast surgery such as breast reduction with nipple relocation may find it necessary to use a breastmilk substitute, to ensure that their baby receives adequate intake and nutrition.
- Bilateral breast hypoplasia: Every attempt should be made to stimulate an adequate milk supply, but if unsuccessful, the baby may need a breastmilk substitute to receive adequate nutrition and intake.

HIV infections: The World Health Organisation released updated guidelines in 2010, indicating that if a decision is made to use replacement feeding it must be acceptable, feasible, affordable, sustainable and safe. An individual decision should be made in consultation with each mother, taking into account her circumstances and viral load.

Hepatitis B: Under the current Hepatitis B recommended prophylaxis, breastfeeding is not a risk factor for mother-to-child transmission.



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