

3.0 Feeding for the first 6 months

3.1 Breastfeeding: best for baby, best for mum

“Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants.... with important implications for the health of mothers” (1).

This section of is not about how to breastfeed, nor the anatomy of the breast. There are many professional resources you can refer to, including the Australian Breastfeeding Association (refer to key documents section) who provide reviews and summaries of available resources for both your professional development and parent information.

In Australia, it is recommended that infants be exclusively breastfed until 6 months of age. It is further recommended infants continue breastfeeding until 12 months of age – and beyond if both mother and infant wish (2).

We have approached this section from the stance that breastmilk is the sole food (and normal nutrition) for the first 6 months of life and to be used complementarily until at least 12 months of age.

Almost all mothers are capable of breastfeeding their infants. Outcomes are much improved where the mother has the support and encouragement of the infant’s father, other family members, the hospital, and the community. Many mothers – perhaps the majority – encounter some difficulties with breastfeeding but, with support and encouragement from health professionals and community organisations, they can nearly always continue to breastfeed. Further, most mothers can continue breastfeeding if they choose to return to paid work or study.

All health workers have an obligation to promote breastfeeding in the community and to ensure best practice in breastfeeding is followed. In comparison with some other countries, Australia’s breastfeeding record is good, but it is important for the health of the nation’s mothers and infants that initiation rates and the duration of breastfeeding be increased.

In 2003, most Queensland children (92%) under 5 years had been breastfed at some point. This is in line with the NHMRC objective of breastfeeding initiation rate in excess of 90% (2). At 6 months of age, the rate of breastfeeding had fallen to 57% (3, 4). It is an Australian objective to have 80 percent of infants being breastfed at the age of 6 months (2).

Approximately three in five mothers (60%) surveyed in the *Queensland Infant Nutrition Survey, 2003*, “who had ever breastfed their child sought help or support with breastfeeding after leaving hospital. These mothers usually went to at least two different sources of support and advice. The main source was family and friends, followed closely by the local community or child health centre” (3).

We want to ensure parents are making informed decisions. Breastfeeding and bottle feeding with artificial infant milks are not comparable.

Women need information about why breastfeeding is normal and about the problems associated with infant formula, so they can make an informed decision about feeding method (7).

In this chapter you will find some practical advice, tools and further resources for you to incorporate into your daily practice to encourage, support and promote exclusive breastfeeding until 6 months of age and continued breastfeeding along with complementary foods until beyond the infant’s first birthday.

Recommendations from the *Dietary Guidelines for Children and Adolescents in Australia*

Encourage, support and promote exclusive breastfeeding for the first 6 months of life to achieve optimal growth, development and health (14). Followed by the introduction of appropriate solid food at this age and continued breastfeeding... breastfeeding to continue until 12 months of age, and thereafter as long as mutually desired (1,2,5).

GUIDELINES

Guidelines: Recommended breastfeeding and solid food introduction for infants¹²⁹

Birth	6 months	12 months	
	Breastfeeding	Breastfeeding	Solid foods
	Breastfeeding	Introduction of solids	Introduction of cow's milk

Reprinted with permission from the Report of the Chief Health Officer Queensland, 2006. Adapted from the National Health and Medical Research Centre. Infant feeding guidelines, Canberra 2002.

The nourishment for the foetus is taken from the mother's body stores by the blood and transported through to the placenta, via the umbilical cord to the baby. All that happens when the baby is born is these nutrients are taken in the bloodstream to the breast, changed into milk and the baby simply needs feeding as often as the infant is hungry (6).

3.2 The benefits of breastfeeding (2,5,9,10,11)

Baby

- Breastmilk is dynamic and living. It constantly changes in its nutrient composition to meet the needs of the baby throughout different times of feeding.
- Breastfeeding protects against gastrointestinal and (to a lesser extent) respiratory infection, and the protective effect is enhanced with the greater duration and exclusivity of breastfeeding (9).
- Prolonged and exclusive breastfeeding has been associated with a reduced risk of the sudden infant death syndrome (SIDS) (9).
- Breastfeeding reduces the likelihood of later diseases and health risks including obesity, diabetes, heart disease(10), Crohns disease and lymphoma (9).
- Breastmilk is ready when your baby needs it.
- Breastmilk is hygienic.
- Babies digest breastmilk easily.
- Breastmilk contains a lot of natural substances that help a baby's development and growth.

Mother

- Breastfeeding helps in the physical recovery from childbirth.
- Breastfeeding helps the mother in weight stabilisation after pregnancy and childbirth.
- Breastfeeding may possibly also reduce the risk of some cancers, such as breast or ovarian cancer (9,10).
- Bonding happens between the mother and baby during breastfeeding.
- Breastmilk is inexpensive and does not need to be prepared.
- Increased fertility control (5).
- Reduction in the risk of mothers with a history of gestational diabetes developing Type 2 diabetes (5).
- Possible protection against osteoporosis (9).

Parent handout can be found at

www.health.qld.gov.au/child&youth/factsheets/



3.3 Natural patterns of breastfeeding

The first breastfeed

Studies have shown that mothers who feed or have skin contact with their babies in the first 2 hours after birth are more likely to breastfeed for longer than those who do not (7).

Ideally uninterrupted skin-to-skin contact should be maintained following birth. This will increase the chance of the infant attaching correctly at the first feed (7). Many infants are not ready to feed directly following delivery. The infant is often quiet and alert during the first 20 minutes or so, then spontaneously begins the instinctive prefeed behaviour, orientating itself to the breast and preparing to feed (7).

If the infant is left skin-to-skin, prone on mother's abdomen following birth, the infant will gradually crawl to the breast, find the nipple, attach and begin to suckle unaided, usually within 70-90 minutes (7).

A successful first breastfeed has a number of positive effects (2)

- It builds the mother's confidence in her ability to breastfeed.
- The infant starts to receive the immunological benefits of colostrum.
- The infant's digestion and bowel function are stimulated.
- Correct sucking at the breast at this stage may avert later sucking difficulties.
- The bonding and attachment between mother and infant are enhanced.

Unless there is a medical reason, mother and infant should remain together for at least the first hour after birth, prior to weighing and bathing to allow the infant to follow their instinctive behaviours. Thereafter mother and infant should room-in together, so breastfeeding begins and proceeds according to the infant's needs – without restriction on the number and length of feeds (2). This also ensures the infant receives colostrum early to prevent or reduce early weight loss; stimulates the passage of meconium, reducing the risk of neonatal jaundice; and confers immunological protection to the infant (7).

Colostrum

Colostrum, which is produced in the breast during late pregnancy and for the first 30 to 40 hours after birth, is yellowish and thicker than mature milk (2). Colostrum provides all the nutrients, including water, required by the neonate (2). It is high in protein, and sodium, and low in lactose (7). It also contains lactoferrin, immunoglobulin A, enzymes, maternal antibodies, living cells—leukocytes, neutrophils and macrophages—and non-pathogenic bacteria and prebiotics, which help to colonise the gut of the newborn and limit the growth of pathogenic bacteria and viruses and to protect against illness (2).

Initiation of breastfeeding introduces the wide range of normalcy experienced by individual women throughout their feeding practices. Feeds within the first 48 hours, produce only a small amount of colostrum (as little as half a teaspoon). Anywhere from 2-4 days after birth, supply will rise to 500-800ml of milk per day (6)

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Exclusive breastfeeding ensures an infant receives the full nutritional and protective benefits of colostrum and breastmilk (2).

Information can be found at www.health.qld.gov.au/phs/documents/cyhu/28099.pdf

Further information on baby led attachment can be found at www.breastfeeding.asn.au, or contact the breastfeeding helpline.



One or both breasts at each feed?

As a general rule, the baby should be allowed to finish feeding from the first breast before switching to the other breast. This allows the baby to receive the higher-fat milk as the breast empties (7).

While the majority of babies will indicate they have finished the first side by coming off the breast spontaneously, others will stay on the breast, without actively sucking or swallowing. If this is occurring, the mother should be encouraged to swap to the second side after 20-30 minutes (7).

Even when the mother initiates swapping sides, there are some babies who:

- have damp but not wet nappies
- cry constantly but sleep within a minute or two of the breast being offered
- sleep for long periods, especially overnight
- have poor weight gains.

These babies need to be swapped one side to the other more frequently, as soon as the swallowing intervals lengthen or after 5 minutes of active feeding. The infant will get a rush of milk as the infant swaps from breast to breast and will be inclined to suck more efficiently.

Some infants who come off the breast spontaneously only need to feed from one breast at some or all feeds... Occasionally, if a mother has an abundant milk supply feeding from just one breast at each feed may settle an upset, crying infant (7). If the infant is only taking one breast at each feed, ensure the other breast is offered first the next time (7).

If milk withdrawal has not started within 3 days post-partum, the changes in milk composition with lactogenesis are reversed and the likelihood of the establishment of successful breastfeeding declines (2).

Breastmilk

Breastmilk is constantly changing – throughout lactation and throughout the feed (2).

Human milk uniquely adapts to the changing needs of the infant during the course of lactation. It requires a complex combination and interplay of hormones, together with an infant who initiates and maintains lactation, and a mother responsive to her infant needs (7).

The composition of the first secretion after birth gradually changes as lactation is established and production of milk begins in the breast tissue. Milk comes in about 48 to 72 hours after birth. By 7 to 14 days after birth, lactation should be established and the transition from colostrum to mature milk should be under way.

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Colostrum and breastmilk can vary greatly in colour and consistency. The colour is irrelevant to the quality of the milk (8).

The colour of colostrum varies from clear to pale yellow to bright orange. Mature breastmilk varies from creamy to opalescent. Vitamin supplements and some foods taken by the mother can alter the colour of milk (8).

The presence of blood may cause red to pinkish brown or “rusty” discolouration of breastmilk. Small amounts of blood in colostrum may be due to duct hyperplasia – an extra growth of cells in milk ducts during pregnancy, which causes bleeding when dislodged as the milk begins to flow. It is usually of no significance and will disappear in a few days (8).

Trauma to the mother’s nipple is the most common cause of blood-stained milk. It is important to establish the cause of blood-staining and treat it. However, it will cause no harm to the infant (8) although it may cause vomiting if there are significant amounts of blood in the stomach.

The rate of milk production is regulated to match the amount of milk removed from each breast at each breastfeed ie. SUPPLY = DEMAND. Unrestricted feeding, both day and night, is an important factor in successfully establishing breastfeeding and results in adequate milk production.

Additionally, the anatomy of the breast varies greatly between women. Some women can store up to six times more milk than other women. Women with large storage capacity have more flexibility in feeding frequency, whereas women with a smaller storage capacity need to feed fairly evenly and frequently throughout the 24-hour day.

Other variances include rate of milk flow, nature of mouth-breast positioning ... Advice should be tailored for individual differences (2).

The sleepy infant

After the initial alert period following birth, some infants become very sleepy for the next 24 hours or so. The infant may be affected by a long labour, or medications given during labour.

Skin-to-skin contact is best practice following birth. This can assist with the instinctive behaviours of both mothers and infants and lessen the chance of feeding difficulties in the days ahead.

The first 72 hours are very important for the stimulation of breastmilk. If the infant has fed well at least once in the first day following birth there is no cause for concern. During the daytime, if the infant does not ask for a feed after about 5 hours, rouse the infant and put him/her on the breast (2).

A number of strategies can be used to rouse an infant: (2, 12)

- skin-to-skin contact, allowing the infant to feed when ready
- changing the nappy
- expressing a little colostrum and giving it by a teaspoon, syringe or cup can give the infant the ‘taste’ and the infant will then want to start sucking from the breast
- unwrapping the infant, talking to the infant, gently stroke legs, tummy, cheeks and lips
- cuddling the infant

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Most infants soon recover from the initial sleepy period and begin to seek feeds frequently. This can be very tiring for the mother, but the midwife can prepare her for this and reassure her about the benefits of early frequent feeding. This gives the infant colostrum, stimulates full milk production, and reduces the chance of breast engorgement (2).

If the infant does not take the breast in spite of all efforts and is otherwise well, it is essential to express the colostrum and feed it by teaspoon, syringe or cup (2).
Refer to lactation consultant.

Parent handout at:

www.health.qld.gov.au/child&youth/factsheets/default.asp



The unsettled infant (2)

Infants cry for many reasons. This is the infant's most powerful means of communication.

It is normal for infants to have at least one unsettled period per day. It usually occurs in the evening but can happen at any time. During these times, the infant may want to feed frequently. This often causes mothers to be worried about their milk supply but it is rarely the cause of the problem. Reassure the mother her milk production is continuous over a 24 hour period, and the rate of production varies according to the fullness of the breast (2).

These frequent feeds 'put in the order' for the next day and should be welcomed as they will ensure continued milk supply. Bottles of infant formula are not needed in these instances and can affect the mother's milk supply.

Regurgitation is common and may occur in about 40% of infants under 3 months. Most infants with regurgitation or reflux are healthy and grow well. It is only a problem if it is causing the infant great distress and/or insufficient milk is staying down to enable the infant to grow.

By 6-10 months, as the infant spends more time during the day in an upright position, the condition usually settles. Breastfeeding is not the cause and does not make the condition any worse. In fact, it is usually worse with artificial feeds. In those cases when it is a problem management techniques may help. In severe cases medical intervention may be necessary.

Parent handout at:

www.health.qld.gov.au/child&youth/factsheets/default.asp



ABA Booklet: Gastro-oesophageal Reflux and the Breastfed Baby

www.mothersdirect.com.au/prod790.htm

Breastfeeding does not cause colic or reflux. Bottles and dummies may cause confusion in the infant when breastfeeding is established. If these products are to be used they should be introduced after 1 to 2 months and be used infrequently.

Summary

- Some new infants may need to be woken to feed. You can help infants wake up to feed by:
 - placing them skin-to-skin on their mother's chest
 - changing their nappy
 - unwrapping the infant
 - stroking their legs, tummy, lips and cheeks
 - encouraging mums to cuddle them
- Most infants have at least one unsettled period a day often in the afternoon/evening – when they need to feed more often and be cuddled more.
- Regular evening feeds stimulate the production of milk supply for the next day.
- Swapping a breastfeed for a bottle of artificial infant milk can upset the milk supply.
- Many infants regurgitate their milk, and this usually settles by 6-10 months.
- Breastfeeding does not cause colic or reflux.

How often should I breastfeed my baby? (7, 2, 12)

The infant will vary its feeds according to his or her needs and the rate of milk transfer. Allowing the baby unrestricted access to the breast in the early days ensures regular drainage and stimulation of the breast. This in turn enables the mother to establish her milk supply according to the infant's needs, conditions the let down reflex and minimises venous engorgement (7).

During the first few days after birth, babies vary considerably in how often they need to be fed. Some babies will want to be fed every 1 or 2 hours, and then, as the milk comes in, will increase the intervals between feeds. Others appear to be quite sleepy at first, feeding every 4 hours or so, and then reducing time interval between feeds as they become more wakeful (7).

Each breastfeeding dyad will develop a feeding pattern that fits with the mother's storage capacity and the infant's appetite (7).

Adherence to a strict feeding schedule may cause a mother to be anxious and ill at ease.... and her anxiety is likely to inhibit her let down reflex (7).

- Infants need to feed often, especially in the early weeks. They can have around 8-12 in 24 hours, not necessarily evenly spaced.
- The infant will vary the feeds according to his/her needs and the rate of milk transfer. Also, 'demand feeding' allows infants to let mothers know their needs.
- Infants will know when they are hungry so feeding can be done to suit the infant's needs. Infants may become unsettled and want to feed more often from time to time.
- Feeding times vary from feed to feed and infant to infant. As infants get older and are able to suck more efficiently, they often have shorter feeds and may sleep longer between some feeds or be awake and content.
- Breastmilk is easily digested, and most babies want and need to be fed more frequently than 3 to 4 hourly, especially as the gastric emptying time of human milk is approximately 90 minutes (7).

- It is fine to give infants an extra feed or 'top-up' to settle him/her when needed.
- Encourage mums to let an infant feed as long as the infant wants to. Some infants will have a rest at the breast and then start sucking again, let the infant decide when to come off.

If an infant is feeding longer than 30 to 45 minutes, there may be some problems with attachment. Refer to lactation consultant, or Australian Breastfeeding Association Helpline.

For how long should an infant breastfeed? (10)

Breastmilk gives the infant all the nutrients requirements for around the first 6 months of life. After this time babies need solid food in addition to breastmilk. Queensland Health, the National Health and Medical Research Council recommends breastfeeding is continued until the infant is 12 months old, and then for as long as mutually desired.

Check: tips to share with mums

- ✓ Feed when your baby asks for it, as all babies have different feeding requirements.
- ✓ Breastmilk is easily digested, so baby may feed often.
- ✓ As baby grows and sucks more, she/he may have shorter feeds and sleep longer between feeds.

Identification of correct attachment

47% of mothers who have ever breastfed said they experienced problems with breastfeeding: the problem most commonly experienced was attachment, 30.7% (3)

Recommendations from the *Dietary Guidelines for Children and Adolescents in Australia*



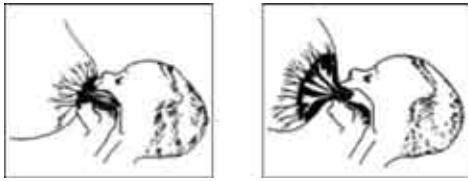
Pay particular attention to the importance of correct attachment and positioning when breastfeeding. Effective, rapid management of any breastfeeding difficulties is important to extend the duration of breastfeeding.

Indicators for correct attachment

- Breastfeeding should not be painful. Most women experience nipple sensitivity and tenderness in the first few days and this is normal, but pain is not.
- If the cheeks are being sucked in or you can hear a 'clicking', infant is not attached properly.
- If mum reports it hurts when infant sucks or you suspect poor attachment, advise mum to put her finger in infant's mouth to break the suction and try again. Just pulling infant off will hurt.
- Swallowing can be seen / heard.
- Infant looks comfortable, relaxed and not tense or frowning.
- After feeding, mum's nipples will appear slightly longer but should not look squashed, flattened, white or ridged.

Figure 4 Attachment

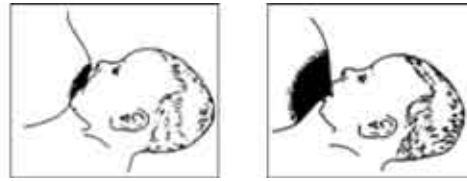
Good and poor attachment



Good attachment

Poor attachment

Attachment – outside appearance



Good attachment

Poor attachment

Source: World Health Organisation, 'Breastfeeding counselling: A training course', 1993, UNICEF, New York. Reproduced by permission.

Ongoing pain is not normal when breastfeeding. It shows something is wrong. Advise mum to talk to a lactation consultant or call the Breastfeeding Helpline.

Looking after mum

47% of mothers who have ever breastfed said they experienced problems with breastfeeding: The second most common problem experienced was 'sore, cracked nipples', 28.0% (3)

Sore and cracked nipples

Prevention

- Educate mother about the importance of correct positioning and attachment
- Educate mother about the likelihood of nipple sensitivity in the first few days

Tender nipples

Some nipple tenderness is normal at the start of feeds in the first 1-2 weeks. After these early days, incorrect attachment is the most common cause of nipple pain. Sore nipples after a period of comfortable feeding indicates the distinct possibility of infection, fungal, bacterial or both.



Tip sheet visit www.health.qld.gov.au/child&youth/factsheets/

Cracked nipples

Seek assistance from a trained health professional experienced in breastfeeding management. Poor attachment is the most common cause of cracked nipples. In some cases, issues such as tongue-tie may be contributing, so anatomical problems need to be ruled out.

Continuing breastfeeding with attachment corrected will resolve problems more quickly than taking the infant off the breast (13). However, if it is too painful to breastfeed, advise mum not to feed on the sore breast (for 12-24 hours) and express during this period. Advise mum to apply her own breastmilk after feeds and let her nipples air dry naturally. Research suggests the application of nipple creams is ineffective in most cases (12). The infant can be breastfed on the less sore side and cup or bottle fed any expressed breastmilk.



Tip sheet visit www.health.qld.gov.au/child&youth/factsheets/

Ongoing pain is not normal when breastfeeding. It shows something is wrong. Advise mum to talk to a lactation consultant or call the Breastfeeding Helpline

Is baby getting enough milk?

Changes in milk supply

A mother may perceive her milk supply as low for the following reasons (7):

- an infant is fussy and does not settle after feeds. The infant may cry more than the parent expects
- the infant has low weight gains, especially over a short period of time
- after initial fullness and engorgement, the breasts settle down and become softer, as the milk supply adjusts to the infant's needs
- the infant requires a lot of comfort sucking
- expressed breastmilk looks different to cow's milk (or could just 'look different')
- the infant keeps turning his or her head and opening mouth, as if wanting to suck. this is the 'rooting reflex', present from birth to 3 or 4 months of age (2)
- the mother may not be able to express much milk. It must be remembered that the ability to express is not a reflection of how much milk the infant takes (2).

Check

- ✓ **All infants, regardless of how they are fed, require careful monitoring of growth and development, with appropriate interventions undertaken when clinically indicated (9).**

If the fully-breastfed infant shows two or more of the signs below the infant is most likely having enough milk.

- At least 5 to 7 heavily-wet disposable nappies (or 6 to 8 very wet cloth nappies) in 24 hours provided no other fluids or solids are being given.
- A very young infant will usually have two or more soft bowel movements a day for several weeks. An older infant may have fewer than this.
- Small quantities of strong, dark urine or formed bowel motions indicate that the infant is in need of more breastmilk.
- Good skin colour and muscle tone.
- The infant is alert and reasonably contented and does not constantly want to feed. She will probably wake for night feeds. A few infants sleep through the night at an early age, while most will wake one or more times during the night for quite some time.
- Some weight gain and growth in length and head circumference. Record this in the infant's Personal Health Record.

Kindly adapted from Australian Breastfeeding Association

www.breastfeeding.asn.au



Child Health Fact sheet available at:

www.health.qld.gov.au/phs/documents/cyhu/28100.pdf

Unless medically indicated, there is no need to supplement breastmilk with other foods or fluids (15).

Studies suggest that partially breastfed and formula fed infants consume 20% more calories than do exclusively breastfed infants. Excessive weight during the first 4-6 months of life is associated with future risk of overweight in babies who are not exclusively breastfed (15).

Prompting questions

Here are some prompting questions and responses you can use when talking with mums (adapted from the *Dietary Guidelines for Children and Adolescents in Australia*)

- ***Is your infant losing or gaining weight and growing in length?***
 - Assure mums that the overall rate of growth is the most important factor and a judgement is best made only after a series of measures.
 - It is often assumed infant's weight gain will be steady; however it is not uncommon for a breastfed infant's gain to be erratic – large one week and small the next. It is important to *look at the overall trend for a month or so, rather than week by week*. This is often reassuring to the mother who has an otherwise healthy infant. (7)
- ***Does your infant have 6 to 8 wet cloth nappies or at least 5 heavily wet disposable nappies per day?***
 - This is typical in a breastfed infant.
- ***Are you concerned with bowel motions? (refer to constipation section)***
 - Breastfed infants are rarely constipated, so a dirty nappy can occur after each feed. Typical breastfed infants' bowel motions are a loose, mustard yellow but can sometimes be green or orange. None of these changes are a problem in a healthy breastfed infant. As the infant gets older, dirty nappies can occur less frequently. It is important to discuss this with families
- ***Is infant's urge to suck being met in another way?***
 - Breasts respond to frequent stimulation by producing more milk. Check if infant is sucking on a dummy or a bottle, as the infant won't feed as much and mum's milk supply will decrease. Complementary bottles should be completely avoided.
- ***Do you have any concerns with the changes in your daily life?***

Changes after having an infant are normal...

 - Infants can't tell the time! In the first months of life infants don't always become hungry at the same time each day.
 - Encourage mums not to feed on a rigid schedule – feed according to need.
 - Encourage mums to create a flexible, evolving routine that meets both her and her infant's needs.
- ***Concerns with breast size or changes?***
 - Breast size has no relationship to milk production.
 - Breasts may soften once mum's body has settled into breastfeeding. This does not necessarily mean a low supply. The milk supply has settled to the infant's needs. Hard breasts are engorged and this is not the normal state, just common in the early days.
- ***Changes in feeding patterns?***
 - The infant will want to feed more often from time to time and this is quite normal.
 - How often the infant needs to feed and how long they take to feed differs a lot from one infant to the next.
 - The more mums feed, the more milk they make.

- **Not able to express much breastmilk?**
 - This is not a reflection of how much milk the infant actually takes.
 - It possibly just means that the let-down reflex is not working when mum expresses.
- **Is mum eating a nutritious diet?**
 - The *Australian Guide to Healthy Eating* provides recommendations on mum's intake. Help mum to follow the serving recommendations and limit extra foods.
- **Is mum drinking plenty of water?**
 - Suggest drinking a glass of water each time she breastfeeds.
- **Is mum getting as much rest as possible?**
 - Encourage mum to look at feeding time as rest time.
 - She may like to lie down to feed for some feeds at home.

Recommendations from the *Dietary Guidelines for Children and Adolescents in Australia*



If a pacifier (dummy) is used, it should not be introduced until after 1 to 2 months and be used infrequently.

Early use of dummies and bottles, especially before the first breastfeed, can interfere with the natural processes of breastfeeding, reducing the infant's sucking capacity and the stimulation of the mother's breasts (2).

Dummy use is associated with lower exclusivity and duration of breastfeeding (16).

Risks associated with the use of a pacifier and the non-nutritive sucking habit it promotes include:

- failure of breastfeeding
- dental deformities
- recurrent acute otitis media
- risk of accidents
- latex allergy
- tooth decay
- oral ulcers
- sleep disorders (17).

Breasts respond to frequent stimulation by producing more milk. If infant is sucking on a dummy or a bottle, the infant won't breastfeed as much and mum's milk supply will decrease. Complementary bottles should be completely avoided (2).

Remember: supply = demand

Monitoring an infant's progress

- Check infant's growth regularly and make sure it is recorded on the growth chart in the Personal Health Record book. A judgement on infant's growth is best made only after a series of measures. It is important to assess weight gain on a four week average (2).
- **A one-off unusual measure is not usually cause for concern if infant is content and healthy. Check the accuracy of measurements, use the same scales all the time and always weigh without clothes (12).**

Normal ranges of infant weight gain

A number of factors influence growth in infancy including (7):

- intrauterine environment
- birth size
- sex
- parental stature
- feeding mode.

Infants lose weight shortly after they are born, up to about 10% (7). They start to regain this weight by day 4-6 and should have regained their birth weight by 2 weeks (2).

- Birth – 3 months: gain 150 to 200 g per week
- Age 3 to 6 months: gain 100 to 150 g per week
- Age 6 to 12 month: gain 70 to 90 g per week

It is often assumed infant's weight gain will be steady; however it is common for a breastfed infant's gain to be erratic – large one week and small the next (7). After the first 2 weeks there should be some weight gain on a regular (but not necessarily weekly) basis usually averaging at least 500 g (7) to 600 g (2) per month. Infants usually double their birth weight by the age of 6 months; triple their birth weight by 1 year of age. (2)

Weight gain is only one aspect to consider. Positive support of the mother and clinical observations of the infant are equally important.

Patterns of weight gain in breastfed infants are different from those of infant-formula-fed ones. They should not be compared. (7)

Growth charts

Growth charts are useful to monitor infant growth, but should not be the sole determinant of the need for the introduction of complementary feeding...; they are not an indication of the readiness for complementary foods (15).

Refer to Growth Chart section.

Check

✓ Feeding patterns

- Feeding on demand.
- Length of feeds variable (if >1/2 hour on first breast, check attachment).

✓ Urine output, after infant is 3 or 4 days old

- Cloth nappies soaked with pale or colourless urine 6 or more times per day.
- Very heavy disposal nappies at least 5 times per day.

✓ Bowel actions

- Breastfed infants are rarely constipated, so a dirty nappy can occur after each feed.
- Typical breastfed infants' bowel motions are loose, mustard yellow but can sometimes be green or orange.
- As your infant gets older, dirty nappies can occur less frequently.

✓ Growth

- The fact that your infant's growth follows the general pattern or curve of the graph is the most important thing.

(adapted from 2,12,14)

If the infant's growth appears to be faltering, check for other indicators of wellbeing, and if there seems to be insufficient milk, efforts should be made to increase the milk supply in the first instance (5).

Guidelines for practitioners:

Approximately 3 in 5 mothers (60%) surveyed in the Infant Nutrition Survey who had ever breastfed their child sought help or support with breastfeeding after leaving hospital. These mothers usually went to at least two different sources of support and advice. The main source was family and friends, followed by the local community or child health centre (3)

Monitoring progress: in the first month of life

Adapted from *Global Strategy for Infant and Young Child Feeding*, WHO (14)

- 1 Mothers should be visited or otherwise communicated within 48 hours of discharge to check exclusive breastfeeding is progressing satisfactorily. Most problems identified at this stage can be easily solved. Difficult problems should be referred to a lactation consultant. The longer the first visit is delayed the more difficult it is to solve any problems that might have arisen.
- 2 During this visit observe a breastfeed to:
 - a. ensure correct position and attachment
 - b. confirm good milk transfer
 - c. reassure mum.. knowledge and practice of breastfeeding should be reinforced.
- 3 Breastfeeding problems such as sore nipples and breast engorgement do not require the discontinuation of breastfeeding and short-term interruption is rarely needed (see www.health.qld.gov.au/child&youth/factsheets/default.asp : common breastfeeding concerns, or refer mums to their Child Health Information booklet).
- 4 Mothers perceiving infant crying and frequent feeding as breastmilk insufficiency need explanation, reassurance and support. These episodes are normal; they are a regulating mechanism of milk removal and milk synthesis to meet the evolving needs of the infant.
- 5 If a child fails to follow a growth curve check the effectiveness of breastfeeding and correct feeding technique if necessary. Weight gain should always be calculated from the lowest post-partum weight, not from birth weight.
- 6 If growth is above 95th centile, or below 5th centile, or crosses these centiles, (2) or should growth faltering persist further investigation is required. Remember, though, that 5% of normal infants will be above the 95th percentile and another 5% will be below the 5th.



Monitoring progress: from 1 to 6 months

Adapted from *Global Strategy for Infant and Young Child Feeding*, WHO (14)

- 1 If exclusive breastfeeding is well established, there is no need to supplement breastmilk with other food or fluids
- 2 Mothers should be advised to check growth, by arranging infant checks monthly.
- 3 Mothers should be advised to continue breastfeeding on demand
- 4 At around 6 months, most infants will show an interest in complementary foods as well as breastfeeds. Provided infants are in good health parents should be advised to observe their infant's feeding behaviour and respond appropriately (ie never force infants to eat).
- 5 Growth charts are useful to monitor infant growth, but should not be the sole determinant of the need for the introduction of complementary feeding.
- 6 To facilitate mothers in the paid workforce, a breastfeeding supportive workplace as well as family and/or social support is helpful. Access to ongoing expert support, and information on expression, safe handling and storage of breastmilk is also required
- 7 Exclusively breastfeeding mothers who use the Lactation Amenorrhoea Method (LAM) of birth control have a high rate of protection from unwanted pregnancy until her infant is 6 months old. After this, other contraceptive methods are required. Progestin-only contraceptives are highly effective and usually have no inhibitory effect on lactation, however, combination contraceptives appear to be associated with a decline in milk production (see section on medications for further information). Occasionally, a mother might find progestin-only contraceptives affect lactation, especially if begun very early following the birth.

3.4 Why not to introduce cow's milk before 12 months (2)

Cow's milk as a complete feed is not suitable for infants under 12 months of age for a number of reasons.

Composition

Breastmilk is a living tissue that includes many species-specific compounds (2). Because cow's milk is intended for calves, which have a much higher growth velocity than infants, the content of nutrients essential for growth, like protein and some minerals are much higher (typically 2-3 times) than in human milk (18) and too high for human infants.

- The composition of cow's milk is not ideal for infants. Compared with breastmilk and infant formula, cow's milk contains higher levels of protein, sodium, potassium, phosphorous and calcium and lower levels of iron, vitamin C and linoleic acid, adding to the difficulty of providing a balanced diet for older infants (2,18,19).
- The higher levels of protein, sodium and potassium in cow's milk have been associated with an increase in renal solute load (2,18) that might cause dehydration and hypernatremia during illness (18).
- The high phosphorous and calcium content of cow's milk may decrease the bioavailability of iron from other dietary sources such as infant cereals.
- The fat in cow's milk is much harder for infants to digest due to the way fats are hydrolysed. Long chain polyunsaturates are deficient in cow's milk. These are essential for an infant's nervous system development and visual function (20).

Iron

- Cow's milk is a poor source of iron and the iron it does contain is poorly absorbed: 50% of iron from breastmilk is absorbed compared with 10% in cow's milk.
- Introducing cow's milk before 12 months of age predisposes an infant to iron deficiency at an age when their iron stores become depleted.
- Cow's milk that has not been heat treated can cause gastro-intestinal bleeding (26), exacerbating the problem of iron deficiency (2).

Health consequences

- Early introduction of cow's milk may be associated iron deficiency.
- Avoiding cow's milk during the first 12 months of the infant's life will help protect against the development of cow's milk allergy (2).
- Early introduction of cow's milk has been linked to an increased risk of developing asthma or type 1 diabetes (5).

'Milkaholics'

- A young child consuming either one litre of cow's milk or an equivalent formula milk product is meeting as much as two thirds of his or her energy requirements from this source, leaving very little appetite for other more varied healthy foods (2).

Breastfeeding and allergies

- Exclusive breastfeeding at least 6 months, and preferably longer is recommended.
- If breastfeeding is discontinued for any reason, seek professional advice: hydrolysed protein formula may be recommended.
- Soy milk and goat's milk formulas do not reduce allergies, and should not be used as an alternative to cow's milk formulas.
- Maternal dietary restrictions during breastfeeding are not recommended for prevention (21)
- If an infant is breastfeeding and showing signs of allergies, refer to local general practitioner or paediatrician.

3.5 Nutrition and breastfeeding

Healthy eating is important for all mothers. It is important for the mother to eat adequately for her own nutrition needs as well as providing for the nutritional needs of her infant. With rigorous hours and constant demands that need immediate attention, breastfeeding is a full-time job. And as with any role that is physically and emotionally challenging, mothers need to regularly refuel to keep their energy levels high.

Unless extremely malnourished, virtually all mothers can produce adequate amounts of breastmilk. When the breastfeeding mother is undernourished, it is safer, easier, and less expensive to give her more food than to expose the infant to the risks associated with breastmilk substitutes (22).

Lactation places high demands on maternal stores of energy and protein. These stores need to be established, conserved, and replenished (22).

Breastfeeding can affect the mother's nutritional status, depending on the mother's diet. The energy, protein, and other nutrients in breastmilk come from the mother's diet or from her own body stores. When women do not get enough energy and nutrients in their diets, repeated, closely-spaced cycles of pregnancy and lactation can reduce their energy and nutrient reserves, a process known as maternal depletion (22).

Breastfeeding mothers have an increased requirement for most nutrients compared to mothers who do not breastfeed, as many vitamins and minerals in a breastfeeding mother's diet are transferred into the breastmilk.

A breastfeeding mother should eat regular nutritious meals and snacks to meet the extra energy (kilojoules) needed for making breastmilk and feeding. Consuming a variety of foods each day is important in meeting both the mother's and infant's nutritional needs.

Utilise the *Australian Guide to Healthy Eating* as a guide for mother's intake.

Energy requirements

The energy needs of a breastfeeding mother are increased because of milk production. In fact, the energy requirements for breastfeeding mothers are, on average, 2000 kJ (445 kCal) per day more than that of a usual adult woman's daily energy needs. These energy requirements are based on full breastfeeding in the first 6 months and partial breastfeeding after that time.

While it is normal (and expected) that mothers put on weight while pregnant, it is not recommended that mothers follow a strict weight loss diet after childbirth. Breastfeeding naturally allows for gradual weight loss. If weight is gained after birth, it is most likely mum is eating too much food, or choosing foods high in energy (kilojoules).

Because there is individual variation in milk production, levels of physical activity and weight loss during lactation, it is difficult to make an exclusive recommendation on energy needs during breastfeeding.

For individualised advice, refer to a dietitian.

Physical activity

Regular, moderate physical activity is good for health. It appears most breastfeeding women can participate in exercise without affecting their lactation.

It is best to combine exercise with balanced eating and adequate nutrition. It is also important to drink plenty of fluids when breastfeeding and exercising.

For individual nutrient requirements such as those described below, the *Nutrient Reference Values for Australia and New Zealand Including Recommended Dietary Intakes* provides an average nutrient intake requirement for individuals and a value that would meet the needs of most individuals in the population. Because it is difficult to assess an individual's exact requirement for a particular nutrient, you might like to aim for the upper figure to maximise the certainty that a sufficient amount of the nutrient is obtained from food.

For health professionals



For more information go to www.nhmrc.gov.au/publications/_files/n35.pdf

The information in this next section is kindly adapted from the Healthy Active website. It is based on the *Nutrient Reference Values for Australia and New Zealand Including Recommended Dietary Intakes*, the *Dietary Guidelines for Children and Adolescents in Australia*, and *The Australian Guide to Healthy Eating*. These recommendations are for healthy women with standardised weight, height and estimated energy requirements and may not meet the specific nutritional requirements of individuals.



Specific advice for individual needs should be sought from a qualified dietitian.

Parent handouts can be found at www.qheps.health.qld.gov.au/ahwac/content/home_nemo.htm

Healthy Eating Guidelines for Breastfeeding Women

Table 10 *The Australian Guide to Healthy Eating* recommendations for breastfeeding women

Food group	Number of serves	1 serve
Bread, cereal, rice, pasta, noodles Choose wholegrain/ wholemeal varieties	5-7	2 slices bread 1 medium bread roll 1 cup cooked rice, pasta 1 cup breakfast cereal, porridge ½ cup muesli
Fruit	5	1 piece medium sized fruit 2 pieces smaller fruit 20 grapes or cherries ½ cup juice 1 cup diced/canned fruit 1½ tbsp sultanas
Vegetables, legumes	7	1 medium potato ½ medium sweet potato 1 cup salad vegies ½ cup cooked vegetables ½ cup lentils, chick peas, canned beans
Meat, fish, poultry, eggs, nuts and legumes 2 fish serves per week	2	65-100 g cooked meat/chicken 80-120 g cooked fish 2 small eggs ⅓ cup cooked dried beans, lentils, chick peas, split peas or baked beans ⅓ cup nuts
Milk, yoghurt, cheese Choose fat reduced varieties	2	1 cup milk 40 g (2 slices) cheese 200 g yoghurt 1 cup custard

Note: Plenty of fats and oils are obtained from the amount used with cereal foods and from meat, eggs, cheese, peanut butter, margarine, etc so fats and oils aren't included separately.

For more information check out the *Australian Guide to Healthy Eating* at:

www.health.gov.au/internet/wcms/publishing.nsf/Content/health-publth-strateg-food-recommend.htm



The nutrients of particular concern during breastfeeding are:

- ✓ protein
- ✓ folate
- ✓ zinc
- ✓ vitamin A
- ✓ vitamin B6
- ✓ iodine.

Protein

A breastfeeding mother needs additional dietary protein to build the protein in her breastmilk. Protein is vital for the growth, maintenance and repair of cells. The RDI for protein during breastfeeding is 67 g/day. Protein is found in a wide range of foods such as meat (including fish and poultry), eggs, dairy, legumes (such as beans, pulses and soy products) and nuts. Smaller amounts of protein are found in grain-based foods such as bread and pasta.

Folate

Folate is a B vitamin, needed for healthy growth and development. The RDI for breastfeeding mothers is 500 µg/day. Folate can be found in leafy vegetables, wholegrains, beans, peas, peanuts, avocado and yeast extract (eg *Promite*, *Vegemite*, *Marmite* etc).

Zinc

Zinc is a component of various enzymes that help maintain structural integrity of proteins and help regulate gene expression. Breastfeeding mothers require 12 mg/day. Zinc can be found in lean meat, wholegrain cereals, milk, seafood, legumes and nuts.

Vitamin A

Vitamin A is vital for normal growth and helps provide resistance to infections. Breastfeeding mothers require 1,100 µg/day. Vitamin A can be found in milk, cheese, eggs, fatty fish, yellow-orange vegetables and fruits such as carrots, pumpkin, mango, apricots, and other (dark-green) vegetables such as spinach and broccoli.

Vitamin B6

Vitamin B6 is important for the metabolism of protein and the formation of red blood cells. Breastfeeding mothers require 2 mg/day. Vitamin B6 can be found in muscle and organ meat, poultry, fish, wholegrains, brussel sprouts, green peas and beans.

Iodine

Iodine is a vital nutrient for the thyroid gland to make thyroid hormones, and these are essential for normal development of the brain and nervous system. Iodine content in breastmilk reflects the mother's intake, so if this is low, the amount transferred to the baby will also be low. Until an infant can eat weaning foods containing iodine, the infant relies entirely on supplies of this nutrient from his mother, across the placenta and then through breastmilk (23). The RDI for iodine during breastfeeding is 270 µg/day.

Water (fluids)

Breastfeeding mothers should drink an additional 700 ml/day (at least) above non-lactating requirements to replace the fluid lost through breastfeeding. This equals to a total of 9 cups daily, and can be in the form of water, milk, soup, juice and other drinks (avoid alcohol and limit caffeine-containing fluids, such as coffee, tea and cola). However, pure water should be everyone's main drink.

A practical idea you can advise mum is to have a drink at the time of each breastfeed, as well as drinking regularly throughout other times of the day.

DiETING during breastfeeding

Breastfeeding helps mothers to shape up. Weight loss diets are not recommended during breastfeeding. Advise mothers on a few of these strategies to ensure they are maximising their nutrient intake, whilst decreasing extras.

- Don't skip meals.
- Limit foods high in fat and sugar such as lollies, chocolate, soft drinks, cakes, sweet biscuits, chips and fatty takeaways.
- Use healthy cooking methods such as steam, boil, microwave, and grill or stir fry.
- Trim fat from meats and avoid chicken skin.
- Do some gentle exercise such as taking your baby for a walk - consult a physiotherapist.

Parent handout

qheps.health.qld.gov.au/ahwac/content/home_nemo.htm



Excess weight loss and breastfeeding

Encourage the mother to continue breastfeeding. Help them to find ways to eat more. Some suggestions:

- don't skip meals
- have three main meals and three between meal snacks
- keep easy to prepare nutritious snacks on hand eg crackers and cheese, fresh fruit, yoghurt, nuts, seeds, dried fruit, canned beans, flavoured milk, fruit smoothies, breakfast cereals and milk
- prepare a packed lunch or variety of snacks to have in a container beside you when baby feeds
- prepare and freeze meals in advance when possible (or ask your friends/family to help).

When the breastfeeding mother is undernourished, it is safer, easier and less expensive to give her more food than to expose an infant under 6 months of age to the risks associated with feeding infant formula or other foods (22)

Parent handout

qheps.health.qld.gov.au/ahwac/content/home_nemo.htm



Foods that may adversely affect a breastfed infant

Some foods that breastfeeding mothers eat or drink can affect the infant:

- alcohol
- caffeine
- any foods that are not part of her normal diet, eg for some, spicy foods



Recommendations from the *Dietary Guidelines for Children and Adolescents in Australia*

Encourage breastfeeding mothers not to drink alcohol.

Alcohol

The level of alcohol in breastmilk is virtually the same as a mother's blood alcohol level. Even if one standard drink is ingested, a small quantity of ethanol passes into the breastmilk and is subsequently taken by the suckling infant if she feeds the infant while intoxicated (2). As the liver removes the alcohol from the blood, the alcohol also leaves the milk.

It is advised not to drink any alcohol when breastfeeding an infant, especially in the first 3 months because it is not clear what negative effects alcohol has on the infant's rapidly-developing brain.

Additionally, mothers also report a lower tolerance to alcohol whilst breastfeeding (24). An intoxicated mother should not breastfeed. High intakes of alcohol may affect the mother's ability to look after her infant and increases her risk of developing depression. Large quantities of alcohol have also been seen to displace good nutrition.

If mothers do drink, advise them to limit the amount and take it just after feeding. This will allow a lower alcohol level in the breastmilk by the time of the next feed (25).

Caffeine

Some breastfeeding mothers report that their infant is unsettled, irritable, or even constipated if they drink large volumes of coffee, strong tea, high energy drinks or cola. However, there appears to be individual variation in how much caffeine is found in breastmilk after having a high caffeine drink.

Peak levels of caffeine are found in breastmilk approximately 60 minutes after ingestion. Newborns metabolise caffeine very slowly, the half life of caffeine being 80 hours in a newborn compared to 2.6 hours in a 6 month old (24).

Caffeine can also affect the nutrient make up of breastmilk. The iron levels in the breastmilk of a woman who drinks more than 3 cups of coffee a day during pregnancy and the early phases of breastfeeding, are one-third less than that of a mother who does not drink coffee.

During breastfeeding, caffeine consumption should be limited to 2 to 4 cups of coffee, tea or cola per day (25).

Just how much caffeine is in that drink or food?

■ Coffee

- 80 to 350 mg caffeine per cup, depending on the type of beans and how it is prepared

■ Instant coffee

- 60 to 100 mg caffeine per cup

■ Decaffeinated coffee

- 2 to 4 mg caffeine per cup

■ Tea

- 8 to 90 mg caffeine per cup

■ Energy drinks and coffee flavoured milks

- up to 130 mg caffeine per 250ml serve (also high in sugar)

■ Cola drinks

- 35 mg caffeine per 250ml serve (also high in sugar)

■ Cocoa and chocolate drink

- 10 to 70 mg caffeine per cup

■ Chocolate bars

- 20 to 60 mg caffeine per 200 g bar (also high in sugar and fat).

Additionally, the mother should be warned that cigarette smoking compounds the effects of caffeine in breastfed infants (24).

For more information about the caffeine content in food and drink:

www.foodstandards.gov.au/whatsinfood/caffeine/

www.breastfeeding.asn.au/bfinfo/drugs.html



Food sensitivities

Some breastfed infants may get upset or unsettled if their mothers eat a lot of rich or spicy foods, or particular fruits or vegetables. If a breastfeeding mum is suspicious a food being consumed is affecting the infant, advise her to stop eating it for a few days. If the infant settles down, advise mum to introduce the food again to see how it affects the infant. It may be helpful to avoid that food if the infant becomes unsettled again. It is advisable to speak with a dietitian or nutritionist for further advice if avoidance of several different foods seems to be necessary.

Guidelines for pregnant and breastfeeding vegetarians and vegans can also be found at

www.qheps.health.qld.gov.au/ahwac/content/home_nemo.htm



Sample meal plan for a breastfeeding woman

Breakfast

Wholegrain toast, thin scrape of margarine and vegemite/jam/honey
Tub of low fat yoghurt (200g) with piece of fruit

OR

Bowl of wholegrain cereal and 1 cup low fat milk and 1 cup canned fruit in natural juice
A piece of fruit or a small glass of orange juice

Morning tea

Carrot and celery sticks with low fat dip / salsa

Lunch

2-4 slices of bread/bread roll/lavash bread
100g lean ham/turkey with mustard/cranberry sauce / 2 small eggs
Salad eg. lettuce, tomato, beetroot, cucumber

A piece of fruit

OR

Tin of tuna or salmon stirred through 1 cup cooked pasta
Side salad

A piece of fruit

OR

Small tin baked beans on 2 slices toast and a banana/apple/orange/2 apricots or plums

Afternoon tea

Banana smoothie - made with 1 cup of milk, honey, banana

Handful of sultanas

Dinner

100g lean meat/chicken/fish/lamb/pork with 2 cups of a variety of vegetables
eg. grilled steak or fish with mashed potato, peas, carrots, broccoli;
curried meat with sweet potato, eggplant, carrots, chickpeas;
stir fried chicken with capsicum, ginger, garlic, bean sprouts, snowpeas, carrots

Pasta sauce with tinned tomato, mushrooms, capsicum, zucchini and pasta or rice

Supper

2 pieces of raisin toast with banana and honey

A glass of water



Parent handout: For menu ideas visit

www.eatwellbeactive.qld.gov.au/eatwellbeactive/eatwelltips/menu_plan.asp

Energy expenditure

Table 11 Energy expenditure variations during breastfeeding

Lifestyle / exercise level	Energy requirement (kJ/day)
At rest, exclusively sedentary or lying (eg chair-bound or bed-bound)	8,800 kJ/day
Exclusively sedentary activity/seated work with little or no strenuous leisure activity eg office employee	10,000 - 10,550 kJ/day
Sedentary activity/seated work with some requirement for occasional walking or standing, but no strenuous leisure activity	11,100 - 11,700 kJ/day
A lifestyle that involves predominantly standing or walking eg housewives, waiters, tradespersons	12,300 - 12,850 kJ/day
Heavy physical work or a highly active leisure	13,400 - 14,500+ kJ/day

Adapted from www.healthysactive.gov.au (10)

3.6 Breastfeeding and non nutritive substances

Recommendations from the *Dietary Guidelines for Children and Adolescents in Australia*.

Encourage mothers who smoke to stop or reduce smoking and to avoid exposing their infant to tobacco smoke. Even if a mother persists with smoking, breastfeeding remains the best choice.

Nicotine

Adapted from the *Dietary Guidelines for Children and Adolescents in Australia*, 2003 (2)

It is still better for the infant to be breastfed even if the mother continues to smoke than to be formula-fed and have a smoking mother. Breastfeeding ameliorates some of the harm of smoking.

Nicotine is quickly transferred into breastmilk and has been linked to reduced milk production, rapid heart rate and restlessness. Infants who grow up in a smoker's environment are more likely to suffer from respiratory and gastrointestinal illnesses and tend to have depressed immune systems

Mothers should be encouraged to breastfeed exclusively for the first 6 months to maximise the infant's protection against respiratory disease, and continue to breastfeed as long as possible. Additionally, mothers who smoke should be encouraged to quit. Lactation may be an ideal time to do this since hormones and other substances released in the mother during lactation may help to decrease her withdrawal symptoms (24).

The following can help to reduce harm to the infant.

- Mothers should completely avoid smoking in the 60 to 90 minutes (2,24) before feeding.
- Mothers should completely avoid smoking during feeding.
- Mothers should smoke only after a feed has been given.
- Others should smoke outside the house or car and should not take infants into smoky environments.
- No one should smoke in the same room as the infant because of the dangers of passive smoking.
- Mothers who use nicotine gum, which produces higher nicotine levels than patches, should not breastfeed for 2-3 hours after using the gum.

Cigarette smoking can alter the taste of breastmilk (24).

Smoking can decrease a mother's ability to produce breastmilk and thus affect the growth of the infant (25).

See medications for more information on nicotine patches or gum.

Prescription and/or over the counter medications

Adapted from Child Health fact sheets (12)

Most prescription drugs are compatible with breastfeeding, but each case should be specifically assessed.

Human breastmilk is undoubtedly the most important food an infant can have. It is so important that breastfeeding should only be discontinued if there is strong evidence that a drug taken by the mother will harm the infant.

Choose the right medication

Mothers who are breastfeeding should not be given a medication unless there is convincing evidence that it will really help the mother's condition at the time. A worsening illness can have a greater affect on a mother's breastfeeding ability than some medical treatments. If there is a range of suitable drugs available, your doctor or pharmacist should choose the drug that is the absolute safest, based on evidence.

Exposure in the womb

Infants are exposed to more medication in the womb than through breastfeeding.

If mum has been taking medications during pregnancy – for example, drugs to control epilepsy – the infant will already have been exposed to more drugs in the womb than through breastmilk.

Drugs taken by a breastfeeding mother may pass into the milk through the mother's bloodstream, usually in very small amounts. The extent to which this happens depends on a number of factors, including the nature of the drug concerned, the fat content of the breastmilk and the drug level in the mother's body. Generally, the majority of medications do not need to be avoided when breastfeeding. When breastfeeding mums do need medication, however, advise them to feed their infant just before the next dose is due to reduce the infant's exposure to the drug.

Some drugs may be contraindicated during breastfeeding, but this is a complex subject. Advice from the general practitioner or pharmacist should be sought (2).

For more information contact the Royal Women's Hospital Obstetric Drug Information Service on (07) 3253 7300.



Use this fact sheet as a ready reference to work out which common drugs are safe to take. www.health.qld.gov.au/child&youth/factsheets/

Also see World Health Organisation 'Breastfeeding and Maternal Medication' (2002)

Drugs to relieve headache, aches, pain or fever

Paracetamol, when taken as directed, is quite safe to take while breastfeeding. Common brand names for paracetamol include *Panadol*, *Dymadon* and *Panamax*. Aspirin (including *Disprin*, *Aspro* and *Solprin*) is safe to take for pain occasionally, but not regularly. More severe pain can be treated with stronger products, such as paracetamol-codeine combinations. These include *Panadeine*, *Dymadon Co* and *Codalgin*. For period or muscular pain, take the above drugs. As well, anti-inflammatory drugs such as ibuprofen (*Nurofen*, *Actoprofen*) and naproxen (*Naprogenic*, *Naprosyn*) are very effective, but should be taken in low doses for short periods of time only. Creams and sprays available for muscle aches and pains are safe to use. *Ponstan* and *Indocid* are best avoided by breastfeeding mothers.

Cold, flu and asthma drugs

Breastfeeding mothers should try to avoid cold and flu tablets containing pseudoephedrine, such as *Sudafed* and *Demazin*. Pseudoephedrine can sometimes cause breastfeeding infants to become irritable and restless. Pseudoephedrine can also cause a significant reduction in milk volume.

Try nasal spray decongestants instead, like *Sinex* and *Otrivin*. Lozenges and gargles are safe for sore throats, though it is best to avoid gargles containing povidone-iodine, such as found in *Viraban*, *Betadine*, *Minidine* and *Viodine*.

Most cough mixtures are safe, but avoid products containing pseudoephedrine.

Asthma treatment should be the same for breastfeeding women as for those who are not breastfeeding, and is quite safe.

Hayfever and allergies

There are some antihistamines on the market that do not cause sleepiness, and of those, loratadine (*Claratyne*) is the safest for breastfeeding mothers to use. Terfenadine (*Teldane*) and astemizole (*Hismanal*) have occasionally been known to cause restlessness and irritability in breastfed infants, so they are best avoided. Most of the older antihistamines may cause drowsiness as a side effect. However they are safe to use while breastfeeding and include dexchlorpheniramine (*Polaramine*) and pheniramine (*Avil*).

Nasal sprays such as budesonide (*Rhinocort*) and beclomethasone (*Aldecin* and *Beconase*) are quite safe and may be prescribed for breastfeeding mothers by their doctor.

Contraception

If breastfeeding mothers want to take the contraceptive pill while breastfeeding, the mini-pill only should be prescribed. Common brand names include *Microlut*, *Microval* and *Micronor*.

Other pills – like *Nordette*, *Microgynon*, *Triphasil* and *Tranquilar* – should not be taken. These contain a hormone, oestrogen, which can decrease milk supply.

The morning-after pill (*Postinor-2*) is quite safe for emergency contraception.

Depot Provera and *Depot Ralovera* (both three-monthly injectable contraceptives) are excreted into breastmilk in very low amounts, and are also safe for use. They should be given about six weeks after the birth.

Note that occasionally, progesterone-only contraceptives can also affect milk supply or cause infant fussiness. When other causes have been ruled out, this should be considered.

Constipation

The safest laxatives to use are fibre-based products, such as *Metamucil* and *Fybogel*, followed by docusate (*Coloxyl*). Large doses of senna as found in *Senokot*, *Coloxyl with Senna*, and *Nulax* or bisacodyl (*Durolax*) can cause diarrhoea in the breastfed infant.

Vitamins, minerals and herbal preparations

Some vitamin and mineral supplements are safe to use during the breastfeeding period.

In fact, B-group vitamins may be particularly beneficial to mothers lacking energy. And evening primrose oil is safe to take while breastfeeding. Be aware, though, that natural drugs like herbal preparations may be natural, but they may not necessarily be harmless. Many herbal drugs contain chemical substances that may be dangerous to the infant and numerous poisonings have been reported in the past.

So, if breastfeeding mothers want to take herbal supplements, advice from the general practitioner or pharmacist should be sought. At all times, do not use more than the recommended standard dose of herbal products, and use single ingredient products rather than combination products of unknown herbs.

Antidepressants

Antidepressant drugs are of many different forms and have different pharmacological effects in the body. Moreover, they can exert different effects in different women.

The extent of breastmilk passage of antidepressant drugs also differs with drug type and mother.

Antidepressants are excreted in small amounts in the breastmilk and it is currently unknown what long term effects this might have on the infant. Therefore it is recommended that antidepressants be used with caution during breastfeeding. There should be discussion with both medical practitioner and pharmacist before taking these medications.

The ABA booklet *Postnatal Depression and Breastfeeding* contains valuable information for parents and health professionals about depression, anti-depressants and breastfeeding.

Smoking

If breastfeeding mothers are smoking, encourage them to stop or decrease smoking as much as possible. Nicotine patches or gum used to quit smoking is safer than continued smoking, as long as you do not smoke as well.

Mothers who use nicotine gum, which produced higher nicotine levels than patches, should not breastfeed for 2-3 hours after using the gum.

Illicit drugs



Recommendations from the *Dietary Guidelines for Children and Adolescents in Australia*

Encourage mothers to... avoid illicit drugs.

Illegal drugs like heroin or marijuana, or prescription drugs like morphine, methadone or oxycodone – can lead to the infant being excessively drowsy and feeding poorly (12).

Prolonged exposure to these drugs can also result in both the mother and the infant becoming dependent on the drugs (12).

Marijuana

The use of marijuana or exposing infants to side stream smoke during both pregnancy and lactation is discouraged. It is known that the active component of marijuana is fat soluble and shows an eightfold accumulation in breastmilk compared to plasma (26).

Infants exposed to marijuana through breastmilk often exhibit signs of sedation, weakness and poor feeding patterns. Marijuana use may also decrease milk production and the long term effects on an infant's rapidly developing brain are unknown (26). If possible it is best to avoid using marijuana whilst breastfeeding (24, 27).

Heroin, methadone

The active components of methadone and heroin, like marijuana, are known to be fat soluble and concentrate in the breastmilk. Heroin use can result in low birth weight infants, who can experience breathing difficulties and infections (27). Ideally it is best to restrict such substances during pregnancy and when breastfeeding. However if the mother does use heroin, it is not advisable for her to stop using heroin suddenly. This will result in the mother and the infant experiencing withdrawal. It is recommended that the mother goes on a methadone program as this will help control the mother's general health. Women who are on a methadone program experience fewer complications during childbirth and pregnancy than those who use heroin. Heroin and methadone cross through the breastmilk however the risk of complications for the infant is reduced with methadone use (27). It is not recommended to breastfeed whilst using heroin.

Cocaine

Cocaine is highly lipid soluble and readily crosses biological membranes and should not be used during pregnancy or breastfeeding (28). Cocaine may cause premature labour and stillbirth, reduce the blood supply to the infant during pregnancy and increase the heart rate of the mother and infant (27). It is recommended that mothers stop using cocaine early in the pregnancy. Cocaine increases irritability and can cause cocaine intoxication. It is therefore not recommended while breastfeeding (27).

Amphetamines

Amphetamines are members of a class of drugs known as stimulants that includes caffeine, cocaine, and nicotine. Stimulants have the common property of increasing activity in the central nervous system (29).

Amphetamine accumulates in breastmilk, causing irritability and poor sleep patterns. Therefore, amphetamine should not be used during pregnancy and lactation (29).

Parent handout found at

www.rwh.org.au/emplibrary/wads/PregAmphet.pdf

www.rwh.org.au/wads/health-info.cfm?doc_id=3844



3.7 Breastfeeding in specific situations



Adapted from *Dietary Guidelines for Children and Adolescents in Australia*, 2003 (2)

Recommendations from the *Dietary Guidelines for Children and Adolescents in Australia*

At present, breastfeeding is contraindicated when a mother is known to be HIV positive (research into the possible benefits of antiretroviral drugs is continuing).

There are very few situations for which breastfeeding is contraindicated. Even mothers who have serious conditions are able to breastfeed successfully; among these conditions are:

- type 1 diabetes
- type 2 diabetes
- gestational diabetes
- multiple sclerosis
- systemic lupus erythematosus
- hypothyroidism
- hypertension
- crohn's disease and ulcerative colitis
- phenylketonuria
- cystic fibrosis
- fibrocystic disease.

Absolute contraindications for breastfeeding

Currently the NHMRC *Dietary Guidelines for Children and Adolescents in Australia* list the following contraindications for breastfeeding (2).

- Active tuberculosis that has not yet been treated. Any contact with the infant, including breastfeeding, is not permitted until the mother has finished two weeks of treatment. The infant is usually prescribed prophylactic treatment. Lactation is initiated and maintained by expressing breastmilk until contact is approved.
- Brucellosis (undulant fever) which, like tuberculosis, can pass from the mother's blood to the breastmilk.
- Recently acquired maternal syphilis with an unaffected infant. Mother– infant contact and breastfeeding can begin after 24 hours of therapy, provided there are no lesions around the breasts or nipples. If there are lesions around the breasts or nipples, feeding may begin or resume once treatment is complete and the lesions are healed.
- Breast cancer detected during pregnancy.

-
- HIV infection. In Australia, women who are HIV positive are advised not to breastfeed. Transmission of the human immunodeficiency virus through breastfeeding is well documented. The US Centers for Disease Control and Prevention advise women with HIV infection not to breastfeed (2). The NHMRC and the American Academy of Pediatrics have issued statements in support of this position. Other countries may have different policies. For developing countries, the WHO and other UN agencies currently recommend exclusive breastfeeding by HIV-positive mothers until 6 months of age and then transfer to other methods of breastfeeding. Use of retroviral drugs assists in reducing mother-to-infant transmission. It is estimated that the rate of mother-to-infant transmission during breastfeeding is 10–20%, but all the studies are fraught with problems of definition of exclusive breastfeeding (2).
 - Rare metabolic disorders of infants such as galactosaemia and maple syrup urine disease, which severely limit or render impossible the infant's use of certain milk components. In cases of phenylketonuria, partial breastfeeding may be possible, provided there is careful monitoring by a paediatrician and a dietitian with expertise in metabolic disease.
 - Hepatitis B infection, although breastfeeding may begin or resume once the infant has been immunised.

Relative contraindications to breastfeeding

Currently the NHMRC *Dietary Guidelines for Children and Adolescents in Australia* list the following conditions that may need to be considered on their merits before use of infant formula is advised.

- Maternal medications. Most drugs are excreted into the breastmilk but usually in concentrations less than 1–2% of the maternal dose, which rarely poses a danger to the infant. Some drugs may be contraindicated during breastfeeding, but this is a complex subject and advice given may depend on factors such as the drug dose, the duration of treatment, and the nature of the illness. The advice of the general practitioner who prescribed the medication or the pharmacist at the nearest women's or children's hospital should be sought if there is any doubt.
- Hepatitis C. There is as yet no evidence that hepatitis C is transmitted through breastmilk.
- Specific illnesses in the infant. Breastfeeding can continue in almost all circumstances.
- Maternal illness and malignancy, depending on the mother's health and the medications used.
- Maternal psychiatric illness if there is definite danger to the infant. A psychiatrist's advice should be sought.

3.8 Expressing and storing breastmilk



Parent handout at
www.health.qld.gov.au/child&youth/factsheets/default.asp

Check

Storage tips (2,13)

Very little special handling of a mother's milk is necessary. Since it is already sterile when it comes from the breast, expressed breastmilk is safer to use than prepared infant formula. It can be stored in glass or plastic containers, including sealable plastic bags. Freshly expressed milk can be chilled in the refrigerator and added to frozen milk in the freezer.

The following is a simple guide for mothers storing expressed breastmilk at home.

- Wash hands thoroughly with soap and water.
- Refrigerate or freeze milk after expressing.
- Use fresh milk whenever possible.
- Freeze milk that will not be used within two days.
- Use the oldest milk first; date the container at the time of collection.

Refrigerator

Breastmilk is best used when fresh. A mother should try to provide fresh breastmilk daily for her infant; if this is not possible, the milk can be stored in a refrigerator or freezer in clean plastic containers.

Breastmilk refrigerated at 4°C for 48 hours suffers little loss of nutrients, or immunological properties and the bacterial count is actually reduced. Breastmilk can be stored up to 5 days in the fridge.

Chill freshly expressed breastmilk before adding to cold or frozen milk.

Freezer

Never refreeze or reheat breastmilk.

Do not thaw or warm breastmilk in the microwave.

Thaw breastmilk by either placing it in cool or warm water (2).

When freezing breastmilk, leave some space at the top of container (it expands as it freezes).

Freeze in small amounts to avoid unnecessary wastage, eg. 50ml.

Fat in breastmilk will separate and rise to the top – gently swirl to remix the separated fat.

Transport

Transport breastmilk in a cooler with an icebrick and place it in the refrigerator (or the freezer if it is frozen) immediately when you arrive.

Other hints to share with mums

- ✓ Label with date and time before freezing.
- ✓ When needed, use oldest milk first.
- ✓ Leftover expressed milk from feeding should be discarded.
- ✓ Encourage breastfeeding mums to tell their employer they are breastfeeding.
- ✓ Encourage mums to take as long a break as possible from work and look at flexible work options.
- ✓ Advise mums on expressing by hand or using pump (see parent handout).
- ✓ Provide mum with correct information on storage and transporting.
- ✓ Ensure expressing equipment such as bottles and pumps are adequately cleaned.

Table 12 Storage of expressed breastmilk for infant use

Breastmilk status	Room temperature	Refrigerator	Freezer
Freshly expressed into closed container	6-8 hours (26°C or lower) If refrigeration is available, store milk there	3-5 days (4°C or lower) Store in back of refrigerator where it is coldest	2 weeks in freezer compartment inside a 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 (ie next feed)	Store in refrigerator 24 hours	Do not refreeze
Thawed outside refrigerator in warm water	For completion of feeding	Hold for 4 hours or until next feeding	Do not refreeze
Infant has begun feeding	Only for completion of feeding, then discard	Discard	Discard

Adapted from the *Dietary Guidelines for Children and Adolescents in Australia, 2003 (2)*

3.9 Points to consider when discussing breastfeeding cessation

The most common reasons given by Queensland mothers for breastfeeding cessation was 'no milk or not enough milk' (29.6%) (3)



Recommendations from the *Dietary Guidelines for Children and Adolescents in Australia*

Encourage, support and promote exclusive breastfeeding for the first 6 months of life.

Breastmilk gives the infant all the nutrients it needs for around the first 6 months of life. After this time infants need solid food in addition to breastmilk. Queensland Health, the National Health and Medical Research Council and the World Health Organization all recommend that breastfeeding continues until the infant is 12 months old and for as long after as suits both mother and infant.

A mother's decision to cease breastfeeding may be influenced by many factors including her experience of breastfeeding. The most common reasons given by mothers for breastfeeding cessation was 'no milk or not enough milk' (29.6%), followed by 'child old enough to stop' (16%) and 'child self weaned' (16%) (3).



See 'Is my infant getting enough milk?' section

Parent handouts

www.health.qld.gov.au/child&youth/factsheets

Support from family and friends is a really important part of establishing and continuing breastfeeding (12)

As their infant gets older, mothers may experience some problems. They are not signs an infant is ready to wean (12).

Low supply

Check breastfeeding mums are feeding on demand. Explain the concept supply = demand. Refer to the section and parent handout 'Is my infant getting enough milk'. If mother does have a low supply provide her with information on how to increase her milk supply and refer to ABA Helpline and/or lactation consultant.

Teeth

Teeth may initially make the feed feel different but should not cause any discomfort. Biting may occur at this stage when the infant is getting used to and testing out her/his new teeth. When this occurs, advise mums to temporarily remove their infant from the breast and return them when they are ready to feed. The infant will soon learn not to bite at feeding time.

Distractions

As the infant gets older and more interested in and aware of the world around it, the infant may frequently come off during a feed to have a look around. Advise mum to temporarily feed in a quiet room with fewer distractions or turn off the TV during feeds. This stage too passes.

Breast refusal

Infants can sometimes refuse the breast – this can be one-off or repeated and is most often temporary. Causes can be infant related (eg. a cold, distractions, teething) or mother related (eg. hormonal changes, medications, change in perfume). Try to find and deal with the underlying problem. If refusal continues, referral to an Australian Breastfeeding Association counsellor or lactation consultant may be required.

Return of menstrual cycle

Due to the change in mum's hormones, the infant may be a bit fussier with feeding, however this will pass after the first few days of the cycle.

Breast care options during weaning (8)

There are several ways to manage breasts during sudden weaning. All options should be discussed with the mother to allow her to make an informed decision regarding how she will care for her breasts. The degree and duration of breast refilling depends on the amount of milk being produced before weaning commences. The majority of breast discomfort should resolve within 72 hours.

Ideally all infants should be weaned slowly. That is, breastfeeds should gradually be replaced with other milk feeds.

Some mothers have to wean suddenly eg, maternal illness, although this is seldom necessary, and medications incompatible to breastfeeding. Proper care of the breasts is important to minimise discomfort during this time.

Breast care options during sudden weaning

- Express for comfort only, until lactation diminishes.
- Express breasts fully twice a day and then once a day as lactation diminishes. Express in between times for comfort only.
- Women with a large milk supply may find option two more comfortable.
- It is important to discuss contraception with mums during and after weaning as the contraceptive effect of breastfeeding will cease once weaning begins.

Women and paid work (2)

Returning to paid work can have a significant impact on the experience of breastfeeding and is commonly cited as a reason for ceasing to breastfeed. Among the factors that have limited mothers' ability to continue breastfeeding are:

- Lack of information that breastfeeding and working are compatible and practical ways on how to do it.
- Lack of societal value in breastfeeding.
- The relative brevity of maternity leave, (returning to work commences before lactation is fully established).
- Inflexible hours of work.
- Lack of paid breastfeeding (or pumping) breaks while at work.

Until recently, the rights of a woman in paid employment to breastfeed her infant have been neglected; increasingly, though, the social environment in Australia is allowing mothers the choice of working and breastfeeding and this is being recognised in employment contracts. The booklet *Balancing Breastfeeding and Work* outlines the benefits of promoting breastfeeding—for employers, mothers and infants.

Health workers need to be well informed and positive when advising parents about combining breastfeeding and paid work. When it is not possible for the mother to go to her infant during working hours, several options are available:

- replacing breastfeeds during work hours with expressed breastmilk fed from a cup or a bottle
- for infants aged 6 months and over, replacing breastfeeds during work hours with food from a spoon and water from a cup
- replacing breastfeeds during work hours with infant formula fed from a cup or a bottle.

Health workers need to be aware that breastfeeding and formula feeding can be combined: using formula does not mean the mother has to cease breastfeeding. When formula is used during working hours, breastfeeding can still continue before and after work and during weekends. A combination of both expressed breastmilk and formula can be given to an infant when there is not enough expressed milk.



Check out the Queensland Health Work and Breastfeeding site
qheps.health.qld.gov.au/breastfeeding/home.htm

3.10 When an infant is not receiving breastmilk - infant formula

Formula is widely used and introduced early. Twenty three percent (23%) of all children aged less than 5 years, commenced formula before the age of 4 weeks (4).

Recommendations from the *Dietary Guidelines for Children and Adolescents in Australia*

- Parents should be informed of the benefits of breastfeeding and of the risks of not breastfeeding when a change from breastfeeding is being considered.
- If complementary feeding is considered in hospital, the mother's informed consent should be obtained.
- If for any reason breastmilk is discontinued before 12 months of age, a commercial infant formula should be used – instead of cow's milk – as the main source of milk.
- Use soy-based or other special formulas only for infants who cannot take dairy-based products or because of specific medical, cultural or religious reasons.
- Specialty formulas are indicated only for infants with detected or suspected pathology: the advice of a health care professional should be sought.
- It is not appropriate to use nutritionally incomplete alternate milks as the sole source of nutrition for infants.

Parent handout at

www.health.qld.gov.au/child&youth/factsheets/default.asp

If an infant is not breastfed or is partially breastfed, the commercial infant formulas are the most acceptable alternative to breastmilk until 12 months of age (2).

If breastfeeding is not possible, the use of an infant formula with added vitamins, minerals, protein, fat and carbohydrate is recommended. Cow's milk based formula is suitable for most infants and is recommended over formulas made from soy or goat's milk. It is not recommended that infant formula be changed regularly. There is little evidence that changing formula will help an unsettled infant. Specialised formulas should only be used where there is a diagnosed indicated use and should be done so in consultation with a dietitian or medical officer (8).

Regular unmodified cow's or goat's milk is not suitable for infants and should never be used in the first 12 months (2).

Soy milk and goat's milk formulas do not reduce allergies, and should not be used as an alternative to cow's milk formulas (2).



Dietary Guidelines for Children and Adolescents in Australia recommendation:

If your infant is formula fed, please seek advice on formula from your doctor, child health nurse or dietitian. It is recommended to keep your infant on formula until 12 months of age.

When an infant formula is used, the instructions for preparation must be followed exactly.

Tips for families

Getting started

- ✓ Boil water for 5 minutes.
- ✓ Let it cool.
- ✓ Use the instructions on the can to make the formula just right for infant. Too strong and it will hurt the kidneys; too weak and your infant won't grow well. Measure the formula carefully, using the scoop from the container. Level with a knife. Take care not to mix up scoops from other containers.
- ✓ Refrigerate made-up milk if not using immediately.
- ✓ Only keep made-up formula in the fridge for 24 hours.
- ✓ Only put formula and water in the bottle. Do not add cereal, sugar, cordial or anything else.
- ✓ Do not use a bottle to give soft drink, tea or cordial. These are not good drinks for an infant and will greatly increase their chance of getting tooth decay.
- ✓ Hold your infant close when feeding. Do not leave your infant alone to drink the bottle.
- ✓ Do not put your infant to bed with a bottle containing anything other than water.

Sterilising bottles

- ✓ Bottles can be sterilised using boiling, steaming or chemical methods.
- ✓ Use sterilising chemicals or commercial steamers according to the manufacturers' instructions.

Boiling method

- ✓ Wash hands.
- ✓ Wash teats and bottles in hot, soapy water using a bottle brush and rinse well.
- ✓ Place equipment in a saucepan of cold water.
- ✓ Bring to the boil and boil for five minutes, turn off and allow to cool.
- ✓ Store sterilised equipment in a clean, covered container.
- ✓ Sterilised equipment can be stored in the refrigerator for up to 24 hours.

How much milk?

Bottle fed infants should be fed on demand. Each infant is different and needs vary from day to day.

As a guide:

5 days-3 months 150 ml/kg body weight/day

3-6 months 120 ml/kg bodyweight/day

6-12 months 100 ml/kg bodyweight/day

- It is important that infant formula is made up according to the directions and is not too diluted or over concentrated.
- Avoid using the microwave for heating bottles. Microwaves do not heat liquids evenly. Hot spots can form and burn the infant's mouth.
- It may take a while to settle into a feeding routine that suits both caregivers and infants.
- The infant may want to be fed as often as every 3 hours during the day. An exact routine does not need to be followed. When the infant sleeps through a night feed, it means they no longer need it. Do not wake the infant to feed it. Feeding time may last 20 to 30 minutes.

How to feed

- Seat yourself comfortably and hold the infant in your arms while giving the bottle.
- Hold the bottle tilted, with the neck and teat filled with formula.
- If the infant does not firmly grip the teat, gently press under their chin with your thumb and slightly withdraw the teat to encourage sucking.
- This method will help prevent the infant from swallowing air, which can cause wind pain.
- Check the bottle flow. When the bottle is upside down, the milk should drop at a steady flow from the teat. Sometimes the teat gets clogged when a powdered formula is used. Check teats often.
- Even when fed properly, an infant swallows some air. Burping them helps get rid of it. Hold the infant upright over your shoulder or upright on your lap with your hand supporting under the chin. Pat or rub the mid back gently until they burp. Do this halfway through the feed and again at the end.
- Some infants need to be burped more often. However, if the infant is feeding happily, don't stop until they are ready!
- Watch for signs that your infant has had enough.

Remember

- If breastfeeding isn't possible, feed your infant with infant formula.
- Talk to a doctor or child health nurse before you start bottle-feeding.
- Follow the instructions on the can to make the formula just right for your infant.
- Sterilise bottles by boiling, steaming or using special chemicals.
- Wash your hands before you prepare a bottle.
- Feed your infant on demand.
- Hold your infant while they're drinking their bottle.

3.11 Useful websites and resources

Baby friendly hospital initiative (BFHI)

Developed by WHO/UNICEF to encourage health care practices that support breastfeeding while addressing those known to interfere with breastfeeding. The Ten Steps to Successful Breastfeeding, which are outlined in the BFHI and which have been shown to positively influence breastfeeding outcomes, are as follows.

- 1 Have a written breastfeeding policy that is routinely communicated to all health care staff.
- 2 Train all health care staff in skills necessary to implement this policy.
- 3 Inform all pregnant women about the advantages and management of breastfeeding.
- 4 Help mothers initiate breastfeeding within a half-hour of birth.
- 5 Show mothers how to breastfeed, and how to maintain lactation even if they should be 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 on discharge from the hospital or clinic.



For more information: Tel. 1300 360 480 or www.acmi.org.au or www.UNICEF.org

The **WHO International Code of Marketing of Breast-milk Substitutes and the Marketing in Australia of Infant Formulas: Manufacturers and Importers Agreement** provide the basis for control of the marketing of infant formula in Australia

The MAIF Agreement

The MAIF Agreement is the Marketing in Australia of Infant Formulas: Manufacturers and Importers (MAIF) Agreement 1992 (30).

The MAIF agreement is Australia's response to becoming a signatory to the World Health Organisation's International Code of Marketing of Breast-milk Substitutes (WHO code) (30).

Both the WHO Code and the MAIF Agreement are intended to protect infant health by protecting and promoting breastfeeding, and ensuring the proper use of Infant formulas when they are needed (31).

The MAIF agreement applies only to manufacturers and importers of infant formula and does not include retailers or other milk products, foods, beverages or feeding bottles and teats.

Interpretation and implementation of the WHO Code in Australia (2)

The WHO Code has been implemented in Australia through the MAIF Agreement.

Following is a summary of the main points covered by these documents.

- The restrictions in the Code apply to infant formula and other products marketed or represented as infant formulas and to feeding bottles and teats. Responsibilities are outlined for companies that manufacture, market or distribute these products, as well as for health workers and the health care system.
- Educational materials produced by companies for parents should be unbiased and consistent; they should include all the facts, describe all the hazards, and avoid reference to a specific product. Distribution of materials should be only through the health care system, not through retail outlets.
- Companies are not permitted to promote their products to the general public, either directly or through retail outlets. Companies may not give samples or gifts to parents.
Health workers may not give samples to parents.
- Health workers should consider the message about infant feeding that their actions and their health care facility gives to mothers. There should be no display or distribution of products or of company materials that refer to a product or encourage artificial feeding.
- Marketing personnel—even if they are health professionals—should have no contact with parents and should not perform any educational or health care functions.
- Companies may provide scientific and factual information about their products directly to health workers through meetings or materials.
- Companies may not offer, and health workers may not accept, gifts or other inducements that might influence a health worker's product recommendations to parents or their health care facility. Study grants may be accepted in some circumstances, but they must be disclosed.
- All products within the scope of the Code must conform to standards for quality, composition and labelling.
- Independently of measures taken to implement the Code, companies and health workers should take steps to conform to the principles and aim of the Code and to monitor their own practices.

Modified from www.health.gov.au/pubhlth/strateg/brfeed/index.htm



The infant formula manufacturers have voluntarily signed onto the MAIF Agreement in the interest of health and development of infants in Australia. Organisations involved in the MAIF Agreement include:

- Heinz Watties Australasia
- Nestle Australia Limited
- Nutricia Australia Pty Ltd
- Wyeth Australia
- Abbott Australasia(10)

Despite this voluntary agreement, breaches to the agreement have and continue to occur.

Non-government organisations, individuals and professional groups have a responsibility to monitor and report compliance or non-compliance with the Code (31).

For information on how to do this, contact

APMAIF Secretariat
Department of Health and Ageing
Mail Drop Point 15
GPO Box 9848 ACT 2601
Phone (02) 6289 5181



Website (health professionals):

www.health.gov.au/internet/wcms/publishing.nsf/content/health-pubhlth-strateg-foodpolicy-apmaif.htm

Key state and national documents for health workers

National Health and Medical Research Council: Dietary Guidelines for Children and Adolescents in Australia, incorporating the Infant Feeding Guidelines for Health Workers, Canberra 2003.

Commonwealth Department of Health and Aged Care, National Breastfeeding Strategy 1996-2001, Canberra

Queensland Health: Optimal Infant Nutrition: Evidence Based Guidelines 2003-2008, Brisbane

Queensland Health: Infant and Child Nutrition in Queensland 2003. Brisbane 2005

Queensland Health: The Health of Queenslander 2006, Report of the Chief Health Officer Queensland, Brisbane

Queensland Health: Growing Strong: feeding you and your baby, Public Health Services, Queensland Health 2003



Further professional development reading

Breastfeeding Management, 3rd edition. Wendy Brodribb. Ligare Pty, Ltd, Riverwood NSW

Ramsay D.T., Kent J.C., Hartman R.A., and Hartmann P.E. *Anatomy of the lactating human breast redefined with ultrasound imaging* Journal Anatomy (2005) 206 pp 525-

World Health Organization: Breastfeeding and Maternal Medication, 2002

www.who.int/child-adolescent-health/publications/NUTRITION/BF_MM.htm

Thomas Hale: Medications and Mothers Milk 2006, 12th ed

Parent resources



Queensland Health: Child health information fact sheets

www.health.qld.gov.au/child&youth/factsheets/

Queensland Health: Child Health Information: your guide to the first 12 months

Queensland Health: Growing Strong: feeding you and your infant, Public Health Services, Queensland Health 2003

A range of parent resources are also available for purchase from the Australian Breastfeeding Association

Booklets



Each booklet deals with specific topics related to breastfeeding. Drawing on current medical and technical information and the vast counselling experience of the Australian Breastfeeding Association counsellors, these easy to read booklets contain practical suggestions and reflect Australian Breastfeeding Association policies on the management of lactation. They vary in size, up to 36 pages. www.breastfeeding.asn.au

Posters

Books

Video and DVDs

Multilingual resources

Lactation aids

Lactation education aids

A note on *Growing Strong: feeding you and your baby*

The *Growing Strong* resources have been developed to help staff talk with Indigenous families about nutrition for mothers, infants and young children. Information is presented in two forms: a book using straightforward language and plenty of illustrations, and a manual with more detailed background information. *Growing Strong* resources provide information about eating well during pregnancy as well as offering suggestions for dealing with some common food and nutrition related problems. Information is also provided about common breastfeeding issues including how to know when a baby gets enough breastmilk and correct positioning and attachment.

For more information about *Growing Strong* contact:

Nutrition Promotion Officer (Indigenous Health)
Northern Area Health Service
Public Health Nutrition Team
PO Box 1103
Cairns QLD 4870
Ph 4050 3600
Fax 4050 3662

Nutrition Promotion Officer (Indigenous Health)
Central Area Health Service
Public Health Nutrition Team
PO Box 946
Rockhampton QLD 4700
Ph 4920 7383
Fax 4920 6865

Indigenous Nutrition Promotion Officer
Brisbane Southside Population Health Unit
PO Box 333
Archerfield QLD 4108
Ph 3000 9148
Fax 3000 9121

A note on the Australian Breastfeeding Association:

The Australian Breastfeeding Association (ABA) is Australia's leading source of breastfeeding information and support to all sectors of the community. ABA is supported by health authorities and specialists in infant and child health and nutrition. ABA operates a 7-day Breastfeeding Helpline, where callers can contact volunteer breastfeeding counsellors to assist them with breastfeeding issues. ABA provides an electric breast pump hire service as well as mother-to-mother support through more than 75 Queensland groups. ABA's Melbourne-based Lactation Resource Centre specialises in providing comprehensive information and resources on all aspects of human lactation. Study modules and the latest research articles on breastfeeding are available for a fee.

For more information: ABA Queensland Branch Office (07) 3844 6488, 7-day Breastfeeding Helpline Statewide contact numbers, (07) 3844 8166 or (07) 3844 8977 or



www.breastfeeding.asn.au (21)

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