



Sentinaro Ao*

Complementary feeding : An introduction

"A newborn baby has only three demands. They are warmth in the arms of its mother, food from her breasts, and security in the knowledge of her presence Breastfeeding satisfies all three".

Grantly Dick-Read

The term 'complementary' is important – these first foods complement breast milk, not replace it. Continued breastfeeding for up to two years or beyond provides an essential source of energy and nutrients in child's diet. From 6 months of age a baby needs breast milk and solid foods to promote health, support growth and enhance development. This is called complementary feeding. Complement means they go well together, each have a role to play.

According to World Vision, the nutritional needs of an infant from age 6 months onwards can no longer be met with breast milk alone. To ensure adequate energy and nutrients, an infant's diet must be gradually expanded to include complementary 'family foods'. After about two years of age breast milk is replaced entirely by family foods, although a young child may still sometimes suckle for comfort. However, breast milk is still a good source of nutrients to babies in families with food insecurities.

Importance of complementary feeding

Complementary feeding is needed to provide energy and essential nutrients required for continued growth

and development. The nutrients in recommended complementary foods complement those in breast milk, hence the name.

In general, all nutrients are important. Babies have relatively high metabolic rates and grow rapidly. So, during this time they have proportionately higher nutrient needs.

Babies have small tummies and therefore cannot consume a lot of food at once. So, to ensure sufficient energy intake: feed the baby several small meals a day, feed the baby enough food at each meal and avoid serving food that is very runny.

During pregnancy, the mother's diet and iron stores provide her unborn baby with its required iron and some iron is stored. After birth, the baby receives some iron from breast milk, but also draws from its own stores. At 6 months of age these stores have usually been used up, so food sources have to supplement the amount of iron supplied by breast milk. Some good iron-rich food sources are liver, meat and egg. The foods should be well cooked and pureed or minced and, if possible, given every day.

At the age of 6 months, babies have doubled their birth weight and be-

come more active. Breast milk cannot supply all the necessary nutrients and therefore needs to be supplemented with complementary foods. The digestive system is mature enough to digest the starch, protein and fat from the solid foods.

The impact on health, growth and development is the continued role of breastfeeding. Breastfeeding continues to supply health protective substances to the baby from the mother; the baby will not get this protection without receiving breast milk.

Continued breastfeeding emphasizes that breast milk supplies a large proportion of the nutrients a baby needs. In addition, breast milk also supplies protective factors that help to protect the baby against common infectious diseases and are especially important while the baby's immune system has not yet fully matured.

The consistency of foods be changed at about 8 months. By this age babies have developed enough tongue mobility to enable them to chew and swallow these foods. Babies can start to hold finger foods from the age of 9 to 12 months and have the manual skills to feed themselves and drink from a cup by this age. If they are not introduced at the cor-

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rect age, it may lead to feeding difficulties developing later on.

A baby who does not get enough meals during a day or whose meal sizes are too small will not take in all the necessary nutrients. This can lead to under nutrition.

Baby food does not have to taste bland. Babies are introduced to different tastes already in the womb, depending on their mothers' diets. Similarly, the flavour of breast milk also changes according to the mother's diet. This allows the baby to learn about and enjoy different flavours. These preferences may even track into childhood and adolescence. Adding extra sugar or salt to baby food is not necessary; rather, it could set an undesirable threshold for sweet or salty tastes.

Breast milk will supply most of the fluid needed. Other fluids that can be given are clean water (after or between meals) or fruit juice. If fruit juice is used it should be diluted with water and be used only occasionally. Drinks should be given from a cup; there is no need for a bottle at any stage.

Protect the quality and safety of food

Contamination of foods is a major cause of diarrhoea, which is very common among babies between the ages of 6 and 12 months. Bacteria multiply quickly on warm food and in hot weather, and even small numbers of bacteria can quickly multiply to dangerous levels.

During its preparation or during feeding time, one should wash one's hands properly (with soap and water) before handling the food. All

utensils used for cooking and feeding babies should be very clean. When children start eating finger foods, their own hands should also be thoroughly cleaned.

Breast milk should remain the main source of milk until at least 12 months of age. Pasteurized cow's milk can, however, be used in mixed dishes (e.g. soft porridge or white sauce on pasta) from the age of 6 months.

Babies and young children should not be given foods like sweets, sugary drinks, chips, cakes, ice cream, non-dairy creamers and artificial sweeteners. Honey should be avoided as it may contain spores that cause botulism.

Leftover foods or foods that have been cooked and left standing for a long time should be avoided. Such foods may contain dangerous levels of harmful bacteria, since these microorganisms multiply quickly on warm food. Rather prepare clean, fresh food. All meat products must be well cooked.

Ensure that the baby is being fed in a place free from distractions. The person feeding the baby should concentrate on the baby and ensure interaction during the feeding time. Babies may reject a food when they taste or experience its texture for the first time. Persevere and offer the food again, as it is usually accepted on subsequent introductions

The foods given to babies should match their stage of development. At 6 months of age, a baby's gastrointestinal tract is not fully mature and muscle coordination is still developing, both factors that influence the ability to chew and swallow food.

The immune system is also still immature, which means that babies of this age are more likely than older children to become sick if they eat contaminated foods.

The Global Consultation on Complementary Feeding reported and recommended by WHO 2001 on appropriate feeding practices and guidance for infants and that they should start receiving complementary foods at 6 months of age in addition to breast milk.

References

1. Subha. S. Nutritional Status among under five children in urban, rural Anganwadis. Nightingale Nursing Times January 2015, p 12-13
2. Bartick M, Reinhold A "The burden of suboptimal breastfeeding in the United States: a pediatric cost analysis". Pediatrics 125 (5): p 1048-56. Retrieved on 1-/01-2011 available from: <http://pediatrics.appublications.org/cgi/content/abstracts/peds>.
3. Falco M "Study: lack of breastfeeding costs lives, billions of dollars". CNN. Retrieved on 16-01-2011 available from <http://www.cnn.com/2010/HEALTH/04/05/breastfeeding.costs>.
4. Parthasarathy A. IAP Textbook of Pediatrics. vol 1. 4th edition. Jaypee Brothers Medical Publishers (P) Ltd. New Delhi 2009. p 131-32
5. World Health Organization. The Global Consultation on Complementary Feeding, 2001. ■

No man, not even a doctor, ever gives any other definition of what a nurse should be than this – 'devoted and obedient.' This definition would do just as well for a porter. It might even do for a horse.

Florence Nightingale



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Benefits of exclusive breastfeeding

Breastfeeding is like the basic foundation that has long-lasting impact on a baby's health and development. It not only helps the baby start healthy, but also helps build a very unique and strong emotional bonding between the mother and her child. This has been supported and proved scientifically.

Human milk is the optimal source of nutrition for the infant and young children and has bioactive components that safeguard infant growth and development. Depriving infants from this invaluable nutrition leads to various undesirable consequences. Breastfeeding is the best thing that can happen to both the mother and the baby in the first year. The World Health Organization recommends that mothers exclusively breastfeed for the first six months of their infants' lives. Optimum growth and development is acquired through exclusive breastfeeding.

Importance of breast milk

Breast milk is the greatest gift a mother can gift her baby. Start by having a positive mindset. Nature has programmed the female bodies in a way that the process of breast milk production automatically starts in the body after the baby is born. Mother should just believe in her body and be confident that she will be able to give this beautiful gift to the little one.

In 2001, after a systematic review and expert consultation, exclusive breastfeeding was recommended for

the first 6 months of life. The systematic review commissioned by the WHO compared infant and maternal outcomes for exclusive breastfeeding for 3-4 months versus 6 months. That review concluded that infants exclusively breastfed for 6 months experienced less morbidity from gastrointestinal infection and showed no deficits in growth but that large randomized trials are required to rule out small adverse effects on growth and the development of iron deficiency in susceptible infants.

Benefits of breastfeeding for the baby

Breast milk is the best possible food for a baby and will give her the best start in life. It provides the required nutrition as well as immunity for the baby. It is also best for the mother during this period as well. Knowing the benefits let the mother make the most of the moments. Here are few benefits of breastfeeding for the baby and the mother.

Right nutrients, right balance: Breast milk has the right proportions of proteins, carbohydrates, fats and other nutrients the baby needs to grow and develop.

Easy to digest: Unlike proteins found in regular cow's milk, the proteins in breast milk are naturally gentle and easy to digest.

Bio-available iron: Contains iron that's easy for the baby to absorb. The quantity of iron in breast milk may be low, but its bio-availability makes it significant for the baby.

Builds tolerance: Helps protect the baby against early food allergies, protein intolerance and sensitivity.

Offers protection: Provides natural protective antibodies and other immune-related benefits.

Helps digestive system: Fosters a healthy environment in the baby's digestive system.

Evolves: Changes to meet the changing needs of the growing baby.

Creates bonding: Provides a perfect opportunity for bonding with of baby and mother.

Reduces risks: Reduces the risk of diarrhoea and respiratory illnesses.

Benefits of breastfeeding for the mother

Produces helpful hormones: Stimulates the production of the hormone oxytocin, which causes the uterus to contract and return to its pre-pregnancy size.

Burns calories: Helps to burn extra calories and lowers fat stores, helping a mother to return to her pre-pregnancy weight more quickly.

Creates bonding: Provides the perfect opportunity for snuggling, bonding and skin-to-skin contact.

Risk of becoming pregnant reduced: Mothers who breastfeed exclusively and frequently have less than 2% risk of becoming pregnant in the first six months of delivery,

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provided they still have amenorrhoea.

Longer health: Less chance of developing osteoporosis and breast or ovarian cancer later in life.

In addition to offering several health benefits to the infants and mothers, breastfeeding is also economical due to the reduced healthcare costs (due to less illness) and saves time and wages lost while attending an ill child.

Misconceptions of breast milk

The most common misconceptions are:

Is breast milk good enough?:

This is a common question. Nature has perfectly calculated the amount of nutrition that the baby needs. Breast milk is a living fluid; it contains live and defensive white blood cells and antibodies which protect the baby from allergies and infections, hence boosting the immunity of the baby.

Moreover, it is recognised as the most hygienic form of feeding the baby. There is no container and no sterilisation involved. The milk goes directly from the mother's breast to baby's mouth. In fact, mothers should ensure that their baby gets only breast milk without any top feed.

Should some top feed be ready if the baby cries?

One of the biggest misconceptions amongst Indian families, especially those with grandmas and nannies, is to top feed the child if the child becomes a bit cranky. Please don't think that babies cry only when they are hungry. Mother's milk is the best milk for the baby just like an animal's milk is meant for their newborns and not for human babies. The scientific rationale behind this fact suggests that top milk - formula milk or cow's milk or buffalo's milk is very heavy compared to breast milk, which is very thin and watery.

Mother's milk is 88% water & 12%

solid. When a baby is fed with the top milk he remains so full that he does not suckle properly, which results in lesser production of milk. Mothers should encourage demand feeding and breastfeed their child as often as they can.

Do mothers have to drink lots of milk to produce it for the baby?

The answer is No. A mother just has to drink lots of fluid and maintain a healthy balanced diet. She should make sure that she has a healthy diet but that does not mean she cannot add spices to her food or cannot eat beans as it could harm the baby. The mothers can have anything as long as it is healthy and consumed in moderation.

Abstain from alcohol totally:

Mothers should not allow peer pressure to push them into consuming alcohol saying that it will help them relax. Alcohol, even in small quantities, is poisonous for the baby. When a mother drinks alcohol it passes from the blood stream into breast milk. Unlike adults, a newborn baby is able to eliminate alcohol only at half the rate of the mother, leading to alcohol accumulation in the baby's blood stream.

Consult a doctor before taking any medication:

Be careful while taking any over-the-counter medication for cough & cold or even for a fever. Consult the doctor first, as it could harm the baby.

Maintain good breast hygiene:

It is not necessary to clean the breast or nipple in any special way. Simple rinsing off the breasts, areola and nipple with clean water while having daily bath is sufficient. Mothers should avoid using soap or disinfectants on the nipple and areola as this may dry the skin leading to sore nipples.

Mothers' body naturally secretes an oily substance which protects the nipple area from dryness and prevents infection. This substance should not be washed as it is useful. Rubbing a small amount of breast

milk after feeding helps in keeping the nipples lubricated. Consult the doctor if mother's skin is sore, too dry, painful or damaged.

Choose the clothing wisely:

It is better to wear clothes which allow air to circulate and moisture to evaporate. When a mother outgrows regular bra it is advisable to buy a nursing bra instead of a regular large one. It should be soft, breathable without plastic cladding at the back. With clothes a mother does not have to change her style too much but it is advisable to choose clothes that are comfortable and give mother enough room to move around.

Breastfeeding should be promoted among mothers. Supporting new mothers, especially during pregnancy, hospital stay and early post discharge, regarding early initiation, correct positioning & attachment is crucial for successful breastfeeding.

References

1. Breastfeeding: Importance of breast milk Sobiya N. Moghul, Health Me Up | Feb 22, 2015, 12.00 AM IST
2. Dr Anjali Kumar, Head of the Department & Senior Consultant in Gynecology and Obstetrics from Paras Hospitals, Gurgaon.
3. Breast Feeding - The Gold standard, A Scientific Update Editor(s): Conference Proceedings & Specific Issues 2013
4. World Health Organization. Complementary feeding of young children in developing countries: a review of current scientific knowledge. Geneva, Switzerland: World Health Organization, 1998. (WHO/NUT/98.1.)
5. 55th World Health Assembly. Infant and young child nutrition. Geneva, Switzerland: World Health Organization, 2002 (WHA55.25).

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6. Internet:http://www.who.int/gb/ebwha/pdf_files/WHA55/ewha5525.pdf (accessed 21 December 2006)
7. World Health Organization. Global strategy for infant and young child feeding. Geneva, Switzerland: World Health Organization, 2003.
8. Wilson AC, Forsyth JS, Greene SA, et al. Relation of infant diet to childhood health: the Dundee infant feeding survey. *BMJ* 1998;316:21-5.
9. Kramer MS, Guo T, Platt RW, et al. Infant growth and health outcomes associated with 3 compared with 6 mo of exclusive breastfeeding. *Am J Clin Nutr* 2003;78:291-5.
10. Lanigan JA, Bishop J, Kimber AC, Morgan J. Systematic review concerning the age of introduction of complementary foods to the healthy full-term infant. *Eur J Clin Nutr* 2001;55:309-20. ■

Surrogacy and women's health rights

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as a person unknown to the couple may act as a surrogate mother for the couple. In the case of a relative acting as a surrogate, the relative should belong to the same generation as the women desiring the surrogate.

No woman may act as a surrogate more than thrice in her lifetime.

A prospective surrogate mother must be tested for HIV and shown to be seronegative for this virus just before embryo transfer. She must also provide a written certificate that (a) she has not had a drug intravenously administered into her through a shared syringe, (b) she has not undergone blood transfusion; and (c) she and her husband (to the best of her/his knowledge) has had no extramarital relationship in the last six months. (This is to ensure that the person would not come up with symptoms of HIV infection during the period of surrogacy.) The prospective surrogate mother must also declare that she will not use drugs intravenously, and not undergo blood transfusion excepting of blood obtained through a certified blood bank⁸.

Conclusion

If used genuinely surrogacy will be a win-win situation, where childless couples see their dream come true with a genetic child and the needy surrogate mother gets support to

live better. The surrogacy arrangement should also provide for financial support for the unfavorable consequences of pregnancy and for the surrogate child in case the commissioning couple dies before delivery of the child, or divorce between the intended parents.

A surrogacy contract should necessarily take care of life insurance cover for surrogate mother. One of the intended parents should be a donor as well, because the bond of love and affection with a child primarily emanates from biological relationship. Right to privacy of donor as well as surrogate mother should be protected without forgoing the rights of a surrogate mother. Sex-selective surrogacy should be prohibited.

When nearly 12 million Indian children are orphans, the rising demand for surrogacy seems to be ironical, yet simplification and reasonable adoption procedures in India may bring down the rates of surrogacy. Altruistic and not commercial surrogacy should be promoted. Regulations should be implemented to cover the grey areas and to protect the rights of women and children.

References

1. Committee on Ethics. ACOG committee opinion number 397, February 2008: Surrogate motherhood. *Obstetric Gynecol-*

ogy 2008; 111:465-70.

2. Sharma R. An International, Moral & Legal Perspective: The Call for Legalization of Surrogacy in India. 2007. Available from: <http://www.ssrn.com/abstract=997923>.
3. Surrogate Motherhood in India. Available from http://www.stanford.edu/group/women_courage/Surrogacy/moral_ethical
4. Commercial surrogacy and fertility tourism in India, The Case of Baby Manji, The Kenan Institute for Ethics at Duke University. The case studies in ethics. Available from: http://www.nt.gov.au/justice/policycoord/documents/polcoord_surrogacy_consultation
5. Government of India, MOH&FW, ICMR: 2008, ART (Regulatory) Bill, Ch. II, V, VII., Part I. and Schedule I, Part 7 on Forms, 2008. p. 6-11, 20-2, 25-9, 81-135. 36. Available from: <http://www.andrewkimbrell.org/andrewkimbrell/doc/surrogacy.pdf>.
6. <http://www.womenleadership.in/Csr/SurrogacyReport.pdf>.
7. Singh KK. Human genome and human rights: An overview. *J Indian Law Inst* 2008; 50:67-80. ■