

Key Message 12



Practise exclusive breastfeeding from birth until six months and continue to breastfeed until two years of age



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1. Terminology

Complementary feeding

Complementary feeding is defined as the process starting when milk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast milk. Any non-breast milk foods or nutritive liquids that are given to young children during this period are defined as complementary foods. These foods may be prepared specifically for children, or they may consist family foods that are served both to children and to other household members (PAHO/WHO, 2003).

Exclusive breastfeeding

Exclusive breastfeeding refers to the act of feeding infants solely with breast milk. This includes breastfeeding from a wet nurse and feeding of expressed breast milk. It includes infants who are given vitamins, minerals, medicines, holy water, drops of syrups in addition to breast milk (WHO, 1991).

Expressed breast milk

Expressed breast milk means milk expressed from the breast using manual manipulation or using a breast pump.

Predominant breastfeeding

Predominant breastfeeding refers to the act of feeding infants predominantly with breast milk, as well as given other liquids

(such as water, glucose water and fruits juice) except other non-human milk and food-based fluids (WHO,1991).

2. Introduction

Adequate nutrition is critical to child health and development. It is well recognised that the period from birth to two years of age is a “critical window” for the promotion of optimal growth, health and behavioural development. Longitudinal studies have consistently shown that this is the peak age for growth faltering, deficiencies of certain micronutrients and common childhood illnesses such as diarrhoea. After a child reaches two years of age, it is very difficult to reverse stunting that has occurred earlier (Martorell, Kettel & Schroeder, 1994). The immediate consequences of poor nutrition during these formative years include significant morbidity and mortality and delayed mental and motor development. In the long term, early nutritional deficits are linked to impairments in intellectual performance, work capacity, reproductive outcomes and overall health during adolescence and adulthood.

The World Health Organization (WHO) and United Nation Children is Education Fund (UNICEF) recommended that infants should be exclusively breastfed for the first six months of life and complementary foods should be introduced at the age of six months (WHO/UNICEF, 1989). Among the most important breastfeeding practices include the initiation of breastfeeding within

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one hour of birth and frequent and on-demand feeding (including night feeds). Infants should be breastfed more frequently during illness and recovery. At the age of six months, appropriate, but nutritionally adequate and safe complementary foods must be introduced. Breastfeeding should still be continued until the child is two years and above, while he/she is getting nutritious complementary foods (WHO, 2001).

Over the past decade, the government of Malaysia has recognised the significance of breastfeeding and infant nutrition. The National Breastfeeding Policy was formulated in 1993 and revised in 2005 in accordance with World Health Assembly Resolution 54.2 (2001), whereby exclusive breastfeeding was recommended for the first six months of life and continued up to two years. Complementary foods should be introduced at the age of six months.

The government has made commitments to protect current breastfeeding practices from erosion due to aggressive marketing of breast milk substitutes; support women's desire to breastfeed well by providing appropriate health services, accurate and complete information and an environment which reinforces breastfeeding such as longer maternity leave and breastfeeding facilities in public areas as well as work place.

One of the major strategies undertaken by the Ministry of Health Malaysia was the implementation of the Baby Friendly Hospital Initiative from 1992. Up to December 2008, there were a total of 125 baby-friendly hospitals in the country (MOH, 2008a).

3. Scientific basis

Breastfeeding bring clear short term benefits for child health by reducing mortality and morbidity from infectious diseases. Extensive research using improved epidemiologic methods and modern laboratory techniques documents diverse and compelling advantages for infants, mothers, families and society from breastfeeding and use of human milk for infant feeding (Kramer *et.al.*, 2001). These advantages include health, nutritional, immunologic, developmental, psychological, social, economic and environmental benefits.

Research in developed and developing countries of the world, including middle-class populations in developed countries, provides strong evidence that human milk feeding decreases the incidence and/or severity of a wide range of infectious diseases including bacterial meningitis, bacteremia and diarrhoea. Breastfed children also are less likely to suffer from respiratory tract infections, necrotising enterocolitis, otitis media and urinary tract infections and late onset of sepsis among preterm infants. (AAP, 2005 ; Ip *et al.*, 2007).

Jackson and Nazar (2006) reported that there are evidence of long term benefits of breastfeeding that may influence autoimmunity. Breastfeeding may significantly alter the immune system of the infant. This can be seen by the effect of breastfeeding on thymic size, the antibody response to vaccination and increased tolerance to breast milk leukocyte antigens.

Besides its effect on infectious disease, other positive health outcome of exclusive breastfeeding include decreased rates of sudden infant death syndrome in the first year of life, lymphoma, leukemia and Hodgkin disease and asthma (Horta *et al.*, 2007).

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In a recent report on the systematic reviews and meta-analyses of the long-term effects of breastfeeding, it was concluded that breastfeeding is associated with long term benefits beyond infancy (Horta *et al.*, 2001). This include increased cognitive development in childhood and positive association with educational attainment, significant protective effects on systolic and diastolic blood pressure and lower total cholesterol levels in adults. Furthermore, the prevalence of overweight/obesity and type 2 diabetes were found to be significantly lower among breastfed subjects. Comparison of these effects with those observed for other public health interventions were also made in the same report. It was observed that for total blood cholesterol among adults, the magnitude of the breastfeeding effect was similar to that of dietary advice in adulthood. Similarly, for the prevention of type 2 diabetes, the magnitude was similar to that of diet and physical activity. With regards to obesity, breastfeeding was associated with a 22% reduction in the prevalence of overweight and obesity.

Important health benefits of breastfeeding and lactation have also been described for mothers. The benefits include decreased postpartum bleeding and more rapid uterine involution attributable to increased concentrations of oxytocin, decreased menstrual blood loss and increased child spacing attributable to lactational amenorrhea. Other benefits of breastfeeding to mothers are decreased risk of breast cancer, decreased risk of ovarian cancer and possibly decreased risk of hip fractures and osteoporosis in the postmenopausal period (Ip *et al.*, 2007; AAP, 2005; Labbok, 2001). Mothers who breastfeed are more likely to return to pre-pregnancy weight thus reducing the risk for obesity. Studies have found significant postpartum weight loss in exclusively breastfeeding mothers compared to formula feeding mothers (Janney, Zhang &

Sowers, 1997). A recent study found that the percent body fat loss was significant across time in exclusively breastfeeding mothers and not in mixed feeding mothers suggesting a protective effect of exclusive breastfeeding against cardiovascular disease and other chronic health conditions (Hatsu, McDougald & Anderson, 2008).

In addition to specific health advantages for infants and mothers, breastfeeding also confers economic, family and environmental benefits. These benefits include the potential for decreased annual health care costs; decreased parental employee absenteeism and associated loss of family income; more time for attention to siblings and other family matters as a result of decreased infant illness; decreased environmental burden for disposal of formula cans and bottles; and decreased energy demands for production and transport of artificial feeding products (Cohen, Martek & Mrtek, 1995; Levine & Huffman, 1990).

4. Current status

In Malaysia, nationally representative data on the rates of exclusive breastfeeding was virtually unavailable before the 1990's. The Second National and Health Morbidity Survey, NHMS II 1996 is the first national survey that used the indicators recommended by WHO for assessing breastfeeding practice (WHO, 1991) and provided baseline data for the country. Although the prevalence of ever breastfeeding is 95%, only 29% of infants below four month of age were exclusively breastfed (IPH, 1997).

The Third National Health and Morbidity Survey, NHMS III 2006 indicated that the overall prevalence of exclusive breastfeeding below four months was 19.3%, whilst exclusive breastfeeding below six

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months was 14.5% and predominant breastfeeding was 19.7% (IPH, 2008). There was a significant decline of 9.7% in the prevalence of exclusive breastfeeding and an increase of 9.7% in the prevalence of predominant breastfeeding when compared to the findings of the NHMS II. This may be due to more breastfeeding infants being given other fluids especially plain water in the first four to six months indicating that mothers may not know the importance of exclusive breastfeeding.

Data from the NHMS III also showed that less than 15% of infants below six months were breastfed exclusively in 2006. It is among the lowest compared to the prevalence in other countries in South East Asia where the lowest national prevalence was in Cambodia (11.4%) while the highest was in Nepal (68.3%) (Altrena, Monica & Nourreddine, 2006).

In the NHMS III, the percentage of infants who were exclusively breastfed fell rapidly after the age of two months and at the same time the percentage of infants consuming infant formula began to rise. No information was available to determine factors that may be related to this finding but other studies suggested that working negatively affects breastfeeding (Bitler & Currie, 2004). In Malaysia, about half of the workforce are women and generally the maternity leave is about two months in both the public and private sectors. It could be speculated that mothers replace breast milk with formula or other foods by two months of age in preparation to return to work.

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5. Key recommendations

Key recommendation 1

Prepare for breastfeeding during pregnancy.

How to achieve

1. Be mentally prepared to breastfeed.
2. Get information on breastfeeding from health professionals.
3. Learn the correct techniques to breastfeed.

Key recommendation 2

Initiate breastfeeding within one hour of birth.

How to achieve

1. Place baby on the mother's chest for at least 10 minutes for skin to skin contact.
2. Put baby to the breast for suckling within one hour after delivery.
3. Get nurses or doctors to assist in initiating breastfeeding.

Key recommendation 3

Breastfeed frequently and on demand.

How to achieve

1. Keep baby together with mother most of the time so that baby can be fed whenever he or she wants.
2. Breastfeed when baby show signs of hunger (for instance mouthing, searching for breast or crying).
3. Breastfeed baby at least 8 to 12 times day and night.
4. Do not give pacifiers or artificial teats to breastfed babies except upon doctor's advice.

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Key recommendation 4

Give only breast milk to baby below six months with no additional fluid or food.

How to achieve

1. Feed normal healthy baby below the age of six months only breast milk.
2. Do not introduce other fluids or foods including plain water unless medically indicated upon the advice of a doctor. (Refer to Appendix 1 for acceptable medical reason for use of breast milk substitutes).
3. Watch for signs showing the baby has enough milk such as changing of six to eight wet diapers a day, daily bowel movement and growth according to normal weight gain.

Key recommendation 5

Continue to give babies breast milk even if the baby is not with the mother.

How to achieve

1. Practise expressing breast milk during maternity leave (at least two weeks before returning to work).
2. Train the baby to accept expressed breast milk during maternity leave.
3. Store expressed breast milk properly. Expressed breast milk can be kept for eight days in the refrigerator (Refer to Appendix 2 for breast milk storage).
4. Take as much maternity leave as possible.
5. Make arrangements to have your baby near the workplace, if possible.
6. Arrange a schedule at work to allow enough time to express breast milk.



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Key recommendation 6

Introduce complementary foods to baby beginning at six months of age.

How to achieve

1. Do not start babies on complementary foods before the age of six months.
2. Continue to breastfeed babies until the age of two years even though baby has started to eat complementary foods.

Key recommendation 7

Lactating mothers should get plenty of rest, adequate food and drink to maintain health.

How to achieve

1. Reorganise household chores and have enough sleep.
2. Consume a well-balanced diet with additional one serving of milk and rice or other cereals.
3. Drink at least eight glasses of fluid everyday.

Key recommendation 8

Husbands and family members should provide full support to lactating mothers.

How to achieve

1. Get involved in all aspects of antenatal preparation and postnatal care.
2. Arrange for practical help such as housework and child care while mothers are breastfeeding.
3. Ensure that mothers are provided with nutritious foods.
4. Be caring and understanding towards mothers.

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Additional recommendation:

Breastfeeding and babies of HIV-positive mothers

In adherence to the Ministry of Health's policy, infants born to HIV-positive mothers are strictly not to be breastfed, even by a wet nurse (KKM, 2003). HIV-positive mothers should receive counselling on infant feeding and guidance on safe and appropriate use of infant formula.

Breastfeeding and working mothers

For successful lactation to continue after returning to work, supportive worksite health promotion policies are required that provide education and facilitate either frequent feeding or frequent expression and storage of breast milk.

Health professionals and child care providers should support mothers by encouraging them to continue breastfeeding and offering ongoing support during the transition back into the workplace. In consideration of the extensive published evidence for improved outcomes in breastfed infants and their mothers, a strong advocacy for breastfeeding is justified. Mothers should be encouraged to think positively and not to assume that breastfeeding will not be possible under their particular circumstances.

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Appendices

Appendix 1: Acceptable medical reasons for use of breast milk substitutes

Infant conditions

Infant who should not receive breast milk or any other milk except specialised formula:

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

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

- Very low birth weight infants (those born weighing less than 1500g).
- Very preterm infants; those born less than 32 weeks gestational age.
- Newborn infants who are at risk of hypoglycaemia by virtue of impaired metabolic adaptation or increased glucose demand (such as those who are preterm, small for gestational age or who have experienced significant intrapartum hypoxic/ischaemic stress, those who are ill and those whose mothers are diabetic) if their blood sugar fails to respond to optimal breastfeeding or breast milk feeding.
- Infants younger than six months who, in spite of frequent and effective suckling and in the absence of illness, show persistent growth faltering (as demonstrated by a downward growth curve).

Maternal conditions

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

Mothers who may need to avoid breastfeeding:

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

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Mothers who may need to avoid breastfeeding temporarily:

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

Mother who can continue breastfeeding, although health problems may be of concern:

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

Mothers should be encouraged not to use these substances and given opportunities and support to abstain.

Source: WHO (2009)

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Appendix 2: Method of storing and thawing expressed breast milk

Storing expressed breast milk

- Choose a suitable container made of glass or plastic that can be kept covered. Clean by washing in hot soapy water and rinsing in hot clear water. If the mother is hand expressing, she can express directly into the container.
- If storing several containers, each container should be labelled with the date. Use the oldest milk first.
- The baby should consume expressed milk as soon as possible after expression. Feeding of fresh milk (rather than frozen) is encouraged.
- Milk should not be stored above 37°C.

Thawing

- Frozen breast milk may be thawed slowly in a refrigerator and used within 24 hours.
- It can be defrosted by standing in a jug of warm water and used within one hour, as it is warm.
- Do not boil milk or heat it on the stove, over a direct fire or in a microwave oven. Heating in a microwave oven destroys some of its properties and can burn the baby's mouth.
- Warm only the amount of milk that will be used at one feeding. Milk cannot be stored once it has been warmed.
- The fat may separate out in small globules. Gently shake it to recombine the fat with the rest of liquid.
- Feed the milk to the baby with a cup. A spoon may be used for small amounts.

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Breast milk storage

Method of storage	Healthy baby	Ill baby
Fresh milk		
Room temperature 25° C- 37° C	4 hours	4 hours
Air condition room 15° C- 25° C	8 hours	-
Less than 15° C	24 hours	-
Refrigerator (2° C - 4° C)	< 8 days	48 hours
<ul style="list-style-type: none"> Place the container of milk in the coldest part of the refrigerator or freezer. Many refrigerators do not keep a constant temperature. Thus, a mother may prefer to use milk within three to five days or freeze milk that will not be used within five days, if she has a fever. 		
Frozen milk		
Freezer compartment inside refrigerator (1 door fridge)	2 weeks	2 weeks
Freezer part of a refrigerator freezer (2 door fridge)	3 months	3 months
Separate deep freezer	6 months	3 months
Thawed in a refrigerator	24 hours (do not refreeze)	12 hours (do not refreeze)

Source : Ministry of Health Malaysia (2009)