

Complementary Feeding

Breastfeeding alone is sufficient food for all babies till 6 months of age. From 6 months, complementary foods are required to ensure adequate growth and to prevent malnutrition and stunting. In order to help mothers to feed their infants appropriately you need to know the age of introduction of complementary foods, type, texture, frequency, amount of food and method of feeding.

*The 6-11 month period is an especially vulnerable time because infants are just learning to eat and must be fed soft foods frequently and patiently. Care must be taken to ensure that these foods complement rather than replace breastmilk. For older infants and toddlers, breastmilk continues to be an important source of **energy, protein, vitamin A and vitamin C**. Therefore, breastfeeding should continue upto the age of 2 years along with complementary feeding. All health care providers should be able to counsel mothers with regard to complementary feeding and guide them concerning age of introduction, type and texture of food, quantity, and method of feeding.*

Age of introduction of complementary foods

For all infants after six months of age.

Sufficient scientific data is now available to support that exclusive breastfeeding should be continued till six months and complementary foods added to breastmilk after 6 months. Initiating complementary foods **too early** or **too late** can lead to malnutrition. If given **too early** the infant may not be ready to digest the food properly and may also reduce intake of breastmilk thereby losing out on appropriate energy intake for his/her growth. Early introduction of complementary foods replaces breastmilk by food which is usually less

nutritious. It also increases the risk of diarrhoea and other infections.

After six months of age, however, the breastmilk cannot supply all the needs of the growing baby. Introduction of complementary feeds **too late** results in an inadequate intake of energy and protein leading to poor growth as well as iron and other nutritional deficiencies.

Why at 6 months

An understanding of the development of suckling and chewing abilities in babies is necessary for the **timing of the introduction** of complementary feeding.

By six months an infant can voluntarily

Dear Reader,

*Malnutrition in children is a major problem facing us and to reduce it, a multi-faceted approach is essential. We at BPNI set up an expert group to review the areas which require special focus in the health sector. Its outcome, the **Infant and Young Child Feeding Update** will provide you information on caring practices to reduce malnutrition in the young child. We welcome your valuable contribution based on your experience.*

control sucking and swallowing, and biting movements begin. The tendency to push solids out of mouth decreases. Teeth begin to erupt and pancreatic enzymes reach adequate levels for digestion of starch. By the age of nine months an infant can use lips to clear a spoon and use the tongue to move food between the teeth. Solids can also be chewed at this age.

This implies that from about 6 months, a child can eat soft and starchy foods such as cereals. By 9 months infants can be given chopped foods.

By one year a child can eat family foods and if trained should be able to use fingers or spoon to feed self.

Taste, consistency and texture and types of complementary foods

A child's first food should be based on cereals like suji or fruit like banana which are soft, thicker than breastmilk, and bland in taste, mashed or strained to homogenize.

The consistency of food should be suitable as per the child's age. For very young infants, liquid supplements should be given and their consistency gradually needs to be changed from liquid to semisolid and then to solid with advancing age of the child. Initially, a baby might spit out the food. That does not mean s/he does not like it. Learning to swallow semisolid food is difficult for a baby who only knows how to suckle at the breast. Husks, bean skin and vegetable fibers may cause indigestion, so everything must be mashed at the beginning.

The first pre-requisite of a good complementary food is to meet the nutritional needs of the child. No single food can meet all the nutrient requirements. Essential nutrients are widely distributed in nature and can be obtained from many foods with ease. Also, most of the foods contain more than one and quite often, many of the essential nutrients in varying proportions. Therefore to achieve a balance of

nutrients, foods should be included from all the three food groups (energy giving, body building and protective) in the diet.

Foods	Major Nutrients	Functions
<ul style="list-style-type: none"> Milk Meat Pulses 	Protein	Body Building
<ul style="list-style-type: none"> Cereal, starches Fat Sugar 	Carbohydrates & Fat	Energy Giving
<ul style="list-style-type: none"> Vegetables (excluding starchy vegetables) Fruits 	Minerals, Vitamins & Dietary fibres	Protective

Source: Adapted from Text Book of Nutrition and Dietetics, Deptt. of Food & Nutrition, Institute of Home Economics, University of Delhi.

Tips

- Potatoes, carrots, beans can be easily cooked along with *dal* and rice or *daliya* and mashed to desired softness to feed the young child.
- Adding oil or butter to cooked and mashed food is a good way to increase energy density.
- When introducing fresh fruit in the diet mash it for easy feeding.
- During illness, give small frequent meals along with breastmilk.
- Avoid spices and chillies.
- If a food makes the baby sick or he turns pale, it should not be given till the baby is older, as the baby may be allergic to the food.
- Offer home made family foods as they are more nutritious. Commercially processed foods are seemingly convenient but are not better or even equal to home made foods and they are 6 times costly as well. (Gupta A, Bhatia S. *Commercial Infant Foods-Analysis of Promotion*, BPNI 1998)

Applying this Information

Frequency of complementary foods

When food is first introduced, a small amount should be given 1-2 times a day. From the age of six months to one year adequate serving of complementary foods should be given thrice a day and gradually the amount should be increased. If the child is not breastfed, complementary foods should be given five times a day. It is advisable to continue frequent breastfeeding including night breastfeeds up to two years of age.

Feeding Practice

Children can usually feed themselves by one year of age but they need supervision and help.

- Mothers/care-givers should introduce one food at a time.
- The child should never be fed forcibly. If the child dislikes a particular food, it should be removed from his/her diet for some time and re-introduced at a later stage or mixed with another food that the baby likes. If the child shows a persistent dislike for that food, it should not be forced upon. No food is indispensable and some other substitute can always be given.
- Variety should be introduced in the child's diet to make it more appealing.
- As the child grows older, colour, flavour, texture and shape of the food can be given special consideration so as to attract child's attention.
- To make the child learn to eat all types of foods and to inculcate good eating habits among children, the parents should not show personal prejudices and dislikes towards any foods.
- Use meal times as an opportunity for communicating with the child.
- It is not always necessary to cook separately for the child, as the family meals can be easily modified in consistency, spicing, etc; for the amount needed to feed the child.

Did you know?

- ⇒ Recent studies show that the introduction of complementary foods before the age of six months neither enhances growth nor nutritional status of infants and that these foods replace breastmilk in breastfed infants and increase exposure to contaminated weaning foods. (*Ann CH, Maclean WC. Growth of the exclusively breastfed infant. Am J Clin Nutrition 33: 183-192, 1980; Cohen RJ et al. Effects of age of introduction of complementary foods on infant breastmilk intake, total energy intake, and growth: a randomised intervention study in Honduras. The Lancet. 44:288-293, 1994*)
- ⇒ Early introduction of complementary foods can lead to malnutrition and more importantly decrease mother's milk production due to decreased Prolactin, a hormone, which is responsible for milk production, and depends on suckling stimulation by the baby. (*Malek M A et al. Effects of Training Mothers on Weaning and Supplementary Food in Rural Bangladesh. Journal of Child Health, 10: 134-137, 1986*)

- Feed slowly and patiently and minimize distractions during meals.
- Encourage the child towards self eating.

Hygiene and Care

- When a child starts complementary food, there is increase in risk of diarrhoea. Care should be taken to prepare and handle food hygenically.
- Feed the child fresh food and keep food away from flies, insects and pets. Use cooked food within few hours.

A child of 1-2 years needs half the amount of food that his/her mother eats.

It is preferable to continue breastfeeding until about 2 years. Let the baby decide when to stop breastfeeding. The best time to wean is when the baby wants to stop breastfeeding. Advise mothers to slowly wean off from the breast and not suddenly. Gradually breastmilk supply will decrease and baby will lose interest. The less the baby suckles less breastmilk is made.

Commonly asked questions

Q 1. My baby is 4 mths old and I am away from home between 8.30 a.m. to 6.30 p.m. How much expressed breastmilk is adequate for each feed and how it should be stored?

Response: It is good that you are keen to give breastmilk to your baby while you are away at work. Here are some useful guidelines.

- ➔ Breastfeed your baby before you leave for work and as soon as you can when you return from work. Baby would need a feed every 3 or 4 hours so you can express enough to last the time that you are away.
- ➔ Your baby would need around 100ml (i.e. about $\frac{3}{4}$ cup) of expressed breastmilk (EBM) per feed. If you can store for each feed separately then that will be good.
- ➔ Breastmilk can be expressed and stored safely in a clean cup for 8 hours at room temperature even in a hot climate and 24 hours in refrigerator. Use a clean plate to cover the cup.
- ➔ Do not heat expressed milk. If you had stored it in the refrigerator, then ask the care-giver to bring it to room temperature by keeping it out of the refrigerator or keep the cup of milk in a basin of warm water – do not heat the milk.

Q.2. I do not have enough milk so I give some artificial milk in addition to breastfeeds. Is that OK?

Response: Firstly, you need to know, what makes you think that you do not have enough milk. I would like to inform you that if the baby is passing urine 6 or more times a day and is gaining weight appropriately i.e. 500gms per month, then s/he is getting enough milk. If the baby is not getting enough, please don't be anxious or tense as it will affect your oxytocin reflex that is responsible for flow of breastmilk from your breast to your baby. Be confident to keep up your milk supply. Check if your baby is suckling in correct position or not, and you are frequently breastfeeding on demand to the child day and night. It is baby's suckling that controls whole production of breastmilk through a hormone called 'Prolactin'. The other hormone Oxytocin controls the flow of milk from your breast to the baby and is dependant on your confidence, thoughts and feelings; good feelings enhance it, anxiety or doubt depress it.

In our next issue we will cover *Problems in initiating breastfeeding and how breastfeeding works.*

Resources

Following publications are available at BPNI Resource Center, in case you need to order; please send your payments through DD in favour of "BPNI Delhi".

The Law to protect and promote breastfeeding. A book that explains the provisions of the IMS Act in a simple manner.

Rs. 40 each

Under Attack - An Indian Law to Protect Breastfeeding - A report on the monitoring of the Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992 (The IMS Act)

Rs. 100 each

Commercial Infant Foods - Analysis of Promotion - A report on the ways and means of promotion used by the manufactures

Rs. 100 each

Breastfeeding and Infant Feeding-A Guide for the parents (in Hindi and English)

Rs. 10 each

Human Lactation Management Training (HLMT) Course Module. A course for Doctors, Nurses & Breastfeeding Counsellors (In English). A set with slides and transparencies.

Rs. 2500 each set

Helping Mothers to Breastfeed an ACASH (Mumbai) publication.

Rs. 100 each

Maternity Home Practices & Breastfeeding an ACASH (Mumbai) publication.

Rs. 35 each

Poster "Closeness and Warmth" 15" x 20"

Rs. 10 each

Breastfeeding Posters 12" x 18" (in English & Hindi)

Rs. 5 each

Video: Maa Ka Pyar - Sishu Ahaar (माँ का प्यार शिशु आहार)

Language: Hindi, **Duration:** 13 minutes. this video covers early, exclusive breastfeeding, how to breastfeed and complementary feeding.

Rs. 250 per cassette



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